SPECIALTY TRAINING CURRICULUM

FOR

IMMUNOLOGY

AUGUST 2010

Joint Royal Colleges of Physicians Training Board

5 St Andrews Place
Regent's Park
London NW1 4LB

Telephone: (020) 79351174
Facsimile: (020)7486 4160
Email: ptb@jrcptb.org.uk
Website: www.jrcptb.org.uk

Table of Contents

1 Introduction

Immunology as a medical specialty deals with the clinical and laboratory care of patients with diseases due to disordered immunity. Immune-mediated disease covers a wide spectrum of disorders, ranging from failure of the immune system (immunodeficiency) to disorders characterised by heightened immune reactivity (allergy and autoimmunity). In practice, clinical immunologists take a lead role in the investigation and management of patients with immunodeficiency and severe allergy whilst working collaboratively with relevant organ-based specialists to provide optimal care for patients with systemic autoimmune disease and vasculitis. Alongside the provision of a clinical service to the aforementioned group of patients, immunologists direct a comprehensive diagnostic laboratory service which underpins the diagnosis and monitoring of this broad range of immunological diseases.

2 Rationale

2.1 Purpose of the Curriculum

The purpose of this curriculum is to define the process of training and the competencies needed to produce a consultant immunologist capable of independent practice in the United Kingdom. The award of a certificate of completion of training in the specialty will denote that a trainee is equipped with the requisite specialised scientific knowledge, clinical and laboratory skills required to diagnose, treat and where relevant, prevent diseases characterised by immunodeficiency, autoimmunity and allergy coupled with the ability to direct a diagnostic immunology laboratory service. The UK clinical practice of immunology is fully consistent with the World Health Organisation's (WHO) definition of Immunology as a specialty , encompassing clinical and laboratory activity dealing with the study, diagnosis and management of patients with diseases resulting from disordered immunological mechanisms, and conditions in which immunological manipulations form an important part of therapy(*Lambert PH et al.Clinical Immunology: -guidelines for its organisation, training and certification: relationships with allergology and other medical disciplines - a WHO/IUIS/IAACI report. Clin Exp Immunol 1993;93:484-91)*. In practice, this translates in to Immunologists providing combined clinical and laboratory services for patients with immunodeficiency, autoimmune disease, vasculitis and allergy.

The curriculum has been designed to build upon the knowledge and core competencies in general internal medicine that trainees will bring with them as they enter immunology training. Throughout specialty training, the curriculum provides a structured framework to enable incremental learning and reflection across the whole breadth of clinical and laboratory immunology.

2.2 Development

This curriculum was developed by the Immunology SAC of JRCPTB for Immunology which includes lay representation and training programme directors, in consultation with all stakeholders including trainees and trainers. It replaces the previous version of the curriculum dated May 2007 with changes to ensure the curriculum meets GMC’s standards for Curricula and Assessment, and to incorporate revisions to the content and delivery of the training programme. Major changes from the previous curriculum include the incorporation of leadership, health inequalities and common competencies.

A draft version of the curriculum was circulated to all immunology consultants and trainees. Patient’s views on the curriculum were obtained through the Primary Immunodeficiency Association (PiA), the national patient support organisation for patients with immunodeficiencies .

The content of this curriculum was chosen by the SAC to reflect current UK hospital practice in Immunology. Educational supervisors and trainees were involved in its development via their representation on committees such as the Immunology SAC of JRCPTB.

2.3 Training Pathway

Specialty training in Immunology consists of core and higher speciality training. Core training provides physicians with: the ability to investigate, treat and diagnose patients with acute and chronic medical symptoms; and with high quality review skills for managing inpatients and outpatients. Higher speciality training then builds on these core skills to develop the specific competencies required to practise independently as a consultant Immunologist.

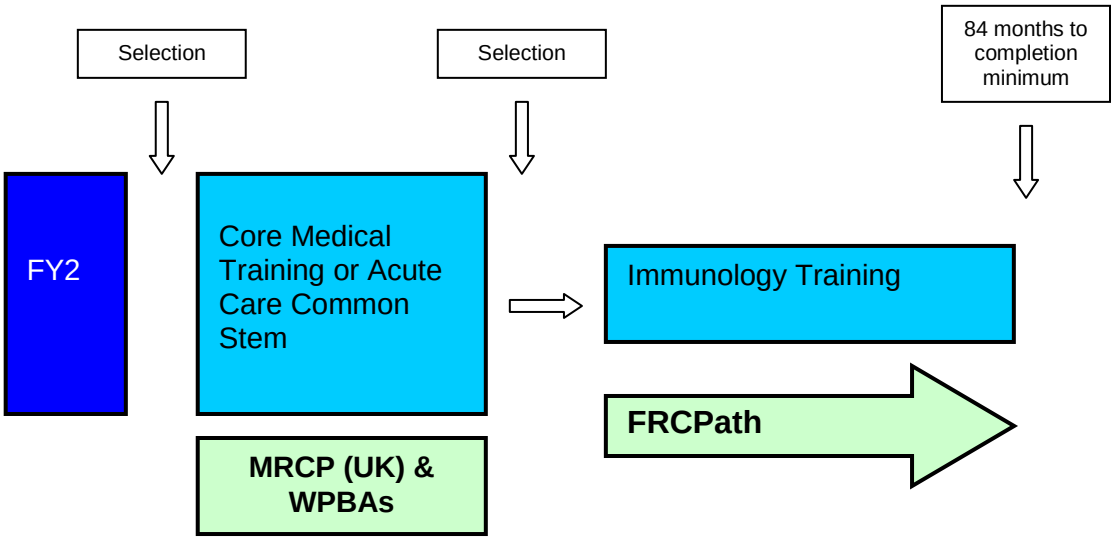
Core training may be completed in either a Core Medical Training (CMT) or Acute Care Common Stem (ACCS) programme. The full curriculum for specialty training in Immunology therefore consists of the curriculum for either CMT or ACCS plus this specialty training curriculum for Immunology.

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

Completion of CMT or ACCS and acquisition of full MRCP (UK) will be required before entry into Specialty training at ST3 (2011 onwards).

The approved curriculum for CMT is a sub-set of the Curriculum for General Internal Medicine (GIM). A "Framework for CMT" has been created for the convenience of trainees, supervisors, tutors and programme directors. The body of the Framework document has been extracted from the approved curriculum but only includes the syllabus requirements for CMT and not the further requirements for acquiring a CCT in GIM.

Diagram 1.0 Training Pathway for Immunology



2.4 Enrolment with JRCPTB

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

2.5 Duration of Training

Although this curriculum is competency based, the duration of training must meet the European minimum of 4 (four) years for post registration in full time training adjusted accordingly for flexible training (EU directive 2005/36/EEC) requires that flexible training can be no less than 50% whole time equivalent). The SAC has advised that training from ST1 will usually be completed in 7 (seven) years in full time training.

2.6 Less Than Full Time Training (LTFT)

Trainees who are unable to work full-time are entitled to opt for less than full time training programmes. EC Directive 2005/36/EC requires that:

- LTFT shall meet the same requirements as full-time training, from which it will differ only in the possibility of limiting participation in medical activities.
- The competent authorities shall ensure that the competencies achieved and the quality of part-time training are not less than those of full-time trainees.

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

EC Directive 2005/36/EC states that there is no longer a minimum time requirement on training for LTFT trainees. In the past, less than full time trainees were required to work a minimum of 50% of full time. With competence-based training, in order to retain competence, in addition to acquiring new skills, less than full time trainees would still normally be expected to work a minimum of 50% of full time. If you are returning or converting to training at less than full time please complete the LTFT application form on the JRCPTB website www.jrcptb.org.uk .

Funding for LTFT is from deaneries and these posts are not supernumerary. Ideally therefore 2 LTFT trainees should share one post to provide appropriate service cover.

Less than full time trainees should assume that their clinical training will be of a duration pro-rata with the time indicated/recommended, but this should be reviewed during annual appraisal by their TPD and chair of STC and Deanery Associate Dean for LTFT training. As long as the statutory European Minimum Training Time (if relevant), has been exceeded, then indicative training times as stated in curricula may be adjusted in line with the achievement of all stated competencies**.**

3 Content of Learning

3.1 Programme Content and Objectives

The syllabus (subject matter) for the curriculum comprises the following principal areas:

- Acquisition of a core body of knowledge in fundamental immunology and its applications
- Investigation and management of patients with congenital and acquired immunodeficiency disorders
- Investigation and management of patients with autoimmune (including rheumatic) disease and systemic vasculitides in liaison with appropriate organ-based specialist colleagues
- Investigation and management of patients with allergic diseases. As a group, Immunologists comprise the single biggest specialty currently providing specialist allergy services. In recognition of this important service need, trainees must demonstrate competence in the independent diagnosis and management of common allergic disorders of all degrees of severity
- Delivery of a diagnostic immunology laboratory service in accordance with accreditation standards laid down by Clinical Pathology Accreditation (CPA UK) or other recognised accrediting bodies
- In addition, trainees should be able to explain the principles underlying solid organ and stem cell transplantation
- Acquire “Generic Skills” required for immunology, in accordance with Good Medical Practice (see below)

On completion of the immunology training programme, the trainee must have acquired and be able to demonstrate:

- Appropriate attitudes and behaviours in order to be able to work as a consultant
- Good working relationships with colleagues and the appropriate communication skills required for the practice of immunology
- Knowledge, skills, attitudes and behaviours to act in a professional manner at all times
- Knowledge, skills, attitudes and behaviours to provide appropriate teaching and to participate in effective research to underpin immunology practice
- Understanding of the context, meaning and implementation of clinical governance
- Knowledge of the structure and organisation of the NHS
- Acquisition of management skills required for the running of an Immunology laboratory
- Familiarity with health and safety regulations, as applied to the work of an Immunology department

3.2 Good Medical Practice

In preparation for the introduction of licensing and revalidation, the General Medical Council has translated Good Medical Practice into a Framework for Appraisal and Assessment which

provides a foundation for the development of the appraisal and assessment system for revalidation. The Framework can be accessed at http://www.gmc-uk.org/Framework_4_3.pdf_25396256.pdf

The Framework for Appraisal and Assessment covers the following domains:
Domain 1 – Knowledge, Skills and Performance
Domain 2 – Safety and Quality
Domain 3 – Communication, Partnership and Teamwork
Domain 4 – Maintaining Trust

The "GMP" column in the syllabus defines which of the 4 domains of the Good Medical Practice Framework for Appraisal and Assessment are addressed by each competency. Most parts of the syllabus relate to "Knowledge, Skills and Performance" but some parts will also relate to other domains.

3.3 Syllabus

In the tables below, the "Assessment Methods" shown are those that are appropriate as **possible** methods that could be used to assess each competency. It is not expected that all competencies will be assessed and that where they are assessed not every method will be used. See section 5.2 for more details.

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

Each section of the curriculum outlines the knowledge, skills and behaviours that must be obtained by the trainee in order to successfully complete training. During their training, it is expected that the trainee will progress through three levels of competence, as outlined below:

> Level 1: Introductory - The trainee has comprehensive understanding of principles and practices under direct supervision.
>
> Level 2: Intermediate - The trainee has a good general knowledge and understanding of most principles and practices under indirect supervision. He/she should be able to deal with most of the day-to-day issues in a hospital immunology laboratory and outpatient clinic/ward to an adequate level but will still require consultant input with regard to complex management and clinical issues.
>
> Level 3: Independent - The trainee has an in-depth knowledge and understanding of principles. He/she should be competent to discuss and deal with the subject (or, where appropriate, perform the task/procedure), demonstrating a level of clinical or professional judgement commensurate with independent practice at consultant level. It is anticipated that a trainee at this level should have consultant input readily available at all times where required

Syllabus Contents

1. Common Competencies

1.1 History Taking

To elicit a relevant focused history from patients with increasingly complex issues and in increasingly challenging circumstances

To record the history accurately and synthesise this with relevant clinical examination, establish a problem list increasingly based on pattern recognition including differential diagnosis and formulate a management plan that takes account of likely clinical evolution

Knowledge	Assessment Methods	GMP
Comprehends the importance of different elements of the history	mini-CEX	1
Comprehends that patients do not always present their history in a structured fashion	mini-CEX	1,3
Knows the likely causes and risk factors for conditions relevant to mode of presentation	mini-CEX	1
Recognises that the patient's wishes and beliefs and the history should inform examination, investigation and management	mini-CEX	1
Recognises the importance of social and cultural issues and practices that may have an impact on health	mini-CEX	1
Skills		
Identifies and overcomes possible barriers to effective communication	mini-CEX	1,3
Communicates effectively with patients from diverse backgrounds and those with special communication needs, such as those who need interpreters	mini-CEX	
Manages time and draws consultation to a close appropriately	mini-CEX	1,3
Comprehends that effective history taking in non-urgent cases may require several discussions with the patient and other parties, over time	mini-CEX	1,3
Supplements history with standardised instruments or questionnaires when relevant	mini-CEX	1,3
Manages alternative and conflicting views from family, carers, friends and members of the multi-professional team and maintains focus	mini-CEX	1,3
Assimilates history from the available information from patient and other sources including members of the multi-professional team.	mini-CEX	1,3
Where values and perceptions of health and health promotion conflict, facilitates balanced and mutually respectful decision making	mini-CEX	
Recognises and interprets appropriately the use of non verbal communication from patients and carers	mini-CEX	1,3
Focuses on relevant aspects of history	mini-CEX	1,3
Behaviours		
Shows respect and behaves in accordance with Good Medical Practice	mini-CEX	3,4

1.2 Clinical Examination

To perform focused, relevant and accurate clinical examination in patients with increasingly complex issues and in increasingly challenging circumstances

To relate physical findings to history in order to establish diagnosis and formulate a management plan

Knowledge	Assessment Methods	GMP
Understands the need for a targeted and relevant clinical examination	CbD, mini-CEX	1
Understands the basis for clinical signs and the relevance of positive and negative physical signs	CbD, mini-CEX	1
Comprehends constraints (including those that are cultural or social) on performing physical examination and strategies that may be used to overcome them	CbD, mini-CEX	1
Comprehends the limitations of physical examination and the need for adjunctive forms of assessment to confirm diagnosis	CbD, mini-CEX	1
Recognises when the offer/use of a chaperone is appropriate or required	CbD, mini-CEX	1
Skills		
Performs a valid, targeted and time efficient examination relevant to the presentation and risk factors	CbD, mini-CEX	1
Recognises the possibility of deliberate harm (both self harm and harm by others) in vulnerable patients and reports to appropriate agencies	CbD, mini-CEX	1,2
Actively elicits important clinical findings	CbD, mini-CEX	1
Performs relevant adjunctive examinations	CbD, mini-CEX	1
Behaviours		
Shows respect and behaves in accordance with Good Medical Practice	CbD, mini-CEX, MSF	1,4
Considers social, cultural and religious boundaries to clinical examination, appropriately communicates and makes alternative arrangements where necessary	CbD, mini-CEX, MSF	1,4

1.3 Therapeutics and Safe Prescribing

To prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice including non – medication based therapeutic and preventative indications

Knowledge	Assessment Methods	GMP
States indications, contraindications, side effects, drug interactions and dosage of commonly used drugs	CbD, mini-CEX	1
Recalls range of adverse drug reactions to commonly used drugs, including complementary medicines	CbD, mini-CEX	1
Recalls drugs requiring therapeutic drug monitoring and interprets results	CbD, mini-CEX	1
Outlines tools to promote patient safety and prescribing, including electronic clinical record systems and other IT systems	CbD, mini-CEX	1,2
Defines the effects of age, body size, organ dysfunction and concurrent illness on drug distribution and metabolism relevant to the trainees practice	CbD, mini-CEX	1,2
Understands the roles of regulatory agencies involved in drug use,	CbD, mini-CEX	1,2

monitoring and licensing (e.g. National Institute for Clinical Excellence (NICE), Medical Healthcare Products Regulatory Agency (MHRA) and hospital formulary committees		
Understands the importance of non-medication based therapeutic interventions including the legitimate role of placebos	CbD, mini-CEX	1,2
Recalls in detail the propensity of drugs to elicit IgE-mediated and non-IgE mediated systemic anaphylactic reactions in certain individuals and the capacity of structurally related drugs to cross-react	CbD, mini-CEX	
Recalls a rational basis for the use of alternative drugs in drug allergic patients	CbD, mini-CEX	
Is familiar with the indications, products, modes of delivery and dosage regimens for allergen immunotherapy	CbD, mini-CEX	
Skills		
Reviews the continuing need for, effect of and adverse effects of long term medications relevant to the trainees clinical practice	CbD, mini-CEX	1, 2
Anticipates and avoid defined drug interactions, including complementary medicines	CbD, mini-CEX	1
Advises patients (and carers) about important interactions and adverse drug effects	CbD, mini-CEX	1,3
Prescribes appropriately in pregnancy, and during breast feeding	CbD, mini-CEX	1
Makes appropriate dose adjustments following therapeutic drug monitoring, or physiological change (e.g. deteriorating renal function)	CbD, mini-CEX	1
Uses IT prescribing tools where available to improve safety	CbD, mini-CEX	1,2
Employs validated methods to improve patient concordance with prescribed medication	mini-CEX	1,3
Provides comprehensible explanations to the patient, and carers when relevant, for the use of medicines and understands the principles of concordance in ensuring that drug regimes are followed	CbD, mini-CEX	1,3
Ensures safe systems for monitoring, review and authorisation where involved in “repeat prescribing”	CbD, mini-CEX	1
Recognises the importance of resources when prescribing, including the role of a Drug Formulary and electronic prescribing systems	CbD, mini-CEX	1
Is able to provide advice on, and perform relevant skin prick and other challenge tests for drug allergy and interpret the results	CbD, mini-CEX, DOPS	1,2
Behaviours		
Minimises the number of medications taken by a patient to a level compatible with best care	CbD, mini-CEX	1
Appreciates the role of non-medical prescribers	CbD, mini-CEX	1,3
Remains open to advice from other health professionals on medication issues	CbD, mini-CEX	1,3
Ensures prescribing information is shared promptly and accurately between a patient’s health providers, including between primary and secondary care	CbD	1,3
Participates in adverse drug event reporting mechanisms	CbD	1
Takes particular care to disseminate information about drug allergies appropriately and instructs patients to do the same	CbD, mini-CEX	1
Remains up to date with therapeutic alerts, and responds appropriately	CbD	1

1.4 Time Management and Decision Making

Learn how to prioritise and organise clinical and clerical duties in order to optimise patient care and make appropriate clinical and clerical decisions in order to optimise the effectiveness of the clinical team resource.

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

1.5 Decision Making and Clinical Reasoning

Acquire the ability to formulate a diagnostic and therapeutic plan for a patient according to the clinical information available.

Acquire the ability to prioritise the diagnostic and therapeutic plan.

Acquire the ability to communicate a diagnostic and therapeutic plan appropriately.

Knowledge	Assessment Methods	GMP
Defines the steps of diagnostic reasoning	CbD, mini-CEX	1
Conceptualises clinical problems in a medical and social context	CbD, mini-CEX	1
Understands the psychological components of disease and illness presentation	CbD, mini-CEX	1
Recognises how to use expert advice, clinical guidelines and algorithms	CbD, mini-CEX	1
Recognises and appropriately responds to sources of information accessed by patients	CbD, mini-CEX	1
Defines the concepts of disease natural history and assessment of risk	CbD, mini-CEX	1,2
Outlines methods and associated problems of quantifying risk e.g. cohort studies	CbD, mini-CEX	1
Outlines the concepts and drawbacks of quantitative assessment of risk or benefit e.g. numbers needed to treat	CbD	1
Describes commonly used statistical methodology	CbD	1
Knows how relative and absolute risks are derived and the meaning of the terms predictive value, sensitivity and specificity in relation to diagnostic tests	mini-CEX	1
Skills		
Interprets clinical features, their reliability and relevance to clinical scenarios including recognition of the breadth of presentation of common disorders	CbD, mini-CEX	1
Incorporates an understanding of the psychological and social elements of clinical scenarios into decision making through a robust process of clinical reasoning	CbD, mini-CEX	1
Interprets history and clinical signs	CbD, mini-CEX	1
Generates hypothesis within context of clinical likelihood	CbD, mini-CEX	1
Tests, refines and verifies hypotheses	CbD, mini-CEX	1
Develops problem list and action plan	CbD, mini-CEX	1
Comprehends the need to determine the best value and most effective treatment both for the individual patient and for a patient cohort	CbD, mini-CEX	1
Recognises critical illness and respond with due urgency	CbD, mini-CEX	1
Generates plausible hypotheses following patient assessment	CbD, mini-CEX	1
Constructs a concise and applicable problem list using available information	CbD, mini-CEX	1
Constructs an appropriate management plan in conjunction with the patient, carers and other members of the clinical team and communicate this effectively to the patient, parents and carers where relevant	CbD, mini-CEX	1,3,4
Applies the relevance of an estimated risk of a future event to an individual patient	CbD, mini-CEX	1

Uses risk calculators appropriately	CbD, mini-CEX	1
Considers the risks and benefits of screening investigations	CbD, mini-CEX	1
Applies quantitative data to assess the risks and benefits of therapeutic intervention in an individual patients	CbD, mini-CEX	1
Searches and comprehends the medical literature to guide reasoning	CbD, mini-CEX	1
Behaviours		
Recognises the difficulties in predicting occurrence of future events	CbD, mini-CEX	1
Shows willingness to discuss intelligibly with a patient the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic intervention	CbD, mini-CEX	3
Shows willingness to adapt and adjust approaches according to the beliefs and preferences of the patient and/or carers	CbD, mini-CEX	3
Shows willingness to facilitate patient choice	CbD, mini-CEX	3
Shows willingness to search for evidence to support clinical decision making	CbD, mini-CEX	1,4
Demonstrates ability to identify one's own biases and inconsistencies in clinical reasoning	CbD, mini-CEX	1,3

1.6 The Patient as Central Focus of Care

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

diversity and patient-centred	MSF, PS

1.7 Prioritisation of Patient Safety in Clinical Practice

To understand that patient safety depends on:

- **The effective and efficient organisation of care**
- **Health care staff working well together**
- **Safe systems not just individual competency and safe practice**

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

To understand that all staff should be made aware of risks and work together to minimise risk

To act always to promote patient safety

Knowledge	Assessment Methods	GMP
Outline the features of a safe working environment	CbD, mini-CEX	1
Outlines the hazards of medical equipment in common use	CbD	1
Recalls unwanted effects and contraindications of medications prescribed	CbD, mini-CEX	1
Recalls principles of risk assessment and management	CbD	1
Recalls the components of safe working practice in personal, clinical and organisational settings	ACAT, CbD	1
Outlines human factors theory and understands its impact on safety	CbD	1
Knows about root cause analysis	CbD	1
Knows about significant event analysis	CbD	1
Outlines local procedures and protocols for optimal practice e.g. GI bleed protocol, safe prescribing	CbD, mini-CEX	1
Understands the investigation of significant events, serious untoward incidents and near misses	CbD, mini-CEX	1
Is very familiar with the principles of management of systemic anaphylaxis and the governance required to deal with the possibility of anaphylaxis in the allergen challenge clinic	CbD, mini-CEX	1
Skills		
Recognises limits of own professional competence and practises only within these	ACAT, CbD, mini-CEX	1
Recognises when a patient is not responding to treatment, reassesses the situation and encourages others to do so	CbD, mini-CEX	1
Ensures the correct and safe use of medical equipment, ensuring faulty equipment is reported appropriately	CbD, mini-CEX	1
Improves patients' and colleagues' understanding of the side effects and contraindications of therapeutic intervention	CbD, mini-CEX	1,3
Sensitively counsels a colleague following a significant untoward event, or near incident, to encourage improvement in practice of individual and unit	CbD	3
Recognises and respond to the manifestations of a patient's deterioration or lack of improvement (symptoms, signs, observations, and laboratory results) and supports other members of the team to act similarly	CbD, mini-CEX, MSF	1
Behaviours		
Maintains a high level of safety awareness and consciousness at all times	CbD, mini-CEX	2

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

1.8 Team Working and Patient Safety

To work well in a variety of different teams and team settings and to contribute to discussion on the team's role in patient safety

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

Knowledge	Assessment Methods	GMP
Outlines the components of effective collaboration and team working	CbD	1
Describes the roles and responsibilities of members of the healthcare team	CbD	1
Outlines factors adversely affecting a doctor's and team performance and methods to rectify these	CbD	1
Skills		
Practises with attention to the important steps of providing good continuity of care	CbD, mini-CEX	1,3,4
Keeps accurate and attributable notes including appropriate use of electronic clinical record systems	CbD, mini-CEX	1,3
Demonstrates leadership and management in education and training of junior colleagues and other members of the healthcare team	CbD, mini-CEX	1,2,3
Recognises deteriorating performance of colleagues (e.g. stress, fatigue)	CbD, mini-CEX	1,2,3
Provides high quality care	CbD, mini-CEX	1,2,3
Leads and participates in interdisciplinary team meetings	CbD, mini-CEX	3
Provides appropriate supervision to less experienced colleagues	CbD, MSF	3
Behaviours		
Encourages an open environment to foster and explore concerns and issues about the functioning and safety of team working	CbD, MSF	3
Recognises limits of own professional competence and practises within these	CbD, MSF	3
Recognises and respect the request for a second opinion	CbD, MSF	3
Recognises the importance of induction for new members of a team	CbD, MSF	3
Recognises the importance of prompt and accurate information sharing with Primary Care team following hospital discharge	CbD, mini-CEX, MSF	3

1.9 Principles of Quality and Safety Improvement

To recognise the desirability of monitoring performance, learning from mistakes and adopting a no blame culture in order to ensure high standards of care and optimise patient safety		
Knowledge	**Assessment Methods**	**GMP**
Understands the elements of clinical governance	CbD, MSF	1
Defines local and national significant event reporting systems relevant to allergy	CbD, mini-CEX	1
Outlines local health and safety protocols (fire, manual handling etc)	CbD	1
Understands risks associated with training in allergy including biohazards and mechanisms to reduce risk	CbD	1
Outlines the use of patient early warning systems to detect clinical deterioration	CbD, mini-CEX	1
Keeps abreast of national patient safety initiatives including National Patient Safety Agency , NCEPOD reports, NICE guidelines etc	CbD, mini-CEX	1
Skills		
Adopts strategies to reduce risk	CbD	1,2
Recognises that governance safeguards high standards of care and facilitates the development of improved clinical services	CbD	1,2
Recognises importance of evidence-based practice in relation to clinical effectiveness	CbD	1
Reflects regularly on personal standards of medical practice in accordance with GMC guidance on licensing and revalidation	AA	1,2,3, 4
Behaviours		
Shows willingness to participate in safety improvement strategies such as critical incident reporting	CbD, MSF	3
Develops reflection in order to achieve insight into own professional practice	CbD, MSF	3
Demonstrates personal commitment to improve self performance in the light of feedback and assessment	CbD, MSF	3
Contributes to quality improvement processes such as: • Audit of personal and departmental/directorate/practice performance • Errors / discrepancy meetings • Critical incident and near miss reporting • Unit morbidity and mortality meetings • Local and national databases	CbD, MSF	3
Maintains a portfolio of information and evidence drawn from personal medical practice	CbD, MSF	3
Engages with an open no blame culture	CbD, MSF	3
Responds positively to outcomes of audit and quality improvement	CbD, MSF	1,3
Co-operates with changes necessary to improve service quality and safety	CbD, MSF	1,2

1.10 Infection Control

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

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

1.11 Managing Long-Term Conditions and Promoting Patient Self-Care

To learn how to pursue a holistic and long term approach to the planning and implementation of patient care, in particular to identify and facilitate the role of the patient, the family and other carers in the long term management of severe allergic diseases

Knowledge	Assessment Methods	GMP
Describes the natural history of allergic diseases that run a chronic course	CbD, mini-CEX	1
Defines the role of services and the multi-disciplinary teams to facilitate long-term care of patients with allergic diseases	CbD, mini-CEX	1
Outlines the concept of quality of life and how this can be measured whilst understanding the limitations of such measures for individual patients	CbD, mini-CEX	1
Outlines the concept of patient self-care and the role of the expert patient	CbD, mini-CEX	1
Works with an appropriate knowledge of guidance documents on supporting people with long term conditions to self care	CbD, mini-CEX	1
Knows, understands and is able to compare and contrast the medical and social models of disability	CbD, mini-CEX	1
Knows about and practises within the key provisions of disability discrimination and other contemporary legislation	CbD, mini-CEX	1
Understands the relationship between local health, educational and social service provision including the voluntary sector and how they can be accessed	CbD, mini-CEX	1
Is familiar with the range of agencies that can provide care and support in and out of hospital and how they can be accessed	CbD, mini-CEX	1
Skills		
Develops and agrees a management plan with the patient (and carers), ensuring awareness of alternatives to maximise self-care within care pathways where relevant	CbD, mini-CEX	1,3
Assesses the patient's ability to access various services in the health and social system and offer appropriate assistance	CbD, mini-CEX	1,3
Advocates and facilitates appropriate self care	CbD, mini-CEX	1,3
Develops and sustains supportive relationships with patients with whom care will be prolonged and potentially life long	CbD, mini-CEX	1,4
Provides relevant evidence-based information and where appropriate effective patient education, with support of the multi-disciplinary team	CbD, mini-CEX	1,3,4
Provides relevant and evidence based information in an appropriate medium to enable sufficient choice, when possible	CbD, PS	1,3
Behaviours		
Shows willingness and support for patient in his/her own advocacy, within the constraints of available resources and taking into account the best interests of the wider community	CbD, mini-CEX	1,3
Promotes and encourages involvement of patients in appropriate support networks, both to receive support and to give support to others	CbD, mini-CEX	3,4
Recognises the potential impact of long term conditions on the patient, family and friends	CbD	1
Ensures equipment and devices relevant to the patient's care are discussed	CbD, mini-CEX	1,2,3,4

Puts patients in touch with the relevant agency including the voluntary sector from where they can procure the items as appropriate	CbD, mini-CEX	1,3
Provides the relevant tools and devices when possible	CbD, mini-CEX	1,2
Shows willingness to facilitate access to the appropriate training and skills in order to develop the patient's confidence and competence to self care and adapt appropriately as needs change with time	CbD, mini-CEX, PS	1,3,4
Shows willingness to maintain a close working relationship with other members of the multi-disciplinary team, primary and community care	CbD, mini-CEX, MSF	3
Shows willingness to engage with expert patients and representatives of charities or networks that focus on diseases and comprehends their role in supporting patients and their families/carers	CbD, mini-CEX, MSF, PS	1,3
Recognises and respect the role of family, friends and carers in the management of the patient with a long term condition	CbD, mini-CEX, PS	1,3
Puts patients in touch with the relevant agencies including the voluntary sector from where they can procure the items as appropriate	CbD, mini-CEX, MSF, PS	1,3

1.12 Relationships with Patients and Communication within a Consultation

To recognise the need, and develop the abilities, to communicate effectively and sensitively with patients, relatives and carers

Knowledge	Assessment Methods	GMP
Demonstrates how to structure a consultation appropriately	CbD, mini-CEX, PS	1
States the importance of the patient's background, culture, education and preconceptions (beliefs, ideas, concerns, expectations) to the process	CbD, mini-CEX, PS	1
Skills		
Establishes a rapport with the patient and any relevant others Utilises open and closed questioning appropriately	CbD, mini-CEX, PS	1,3
Listens actively and questions sensitively to guide the patient and to clarify information	mini-CEX, PS	1,3
Identifies and manages communication barriers, tailoring language to the individual patient and others and using interpreters when indicated	CbD, mini-CEX, PS	1,3
Delivers information compassionately, being alert to and managing personal and patients emotional responses	CbD, mini-CEX	1,3,4
Uses, and refers patients to, appropriate written and other evidence based information sources	CbD, mini-CEX	1,3
Checks the patient's/carer's understanding, ensuring that all their concerns/questions have been covered	CbD, mini-CEX	1,3
Indicates when the consultation nearing its end and conclude with a summary and appropriate action plan; ask the patient to summarise back to check his/her understanding	CbD, mini-CEX	1,3
Makes accurate contemporaneous records of the discussion	CbD, mini-CEX	1,3
Manages follow-up effectively and safely utilising a variety of methods	CbD, mini-CEX	1
Ensures appropriate referral and communications with other healthcare professional resulting from the consultation are made accurately and in a timely manner	CbD, mini-CEX	1
Behaviours		

Approaches situations with courtesy, empathy, compassion and professionalism, especially by appropriate body language and endeavouring to ensure an appropriate physical environment, acting as an equal not a superior	CbD, mini-CEX, MSF, PS	1,3,4
Ensures appropriate personal language and behaviour	CbD, mini-CEX, MSF, PS	1.3
Ensures that the approach is inclusive and patient centred and respects the diversity of values in patients, carers and colleagues.	CbD, mini-CEX, MSF, PS	13
Is willing to provide patients with a second opinion	CbD, mini-CEX, MSF, PS	1,3
Uses different methods of ethical reasoning to come to a balanced decision where complex and conflicting issues are involved	CbD, mini-CEX, MSF	1,3
Is confident and positive in personal values	CbD, mini-CEX	1,3

1.13 Breaking Bad News

To recognise the fundamental importance of breaking bad news

To use strategies for skilled delivery of bad news according to the needs of individual patients and their relatives and/or carers

Knowledge	Assessment Methods	GMP
Understands that how bad news is delivered irretrievably affects the subsequent relationship with the patient	CbD, mini-CEX, MSF, PS	1
Appreciates that every patient may desire different levels of explanation and have different responses to bad news	CbD, mini-CEX, PS	1,4
Knows that although bad news is confidential the patient may wish to be accompanied	CbD, mini-CEX, PS	1
Appreciates that once the news is given, patients are unlikely to take anything subsequent in, so an early further appointment should be made	CbD, mini-CEX, PS	
Appreciates that breaking bad news can be extremely stressful for the doctor or professional involved	CbD, mini-CEX	1,3
Is aware that the interview during which bad news is delivered may be an educational opportunity	CbD, mini-CEX	1
States and understands the importance of adequate preparation for breaking of bad news	CbD, mini-CEX	1,3
Knows that “bad news” may be expected or unexpected and cannot always be predicted	CbD, mini-CEX	1
Knows that sensitive communication of bad news is an essential part of professional practice	CbD, mini-CEX	1
Knows that “bad news” has different connotations depending on the context, individual, social and cultural circumstances	CbD, mini-CEX, PS	1
Understands that a post mortem examination may be required and what this involves	CbD, mini-CEX, PS	1
Is familiar with the local organ retrieval process	CbD, mini-CEX	1
Skills		
Demonstrates to others good practice in breaking bad news	CbD, DOPS, MSF	1,3
Involves patients and carers in decisions regarding their future management	CbD, DOPS, MSF	1,3,4

Comprehends the impact of the bad news on the patient, carer, supporters, staff members and self	CbD, DOPS, MSF	1,3,4
Encourages questioning and ensures comprehension	CbD, DOPS, MSF	1,3
Responds to verbal and visual cues from patients and relatives	CbD, DOPS, MSF	1,3
Acts with empathy, honesty and sensitivity avoiding undue optimism or pessimism	CbD, DOPS, MSF	1,3
In preparing to break bad news: • Sets aside sufficient uninterrupted time • Chooses an appropriate private environment and ensures that there will be no unplanned disturbances • Has sufficient information regarding prognosis and treatment • Ensures the individual has appropriate support if desired • Structures the interview • Is honest, factual, realistic and empathic	CbD, DOPS, MSF	1,3
Is aware of relevant guidance documents	CbD	1
Structures the interview: • Sets the scene • Establishes understanding • Discusses diagnosis, implications, treatment, prognosis and subsequent care	CbD	1,3
Behaviours		
Take leadership in breaking bad news	CbD, DOPS, MSF	1
Respects the different ways people react to bad news	CbD, DOPS, MSF	1
Ensures appropriate recognition and management of the impact of breaking bad news on the doctor	CbD, DOPS, MSF	1

1.14 Complaints and Medical Error

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

Knowledge	Assessment Methods	GMP
Describes the local complaints procedure	CbD, MSF	1
Recognises factors likely to lead to complaints (poor communication, dishonesty, clinical errors, adverse clinical outcomes etc)	CbD, MSF	1
Outlines the principles of an effective apology	CbD, MSF	1
Identifies sources of help and support for patients and doctors when a complaint is made about self or a colleague	CbD, MSF	1
Skills		
Contributes to processes whereby complaints are reviewed and learned from	CbD, DOPS, MSF	1
Explains comprehensibly to the patient the events leading up to a medical error or serious untoward incident, and sources of support for patients and their relatives	CbD, DOPS, MSF	1,3
Recognises when something has gone wrong and identifies appropriate staff with whom to communicate this	CbD, DOPS, MSF	1

Delivers an appropriate apology and explanation	CbD, DOPS, MSF	1,3,4
Distinguishes between system and individual errors (personal and organisational)	CbD, DOPS, MSF	1
Shows ability to learn from previous errors	CbD, DOPS, MSF	1
Behaviours		
Takes leadership over complaint issues	CbD, DOPS, MSF	1
Adopts behaviour likely to prevent causes for complaints	CbD, DOPS, MSF	1,3
Deals appropriately with concerned or dissatisfied patients or relatives	CbD, DOPS, MSF	1
Acts with honesty and sensitivity in a non-confrontational manner	CbD, DOPS, MSF	1
Acts with honesty and sensitivity in a non-confrontational manner	CbD, DOPS, MSF	1
Recognises the impact of complaints and medical error on staff, patients and the National Health Service	CbD, DOPS, MSF	1
Contributes to a fair and transparent culture around complaints and errors	CbD, DOPS, MSF	1
Recognises the rights of patients, family members and carers to make a complaint	CbD, DOPS, MSF	1,4
Recognises the impact of a complaint upon self and seeks appropriate help and support	CbD, DOPS, MSF	1,4

1.15 Communication with colleagues and cooperation

To recognise and accept the responsibilities and role of the doctor in relation to other healthcare professionals

To communicate succinctly and effectively with other professionals as appropriate

Knowledge	Assessment Methods	GMP
Understands the section in "Good Medical Practice" on Working with Colleagues, in particular:	CbD, MSF	1
States the roles played by all members of a multi-disciplinary team	CbD, MSF	1
States the features of good team dynamics	CbD, MSF	1
States the principles of effective inter-professional collaboration to optimise patient, or population, care	CbD, MSF	1
Understands the principles of confidentiality that provide boundaries to communication	CbD, MSF	1
Acts with appropriate knowledge of professional and ethical conduct in challenging situations	Cb	1
Knows techniques to manage anger and aggression in self and colleagues	CbD	1
Knows personal responsibilities when managing physical and/or mental ill health in self and colleagues	CbD	1
Skills		
Communicates accurately, clearly, promptly and comprehensively with relevant colleagues by means appropriate to the urgency of a situation (telephone, email, letter etc), especially where responsibility for a patient's care is transferred	CbD, mini-CEX	1,3
Utilises the expertise of the whole multi-disciplinary team as appropriate, ensuring when delegating responsibility that appropriate supervision is	CbD, mini-CEX, MSF	1,3

maintained		
Communicates effectively with administrative bodies and support organisations	CbD, mini-CEX, MSF	1,3
Employs behavioural management skills with colleagues to prevent and resolve conflict and enhance collaboration	CbD, mini-CEX, MSF	1,3
Behaviours		
Shows awareness of the importance of, and takes part in multi-disciplinary teamwork, including adoption of a leadership role when appropriate but also recognising where others are better equipped to lead	CbD, mini-CEX, MSF	3
Fosters a supportive and respectful environment where there is open and transparent communication between all team members	CbD, mini-CEX, MSF	1,3
Ensures appropriate confidentiality is maintained during communication with any member of the team	CbD, mini-CEX, MSF	1,3
Recognises the need for a healthy work/life balance for the entire team, but takes any personal leave only after giving appropriate notice to ensure that cover is in place	CbD, mini-CEX, MSF	1
Accepts additional duties in situations of unavoidable and unpredictable absence of colleagues ensuring that the best interests of the patient are paramount	CbD, MSF	1

1.16 Health Promotion and Public Health

To work with individuals and communities to reduce ill health, remove inequalities in healthcare provision and improve the general health of a community.

Knowledge	Assessment Methods	GMP
Understands the factors which influence the incidence and prevalence of common conditions	CbD, mini-CEX	1
Understands the factors which influence health and illness – psychological, biological, social, cultural and economic especially poverty and unemployment	CbD, mini-CEX	1
Understands the influence of lifestyle on health and the factors that influence an individual to change their lifestyle	CbD, mini-CEX	1
Understands the influence of culture and beliefs on patients perceptions of health	CbD, mini-CEX	1
Understands the purpose of screening programmes and knows in outline the common programmes available within the UK	CbD, mini-CEX	1
Understands the positive and negative effects of screening on the individual	CbD, mini-CEX	1
Understands the possible positive and negative implications of health promotion activities (e.g. immunisation)	CbD, mini-CEX	1
Understands the relationship between the health of an individual and that of a community and vice versa	CbD, mini-CEX	1
Knows key local concerns about health of communities such as smoking and obesity and the potential determinants	CbD, mini-CEX	1
Understands the role of other agencies and factors including the impact of globalisation in increasing disease and in protecting and promoting health	CbD, mini-CEX	1
Demonstrates knowledge of the determinants of health worldwide and strategies to influence policy relating to health issues including the impact	CbD, mini-CEX	1

of the developed world strategies on the third world		
Outlines the major causes of global morbidity and mortality and effective, affordable interventions to reduce these	CbD, mini-CEX	1
Recalls the effect of addictive and self harming behaviours, especially substance misuse and gambling, on personal and community health and poverty	CbD, mini-CEX	1
Skills		
Identifies opportunities to prevent ill health and disease in patients	CbD, mini-CEX, PS	1,2
Identifies opportunities to promote changes in lifestyle and other actions which will positively improve health and/or disease outcomes.	CbD, mini-CEX	1,2
Identifies the interaction between mental, physical and social wellbeing in relation to health.	CbD, mini-CEX	1
Counsels patients appropriately on the benefits and risks of screening and health promotion activities	CbD, mini-CEX, PS	1,3
Identifies patient's ideas, concerns and health beliefs regarding screening and health promotions programmes and is capable of responding appropriately	mini-CEX, CbD	1,3
Works collaboratively with other agencies to improve the health of communities	CbD, mini-CEX	1
Behaviours		
Engages in effective team-working around the improvement of health	CbD, MSF	1,3
Encourages where appropriate screening to facilitate early intervention	CbD	1
Seeks out and utilises opportunities for health promotion and disease prevention	CbD	1

1.17 Environmental Protection and Emergency Planning

To understand the relationship of the physical environment to health

To be able to identify situations where environmental exposure may be the cause of ill health and to relate to emergency planning arrangements both in relation to environmental matters and other issues in clinical practice

Knowledge	Assessment Methods	GMP
Understands in outline the mechanisms by which environmental chemicals have an impact on human health	CbD	1
Understands in outline the mechanisms by which adverse chemical exposure can be mitigated (decontamination, specific antidotes)	CbD, mini-CEX	1
Knows the potential sources of information and guidance to manage a case of chemical etc exposure. (including local, regional and national sources)	CbD	1
Understands the principles of emergency planning	CbD	1
Knows in outline the emergency plan for health care organisation they currently work for and specifically knows their duties and responsibilities within the plan	CbD	1
Skills		
Recognises the potential for chemical or other hazardous environmental exposure in relation to an individual patient.	CbD	1,2

Manages patients in an appropriate manner according to guidance	CbD, mini-CEX	1,2
Appropriately performs duties and tasks when required in accordance with Trust emergency plans	CbD	1,3
Behaviours		
Actively engages in emergency planning arrangements including exercises in accordance with Trust plans	CbD, MSF	2,3
Openly considers the possibility of chemical or environmental exposure in clinical work	CbD, MSF	1,2

1.18 Principles of Medical Ethics and Confidentiality

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

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

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

1.19 Obtaining of Consent

To understand the necessity of obtaining valid consent from the patient, and when and how to obtain it

Knowledge	Assessment Methods	GMP
Outlines the guidance given by the GMC on consent, in particular:	CbD, MSF	1
Understands that consent is a process that may culminate in, but is not limited to, the completion of a consent form	CbD, MSF	1
Understands the particular importance of considering the patient's level of understanding and mental state (and also that of the parents, relatives or carers when appropriate) and how this may impair their capacity for informed consent	CbD, MSF	1
Understands the social and cultural issues that might affect consent	CbD, MSF	1
Skills		
Presents all information to patients (and carers) in a format they understand, checking understanding and allowing time for reflection on the decision to give consent	CbD, mini-CEX, PS	1,3
Provides a balanced view of all care options	CbD, mini-CEX, PS	1,3,4
Behaviours		
Respects a patient's rights of autonomy even in situations where their decision might put them at risk of harm	CbD, mini-CEX, PS	1
Keeps within the scope of authority given by a competent patient	CbD, mini-CEX, PS	1
Provides all information relevant to proposed care or treatment in a competent patient	CbD, mini-CEX	1,3,4
Seeks consent for procedures within own capabilities	CbD, mini-CEX	1,3
Shows willingness to seek advance directives		
Shows willingness to obtain a second opinion, senior opinion, and legal advice in difficult situations of consent or capacity	CbD, mini-CEX, MSF	1,3
Informs patients and seeks alternative care where personal, moral or religious belief prevents a usual professional action	CbD, mini-CEX, PS	1,3,4

1.20 Legal Framework for Practice

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

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

1.21 Ethical Research

To be equipped to ensure that research is undertaken using relevant ethical guidelines.

Knowledge	Assessment Methods	GMP
Outlines the GMC guidance on good practice in research	CbD	1
Knows about local and national research guidelines	CbD	1
Knows the principles of research governance Outlines the differences between audit and research	AA, CbD, mini-CEX	1
Describes how clinical guidelines are produced	CbD	1
Demonstrates a knowledge of research principles	CbD, mini-CEX	1
Outlines the principles of formulating a research question and designing a project	CbD, mini-CEX	1
Comprehends the principal qualitative, quantitative, bio-statistical and epidemiological research methods	CbD	1
Outlines sources of research funding	CbD	1
Skills		
Uses critical appraisal skills and applies these when reading literature	CbD	1
Demonstrates the ability to write a scientific paper	CbD	1
Applies for appropriate ethical research approval	CbD	1
Demonstrates the use of literature databases	CbD	1
Demonstrates good verbal and written presentations skills	CbD, DOPS	1
Understands the difference between population-based assessment and unit-based studies and be able to evaluate outcomes for epidemiological work	CbD	1
Behaviour		
Follows guidelines on ethical conduct in research and consent for research	CbD	1
Shows willingness to encourage and take part in research	CbD	1

1.22 Evidence and Guidelines

To learn to make the optimal use of current best evidence in making decisions about the care of patients.

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

Knowledge	Assessment Methods	GMP
Outlines the principles of critical appraisal	CbD	1
Knows the advantages and disadvantages of different study methodologies (quantitative and qualitative) for different types of questions	CbD	1
Outlines levels of evidence and quality of evidence	CbD	1
Knows how to apply statistics in scientific medical practice	CbD	1
Understands the use and differences between the basic measures of risk	CbD	1

and uncertainty		
Describes the role and limitations of evidence in the development of clinical guidelines and protocols	CbD	1
Understands the processes that result in nationally applicable guidelines (eg NICE and SIGN)	CbD	1
Skills		
Searches medical literature with relevant tools including PubMed, Medline, Cochrane reviews and the internet	CbD	1
Appraises retrieved evidence to address a clinical question	CbD	1
Applies conclusions from critical appraisal into clinical care	CbD	1
Contributes to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine	CbD	1
Behaviours		
Aims for best clinical practice (clinical effectiveness) at all times, as informed by evidence based medicine	CbD, mini-CEX	1
Recognises knowledge gaps and keeps a logbook of clinical questions	CbD, mini-CEX	1
Keeps up to date with national reviews, key new relevant research, and guidelines of practice (e.g. NICE and SIGN)	CbD	1
Recognises the common need to practise outside clinical guidelines	CbD, mini-CEX	1
Communicates risk information, and risk-benefit trade-offs in ways appropriate for individual patients	CbD, mini-CEX	
Encourage discussion amongst colleagues on evidence-based practice	CbD, mini-CEX, MSF	1

1.23 Audit

To learn how to audit clinical practice and to apply the findings appropriately to complete the audit cycle.		
Knowledge	**Assessment Methods**	**GMP**
Understands the different methods of obtaining data for audit including patient feedback questionnaires, hospital sources and national reference data	AA, CbD	1
Understands the role of audit (improving patient care and services, risk management etc)	AA, CbD	1
Understands the steps involved in completing the audit cycle	AA, CbD	1
Describes the working and uses of national and local databases used for audit such as specialty data collection systems, cancer registries etc. and for reporting and learning from clinical incidents and near misses in the UK	AA, CbD	1
Skills		
Designs, implements and completes audit cycles	AA, CbD	1,2
Contributes to local and national audit projects as appropriate (e.g. NCEPOD, SASM)	AA, CbD	1,2
Supports audit by junior medical trainees and within the multi-disciplinary team	AA, CbD	1,2
Behaviours		

Recognises the need for audit in clinical practice to promote standard setting and quality assurance	AA, CbD	1,2

1.24 Teaching and Training

To teach a variety of different audiences in a variety of different ways.

To assess the quality of the teaching.

To plan and deliver a training programme with appropriate assessments.

To supervise, teach and mentor learners (trainees) in a work setting.

Knowledge	Assessment Methods	GMP
Describes relevant educational theories and principles	CbD	1
Outlines adult learning principles relevant to medical education:		
Demonstrates knowledge of relevant literature relevant to developments and challenges in medical education and other sectors	CbD	1
Outlines the structure of an effective appraisal interview	CbD	1
Defines the roles to the various bodies involved in medical education and other sectors	CbD	1
Recalls learning methods and effective learning objectives and outcomes		
Describes the differences between learning objectives and outcomes		
Differentiates between appraisal and assessment and performance review and aware of the need for both	CbD	1
Differentiates between formative and summative assessment and define their role in medical education		
Outlines the structure of the effective appraisal review		
Outlines the role of workplace-based assessments, the assessment tools in use, their relationship to course learning outcomes, the factors that influence their selection and the need for monitoring evaluation	CbD	1
Outlines the appropriate local course of action to assist a trainee experiencing difficulty in making progress within their training programme	CbD	1
Skills		
Critically evaluates relevant educational literature	CbD	1
Varies teaching formats and stimuli, appropriate to the situation and the audience		
Provides effective and appropriate feedback after teaching, and promotes learner reflection	CbD, MSF, TO	1
Conducts developmental conversations as appropriate eg: appraisal, supervision, mentoring	CbD, MSF	1
Demonstrates effective lecture, presentation, small group and bed side teaching sessions	CbD, MSF	1,3
Provides appropriate career support, or refers trainee to an alternative effective source of career information	CbD, MSF, TO	1,3
Participates in strategies aimed at improving patient education e.g. talking at support group meetings	CbD, MSF	1
Leads departmental teaching programmes including journal clubs	CbD, TO	1
Recognises the trainee in difficulty and take appropriate action including where relevant referral to other services	CbD, TO	1

Is able to identify and plan learning activities in the workplace	CbD	1
Contributes to educational research or projects eg: through the development of research ideas of data/information gathering. Is able to manage personal time and resources effectively to the benefit of the educational faculty and the need of the learners	CbD, TO	1
Factors in safeguards to protect the patient when teaching and training is being conducted using patients	CbD	1
Behaviour		
Maintains the dignity and safety of patients at all times in discharging educational duties	CbD, MSF	1,4
Recognises the importance of the role of the physician as an educator within the multi-professional healthcare team and uses medical education to enhance the care of patients	CbD, MSF	1
Balances the needs of service delivery with education	CbD, MSF	1
Demonstrates willingness to teach trainees and other health and social workers in a variety of settings to maximise effective communication and practical skills and to improve patient care	CbD, MSF	1
Demonstrates consideration for learners including their emotional, physical and psychological well being with their development needs. Acts to endure equality of opportunity for students, trainees, staff and professional colleagues	CbD, MSF	1
Encourages discussions with colleagues in clinical settings to colleagues to share knowledge and understanding	CbD, MSF, TO	1,3
Maintains honesty and objectivity during appraisal and assessment	CbD, MSF	1
Shows willingness to participate in workplace-based assessments and demonstrates a clear understanding of their purpose	CbD, MSF	1
Shows willingness to take up formal training as a trainer and respond to feedback obtained after teaching sessions	CbD, MSF, TO	1,3
Demonstrates willingness to become involved in the wider medical education activities and fosters an enthusiasm for medical education activity in others	CbD, MSF, TO	1
Recognises the importance of personal development as a role model to guide trainees in aspects of good professional behaviour	CbD, MSF, TO	1
Demonstrates willingness to advance own educational capability through continuous learning	CbD, MSF	1
Acts to enhance and improve educational provision through evaluation of own practice	CbD, MSF	1
Contributes to educational policy and development at local or national levels	CbD, MSF	1

1.25 Personal Behaviour

To acquire and nurture behaviours that will enable the trainee to become a senior leader able to deal with complex situations and difficult behaviours and attitudes

To learn how to work increasingly effectively with many teams to put the quality and safety of patient care as a prime objective

To demonstrate the attributes of someone who is trusted to be able to manage complex human, legal and ethical problems

To strive to be someone who is trusted and known to act fairly in all situations

Knowledge	Assessment Methods	GMP
Recalls and build upon the competences defined in the Foundation Programme Curriculum	CbD, mini-CEX	1,2,3,4
Outlines the main methods of ethical reasoning: casuistry, ontology and consequential	CbD, mini-CEX	1,2,3,4
Is familiar with the overall approach of value based practice and how this relates to ethics, law and decision-making	CbD, mini-CEX	1,2,3,4
Defines the concept of modern medical professionalism	CbD	1
Outlines the relevance of professional bodies (Royal Colleges, NHSMEE , GMC, Postgraduate Dean, BMA, specialist societies, medical defence societies etc)	CbD	1
Skills		
Practises with professionalism including: • Integrity • Compassion • Altruism • A view to continuous improvement • Aspiration to excellence • Respect of cultural and ethnic diversity • Regard to the principles of equity	CbD, mini-CEX, MSF, PS	1,2,3,4
Works in partnership with patients and members of the wider healthcare team	CbD, mini-CEX, MSF	3
Liaises with colleagues to plan and implement work rotas	MSF	3
Promotes awareness of the doctor's role in utilising healthcare resources optimally and within defined resource constraints	CbD, mini-CEX, MSF	1,3
Recognises and responds appropriately to unprofessional behaviour in others	CbD	1
Provides specialist support to hospital and community based services if appropriate and permitted	CbD, MSF	1
Handles enquiries from the press and other media effectively	CbD, DOPS	1,3
Behaviour		
Recognises personal beliefs and biases and understands their impact on the delivery of health services	CbD, mini-CEX, MSF	1
Appropriately refers patients where personal beliefs and biases could impact upon professional practice		
Uses all healthcare resources prudently and appropriately	CbD, mini-CEX	1,2

Improves clinical leadership and management skill	CbD, mini-CEX	1
Recognises situations when it is appropriate to involve professional and regulatory bodies	CbD, mini-CEX	1
Acts as a leader, mentor, educator and role model	CbD, mini-CEX, MSF	1
Reviews competences defined in the Foundation programme: • Deals with inappropriate patient and family behaviour • Respects the rights of children, elderly, people with physical, mental, learning or communication difficulties • Adopts an approach to eliminate discrimination against patients from diverse backgrounds including age, gender, race, culture, disability, spirituality and sexuality • Places needs of patients above own convenience • Behaves with honesty and probity • Acts with honesty and sensitivity in a non-confrontational manner	CbD, mini-CEX	1
Accepts mentoring as a positive contribution to promote personal professional development	CbD, mini-CEX, MSF	1
Participates in professional regulation and professional development		
Takes part in 360 degree feedback as part of appraisal	CbD, MSF	1,2,4
Promotes the right for equity of access to healthcare	CbD, mini-CEX	1
Demonstrates reliability and accessibility throughout the healthcare team	CbD, mini-CEX, MSF	1

1.26 Management and NHS Structure

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

Knowledge	Assessment Methods	GMP
Understands the guidance given on management and doctors by the GMC	CbD	1
Understands the local structure of NHS systems recognising the potential differences between the four countries of the UK	CbD	1
Recalls the range of agencies that can provide care and support in and out of hospital, and how they can be accessed	CbD	1
Understands the structure and function of healthcare systems as they apply to your specialty	CbD	1
Understands the consistent debates and changes that occur in the NHS including the political, social, technical, economic, organisational and professional aspects that can impact on provision of service	CbD	1
Understands the importance of local demographic, socio-economic and health data and the use to improve system performance	CbD	1
Understands the principles of: • Clinical coding • European Working Time Regulations including rest provisions • National Service Frameworks • Health regulatory agencies (e.g., NICE, Scottish Government) • NHS Structure and relationships • NHS finance and budgeting	CbD, mini-CEX	1

• Consultant contract and the contracting process • Resource allocation • The role of the Independent sector as providers of healthcare • Patient and public involvement processes and role		
Understands the principles of recruitment and appointment procedures	CbD	1
Skills		
Participates in managerial meetings	CbD	1
Works with stakeholders to create and sustain a patient-centred service	CbD, mini-CEX	1
Employs new technologies appropriately, including information technology	CbD, mini-CEX	1
Conducts an assessment of the community needs for specific health improvement measures	CbD, mini-CEX	1
Behaviour		
Recognises the importance of equitable allocation of healthcare resources and of commissioning	CbD	1,2
Recognises the role of doctors as active participants in healthcare systems	CbD, mini-CEX	1,2
Responds appropriately to health service objectives and targets and take part in the development of services	CbD, mini-CEX	1,2
Recognises the role of patients and carers as active participants in healthcare systems and service planning	CbD, mini-CEX, PS	1,2,3
Takes an active role in promoting the best use of healthcare resources	CbD	1
Shows willingness to improve leadership and managerial skills (e.g. management courses) and engage in leadership and management of the service	CbD, MSF	1

2. Medical Leadership and Management

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

2.1 Personal Qualities

To identify personal strengths, limitations and the impact of personal behaviour and to be able to change this in the light of feedback and reflection

Knowledge	Assessment Methods	GMP
Demonstrates different methods of obtaining feedback	CbD, MSF	1
Demonstrates awareness of personal values and principles and how these may differ from those of other individuals and groups		1,3,4
Realises the importance of best practice transparency and consistency		1
Skills		
Maintains and routinely practices critical self awareness, including being able to discuss strengths and weaknesses with supervisor and recognising external influences and changing behaviour accordingly		1
Uses assessment, appraisal, complaints and other feedback to discuss and develop an understanding of personal development needs		1.3
Identifies personal strengths and weaknesses	MSF	1,3
Organises and manages workload effectively and flexibly	CbD, MSF	1,3
Behaviours		
Recognising and showing respect for diversity and differences in others		1
Shows commitment to continuing professional development which involves seeking training and self development opportunities, learning from colleagues and accepting criticism		1,3
Demonstrate self management: organising and managing themselves while taking account of the needs and priorities of others.	CbD, PS	3

2.2 Working with Others

To adopt a team approach, acknowledging and appreciating efforts, contributions and compromises. To continue to recognise the common purpose of the team and respect the decisions of its members

Knowledge	Assessment Methods	GMP
Demonstrates a wide range of leadership styles and approaches and the applicability to different situations and people	MSF	1
Skills		
Enables individuals, groups and agencies to implement plans and make decisions		1,3
Assesses and appraises of more junior clinical colleagues or students		1,3

Builds and maintains relationships by listening, supporting others, gaining trust and showing understanding	MSF	3
Shows willingness to act as a leader, mentor, educator and role model		3
Behaviours		
Shows recognition of a team approach, respecting colleagues, including non-medical professionals		1,3

2.3 Managing Services

To support team members to develop their roles and responsibilities and continue to review performance of team members to ensure that planned service outcomes are met

Knowledge	Assessment Methods	GMP
Demonstrates knowledge of relevant legislation and HR policies		1
Shows knowledge of the duties, rights and responsibilities of an employer and co-worker		1
Demonstrates knowledge of individual performance review		1
Comprehends the roles, competences and capabilities of other professionals and support workers		1,3,4
States the role of audit (improving patient care and services, risk management etc).		1
States the steps involved in completing the audit cycle		1
Skills		
Continues to contribute towards staff development and training, including mentoring, supervision and appraisal		1,3
Is able to write a job description, including person specification and short listing criteria		1
Contributes to the development of an organisational response to emerging health policy.		1
Behaviours		
Commitment to good communication whilst also inspiring confidence and trust		1,3
Managing resources: knowing what resources are available and using influence to ensure that resources are used efficiently and safely		1
Managing people: providing direction, reviewing performance and motivating others		1,3
Managing performance: holding self and others accountable for service outcomes.		1,3

2.4 Improving Services

To ensure patient safety at all times, continue to encourage innovation and facilitate transformation		
Knowledge	**Assessment Methods**	**GMP**
Demonstrates knowledge of risk management issues and risk management tools		1,2
Demonstrates understanding of how healthcare governance influences patient care		1
Demonstrates knowledge of a variety of methodologies for developing creative solutions to improving services		1,2
Recalls principles of risk assessment and management		1,2
Identifies risk management guidance such as safe prescribing, sharps disposal, needle stick injury		1,2
Skills		
Reports clinical incidents	.	1,2
Assesses and manages risk to patients		2
Monitors the quality of equipment and safety of the environment relevant to the specialty		1,2
Ensures the correct and safe use of medical equipment, ensuring faulty equipment is reported appropriately		2
Questions existing practice in order to improve the services		1,2
Behaviours		
Seeks advice and or assistance whenever concerned about patient safety		1,2,3
Supports colleagues to voice new ideas and is open minded to new thoughts		1,3

2.5 Setting Direction

To be able to identify contexts for change and make decisions		
Knowledge	**Assessment Methods**	**GMP**
Demonstrates knowledge of the functions and responsibilities of national bodies, College and faculties, representatives, regulatory bodies		1
Demonstrates effective communication strategies within organisations		1
Skills		
The ability to discuss the local, national and UK health priorities and how they impact on the delivery of health care relevant to the specialty	.	1
Is able to run committee meetings and work collegiately and collaboratively with a wide range of people outside the immediate clinical setting		1,3
Behaviours		
Willingness to articulate strategic ideas and use effective influencing skills		1,3
Willingness to participate in decision making processes beyond the immediate clinical care setting		1,3

Applies knowledge and evidence to construct an evidence-based challenge to systems and processes in order to identify opportunities for service improvements	1
Makes decisions: integrates values with evidence to inform decisions	1,3

3. Content of learning

3.1 Fundamental Immunology

The trainee will acquire a sound knowledge of Fundamental Immunology required to underpin clinical and laboratory practice

Knowledge	Assessment Methods	GMP
Core body of knowledge in fundamental immunology: • Cells of the immune system • Cytokines,chemokines and other inflammatory mediators including lipid mediators • Phagocytic cells and their function • Antibody mediated immunity • Complement system • Cell-mediated immunity • Innate immunity • Regulation of the immune system • Hypersensitivity mechanisms • Pathogenesis of immunodeficiency • Pathogenesis of allergic diseases • Immunological tolerance and the pathogenesis of autoimmunity • Immunobiology of transplant rejection and its prevention • Classification and biology of malignancies of the lymphoid system • Scientific basis of allergen immunotherapy • Scientific basis of immunoprophylaxis • Scientific basis of therapy for primary immunodeficiency • Scientific basis of immunosuppressive and immunomodulatory therapy • New developments in therapy of immunodeficiency	FRCPath, CbD	1
Skills		
Ability to integrate knowledge of fundamental immunology to understand the patho-physiology, including the genetic and molecular basis of (a) immunodeficiency diseases, (b) autoimmune / rheumatic disease and systemic vasculitides, (c) allergic disease	FRCPath, CbD	1
Behaviours		
Recognise vital importance of fundamental immunology to practice as a clinical immunologist	FRCPath	1

3.2 Primary and Secondary Immunodeficiency Diseases

The trainee will acquire and be able to apply a comprehensive body of knowledge relating to the clinical presentation, investigation and management of patients with primary and secondary immunodeficiency diseases

Knowledge	Assessment Methods	GMP
The skills and knowledge required to: assess and manage patients with congenital and acquired immunodeficiency – including antibody and cell mediated defects, complement deficiency, C1 inhibitor deficiency and neutrophil defects, at a consultant level.(Use report of IUIS Scientific Committee : Bonilla FA,Geha RS.Update on primary immunodeficiency diseases.J Allergy Clin Immunol 2006;117:S 435-441)	FRCPath, CbD	1,2,3
Skills		
Eliciting a relevant focused history in the context of immunodeficiency to guide clinical examination and formulation of differential diagnoses.	Mini-CEX, CbD	1
Physical examination – to perform a targeted and relevant clinical examination and link findings to the history to establish diagnosis(es) and formulate a management plan.	Mini-CEX, CbD	1
Selection of appropriate laboratory and ancillary investigations	FRCPath, CbD, Mini-CEX	1,3
Formulating differential diagnoses	FRCPath, CbD, Mini-CEX	1
Decision making and Clinical Reasoning – develops the ability to formulate a diagnostic and therapeutic plan based on integration of laboratory results and current guidelines on management of immunodeficiency.	FRCPath, CbD	1
Therapeutic Interventions – to prescribe, review and monitor therapeutic interventions relevant to the management of immunodeficiencies.	FRCPath, CbD, Mini-CEX	1,2
Understand putative mechanisms of action of various immunological therapies including immunoprophylaxis	FRCPath, CbD	1
Have a working knowledge of the evidence base for the use of various immunological therapies including immunoprophylaxis	FRCPath, CbD	1
Be able to explain the indications for the use of these therapies including immunoprophylaxis	FRCPath, CbD	1
Be able to explain adverse effects associated with individual therapies and immunoprophylaxis	FRCPath, CbD	1
Behaviours		
Recognise importance of understanding immunopathogenesis to devise therapeutic options in these disorders	FRCPath, CbD	1,2
Recognise importance of understanding genetic basis of immunodeficiencies and the importance of genetic counselling in disease prevention	FRCPath, CbD	1,3
As the primary physician for patients with immunodeficiencies, recognise importance of patient and service advocacy in leading and developing clinical and laboratory services for this group of patients.	FRCPath	1,3
Recognise importance of obtaining valid consent from the patient for treatment with immunoglobulin and therapeutic monoclonal antibodies	CbD, DOPS	1,2,3

Recognise importance of making optimal use of current best evidence in making decisions about immunoglobulin replacement and treatment with therapeutic monoclonal antibodies	CbD	1,2
Recognise the need for audit of clinical practice in immunodeficiency to promote standard setting and quality assurance	AA, CbD	1,2

3.3 Systemic Autoimmune Rheumatic Disease and Systemic Vasculitides

The trainee will acquire and be able to apply a comprehensive body of knowledge relating to the clinical presentation, investigation and management of patients with systemic autoimmune rheumatic disease and systemic vasculitides

Knowledge	Assessment Methods	GMP
Core body of knowledge required to recognise, investigate and manage patients (in liaison with rheumatologists or relevant organ-based specialist) with systemic lupus erythematosus, scleroderma, inflammatory myositis, Wegener's granulomatosis, microscopic polyangiitis, cryoglobulinaemic vasculitis, giant cell arteritis, Takayasu's arteritis, polyarteritis nodosa and Henoch-Schonlein purpura and auto-inflammatory syndromes	FRCPath, CbD	1,3
Evidence –base for the various therapeutic options (conventional immunosuppressive agents, biologics) available to treat these patients	FRCPath, CbD	1,2
Skills		
History taking - eliciting a relevant focused history in the context of suspected systemic autoimmune rheumatic disease and systemic vasculitides to guide clinical examination and formulation of differential diagnoses	FRCPath, CbD, Mini-CEX	1
Physical examination - to perform a targeted and relevant clinical examination and link findings to the history to establish diagnosis(es) and formulate a management plan.	FRCPath, CbD, Mini-CEX	1
Selection of appropriate laboratory and ancillary investigations	FRCPath, CbD, Mini-CEX	1,3
Formulating differential diagnoses	FRCPath, CbD, Mini-CEX	1
Decision making and Clinical Reasoning – develops the ability to formulate a diagnostic and therapeutic plan based on integration of laboratory results and current guidelines on management of systemic autoimmune rheumatic disease and systemic vasculitides	FRCPath, CbD	1
Ability to apply knowledge of therapeutic options to select the most appropriate treatment for an individual patient	FRCPath, CbD	1
Behaviours		
Recognise importance of understanding immunopathogenesis to devise therapeutic options in these disorders	FRCPath, CbD	1
Recognise importance of service leadership in providing a diagnostic immunology laboratory service for patients with autoimmune diseases	FRCPath	1,3
Recognise importance of obtaining valid consent from the patient for treatment with immunosuppressive therapy and therapeutic monoclonal antibodies	CbD, DOPS	1,2,3
Recognise importance of making optimal use of current best evidence in making decisions about immunosuppressive therapy and treatment with therapeutic monoclonal antibodies	CbD	1,2

Appreciate need for close monitoring of patients to prevent/minimise adverse effects of therapy	FRCPath, CbD	1,2
Recognise the need for audit of clinical practice in autoimmune rheumatic diseases and systemic vasculitides to promote standard setting and quality assurance	AA, CbD	1,2

3.4 Allergic Diseases

The trainee will acquire and be able to apply a comprehensive body of knowledge relating to the clinical presentation, investigation and management of patients with allergic diseases of all degrees of severity

Knowledge	Assessment Methods	GMP
Core body of knowledge required to recognise, investigate and manage patients with allergic diseases of all degrees of severity including food and aero allergy, insect venom allergy, drug allergy, anaesthetic allergy, latex allergy, anaphylaxis, anaphylactoid reactions, urticaria, non-hereditary angioedema, mastocytosis	FRCPath, CbD	1
Evidence –base for the various therapeutic options to treat these patients, including anti-histamines, steroids and allergen-immunotherapy (desensitization therapy)	FRCPath, CbD	1,2
Skills		
History taking - eliciting a relevant focused history in the context of suspected allergic disease to guide clinical examination and formulation of differential diagnoses	FRCPath, CbD, Mini-CEX	1,3
Physical examination - to perform a targeted and relevant clinical examination and link findings to the history to establish diagnosis(es) and formulate a management plan.	FRCPath, CbD, Mini-CEX	1
Selection of appropriate laboratory and ancillary investigations	FRCPath, CbD, Mini-CEX	1,3
Skin testing	FRCPath, CbD, Mini-CEX	1,3
Allergen immunotherapy	FRCPath, CbD, DOPS, Mini-CEX	1,3
Challenge testing	FRCPath, CbD, DOPS, Mini-CEX	
Self-injectable adrenaline training	FRCPath, CbD, DOPS, Mini-CEX	1,3
Formulating differential diagnoses	FRCPath, CbD, Mini-CEX	1
Ability to apply knowledge of therapeutic options to select the most appropriate treatment for an individual patient	FRCPath, CbD	1
Decision making and Clinical Reasoning – develops the ability to formulate a diagnostic and therapeutic plan based on integration of laboratory results and current guidelines on management of allergic diseases.	FRCPath, CbD	1
Behaviours		
Recognise importance of understanding immunopathogenesis to devise therapeutic options in these disorders	FRCPath, CbD	1
Recognise importance of obtaining valid consent from the patient for	CbD, DOPS	1,2,3

desensitisation immunotherapy		
Appreciate need for close monitoring of patients to prevent/minimise adverse effects of therapy	FRCPath, CbD	1,2
Recognise importance of making optimal use of current best evidence in making decisions about desensitisation immunotherapy,immunosuppressive therapy and treatment with therapeutic monoclonal antibodies	CbD	1,2
Recognise importance of service leadership in providing a diagnostic immunology service for patients with allergic diseases	FRCPath	1
Recognise the need for audit of clinical practice in allergy to promote standard setting and quality assurance	AA, CbD	1,2

3.5 Laboratory Immunology

The trainee will acquire and be able to apply a solid foundation of knowledge required to direct a diagnostic immunology laboratory at Consultant Level

Knowledge	Assessment Methods	GMP
The skills and knowledge essential for directing a diagnostic immunology laboratory at Consultant level	FRCPath	1,3
A sound knowledge of the principles of laboratory testing in diagnostic immunology	FRCPath	1
Be able to perform certain designated laboratory tests without supervision	DOPS	1
Be able to select, interpret and provide clinical advice based on laboratory investigations as set out in the Laboratory Training Manual, relevant to the diagnosis, assessment and monitoring of patients with suspected immunodeficiency, allergy or autoimmunity.	FRCPath, CbD	1
Be fully conversant with the diagnostic utility and limitations of laboratory tests e.g. sensitivity, specificity, predictive values	FRCPath, CbD	1,2
Trainees will be able to explain the concept of Quality Assurance and Quality Control and apply these in practice as detailed in the Laboratory Manual and Training Record.	FRCPath	1,2
Skills		
These are detailed in the laboratory manual and training record	FRCPath, DOPS	1,2,3
Behaviours		
Establishes close rapport and understanding with laboratory staff, users of the laboratory service and service managers	MSF	3
Appreciates integral importance of teamwork in running a diagnostic laboratory service	MSF	3
Recognise importance of service leadership in providing a diagnostic immunology laboratory service for patients with autoimmune disease, immunodeficiency and allergy.	FRCPath	2,3
Recognise the need for audit of laboratory practice in immunology to promote standard setting and quality assurance	AA, CbD	1,2

4 Learning and Teaching

4.1 The Training Programme

The organisation and delivery of postgraduate training is the statutory responsibility of the General Medical Council (GMC) which devolves responsibility for the local organisation and delivery of training to the deaneries. Each deanery oversees a "School of Medicine" which is comprised of the regional Specialty Training Committees (STCs) in each medical specialty. Responsibility for the organisation and delivery of specialty training in Immunology in each deanery is, therefore, the remit of the regional Immunology STC. Each STC has a Training Programme Director who coordinates the training programme in the specialty.

Immunological diseases may have both adult and paediatric presentations. Collaborative training with paediatricians, particularly in relation to immunodeficiency will be undertaken. This will include a dedicated period of secondment to a recognised paediatric immunology centre where in-depth experience in the assessment and management of immunodeficient children will be obtained. The assessment and management of children with suspected severe combined immunodeficiency (SCID) will form an important component of this period of secondment. This will allow the trainee to develop the required skills essential for liaising with paediatric colleagues.

The training programme is structured to deliver a solid grounding in fundamental immunology in ST3 and ST4 years whilst simultaneously enabling trainees to acquire Level 1 competencies in clinical and laboratory immunology. As trainees progress through ST5 and ST6, they will broaden their experience and understanding of applied clinical and diagnostic laboratory immunology, culminating with the completion of the FRCPath examination in immunology prior to completion of training at the end of ST7.

In addition to paediatric immunology, it is recognised that trainees will require a period of secondment to other regional or national centres (typically 2-3 months) for acquisition of experience in those subject areas which may not be available in the local training programme e.g drug allergy, desensitisation immunotherapy.

The sequence of training should ensure appropriate progression in experience and responsibility. The training to be provided at each training site is 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.

Acting up as a consultant (AUC)

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

Although acting up often fulfills a genuine service requirement, it is not the same as being a locum consultant. Doctors in training acting up will be carrying out a consultant's tasks but with the understanding that they will have a named supervisor at the hosting hospital and that the designated supervisor will always be available for support, including out of hours or during on-call work. Doctors in training will need to

follow the rules laid down by the Deanery / LETB within which they work and also follow the JRCPTB rules which can be found at www.jrcptb.org.uk/trainingandcert/Pages/Out-of-Programme.

4.2 Teaching and Learning Methods

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

Trainees will achieve the competencies described in the curriculum through a variety of learning methods. There will be a balance of different modes of learning from formal teaching programmes to experiential learning 'on the job'. The proportion of time allocated to different learning methods may vary depending on the nature of the attachment within a rotation.

This section identifies the types of situations in which a trainee will learn.

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

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

- Immunology and Allergy clinics, including immunoglobulin infusion and desensitisation immunotherapy. After initial induction, trainees will review patients in outpatient clinics, under direct supervision. The degree of responsibility taken by the trainee will increase as competency increases. As experience and clinical competence increase trainees will assess 'new' and 'review' patients and present their findings to their clinical supervisor
- Depending on the stage of training, trainees will actively participate in connective tissue disease clinics
- Assessment of in-patients referred for immunological or allergy opinions. Every patient seen, on the ward or in out-patients, provides a learning opportunity, which will be enhanced by following the patient through the course of their illness: the experience of the evolution of patients' problems over time is a critical part both of the diagnostic process as well as management. Patients seen should provide the basis for critical reading and reflection of clinical problems
- Consultant-led ward rounds. Every time a trainee observes another doctor, consultant or fellow trainee, seeing a patient or their relatives there is an opportunity for learning. Ward rounds should be led by a consultant and include feedback on clinical and decision-making skills
- Multi-disciplinary team meetings. There are many situations where clinical problems are discussed with clinicians in other disciplines. These provide excellent opportunities for observation of clinical reasoning
- Laboratory-based learning – trainees will undertake a range of immunological techniques as required by the curriculum, initially under supervision to be followed by independent performance when fully competent
- Management of common laboratory issues including assessment of new diagnostic tests, audit, troubleshooting and evaluation of data relating to quality assurance

Formal Postgraduate Teaching – The content of these sessions are determined by the local faculty of medical education and will be based on the curriculum. There are many opportunities throughout the year for formal teaching in the local postgraduate teaching sessions and at regional, national and international meetings. Many of these are organised by the Royal Colleges of Physicians, the Royal College of Pathologists, the Association of Clinical Pathologists, the British Society for Immunology and the British Society for Allergy and Clinical Immunology.

Suggested activities include:

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

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

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

Formal Study Courses - Time to be made available for formal courses is encouraged, subject to local conditions of service. Examples include management courses and communication courses.
It is implicit that active participation in the above learning and teaching opportunities will enhance a trainee's knowledge and skills which eventually translates in to a fully competent immunologist able to meet the needs of patients with a wide range of immune-mediated disease, including immunodeficiency, systemic autoimmune disease and serious allergy.

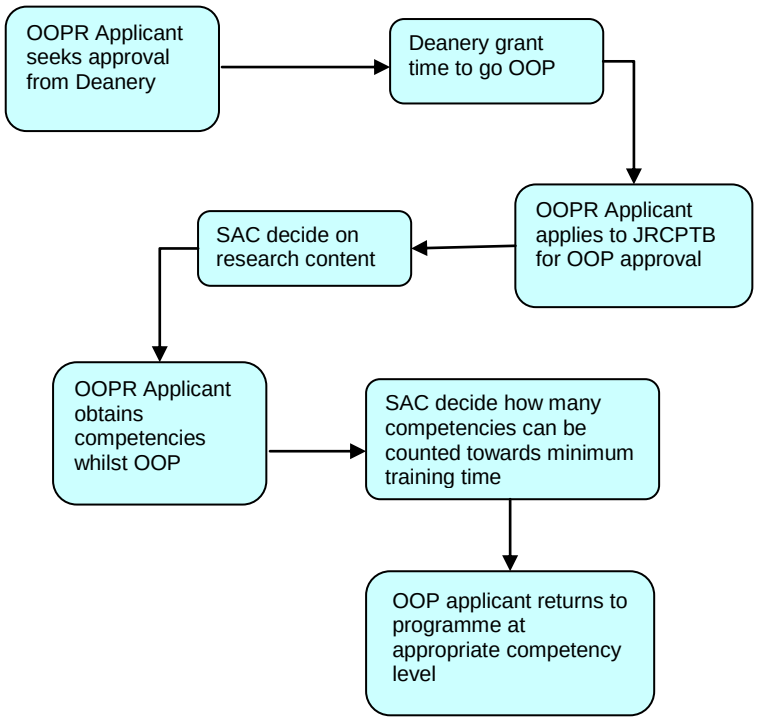
4.3 Research

Trainees who wish to acquire research competencies, in addition to those specified in their specialty curriculum, may undertake a research project as an ideal way of obtaining those competencies. For those in specialty training, one option to be considered is that of taking time out of programme to complete a specified project or research degree. Applications to research bodies, the deanery (via an OOPR form) and the JRCPTB (via a Research Application Form) are necessary steps, which are the responsibility of the trainee. The JRCPTB Research Application Form can be accessed via the JRCPTB website. It requires an estimate of the competencies that will be achieved and, once completed, it should be returned to JRCPTB together with a job description and an up to date CV. The JRCPTB will submit applications to the relevant SACs for review of the research content including an indicative assessment of the amount of clinical credit (competence acquisition) which might be achieved.

This is likely to be influenced by the nature of the research (eg entirely laboratory-based or strong clinical commitment), as well as duration (eg 12 month Masters, 2-year MD, 3-Year PhD). On approval by the SAC, the JRCPTB will advise the trainee and the deanery of the decision. The deanery will make an application to the GMC for approval of the out of programme research. All applications for out of programme research must be prospectively approved.

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

This process is shown in the diagram below:



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

A maximum period of 3 years out of programme is allowed and the SACs will recognise up to 12 months towards the minimum training times.

4.4 Academic Training

For those contemplating an academic career path, there are now well-defined posts at all levels in the Integrated Academic Training Pathway (IATP) involving the National Institute for Health Research (NIHR) and the Academy of Medical Sciences (AMS). For full details see http://www.nccrcd.nhs.uk/intetacatrain and http://www.academicmedicine.ac.uk/uploads/A-pocket-guide.pdf. Academic trainees may wish to focus on education or research and are united by the target of a consultant-level post in a university and/or teaching hospital, typically starting as a

senior lecturer and aiming to progress to readership and professor. A postgraduate degree will usually be essential (see “out of programme experience”) and academic mentorship is advised (see section 6.1). Academic competencies have been defined by the JRCPTB in association with AMS and the Colleges and modes of assessment have been incorporated in the latest edition of the Gold Guide (section 7, see http://www.jrcptb.org.uk/forms/Documents/GoldGuide2009.pdf).

Academic integrated pathways to CCT are a) considered fulltime CCTs as the default position and b) are run through in nature. The academic programmes are CCT programmes and the time set for the CCT is the time set for academic trainees. If a trainee fails to achieve all the required competencies within the notional time period for the programme, this would be considered at the ARCP, and recommendations to allow completion of clinical training would be made (assuming other progress to be satisfactory) see the guidelines for monitoring training and progress http://www.academicmedicine.ac.uk/careersacademicmedicine.aspx. Extension of a CCT date will be in proportion depending upon the nature of the research and will ensure full capture of the specialty outcomes set down by the Royal College and approved by GMC.

All applications for research must be prospectively approved by the SAC and the regulator, see www.jrcptb.org.uk for details of the process.

5 Assessment

5.1 The Assessment System

The purpose of the assessment system is to:

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

The integrated assessment system comprises a combination of workplace-based assessments and knowledge – based assessments. Individual assessment methods are described in more detail below.

Workplace-based assessments will take place throughout the training programme to allow trainees to continually gather evidence of learning and to provide trainees with formative feedback. They are not individually summative but overall outcomes from a number of such assessments provide evidence for summative decision making. The number and range of these will ensure a reliable assessment of the training relevant to their stage of training and achieve coverage of the curriculum.

5.2 Assessment Blueprint

In the syllabus (3.3) the "Assessment Methods" shown are those that are appropriate as **possible** methods that could be used to assess each competency. It is not expected that all competencies will be assessed and that where they are assessed not every method will be used.

5.3 Assessment Methods

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

Examinations and Certificates

- The FRCPath examination in Immunology: Part I, Part II
- Advanced Life Support Certificate (ALS)

The FRCPath Examination in Immunology comprises two parts.

The Part I examination comprises 2 written papers covering fundamental immunology and clinical problem-solving. The part I examination is designed to test a candidate's grasp of fundamental immunology and ability to integrate knowledge and experience to critically evaluate clinical cases and laboratory results.

The Part II examination is composed of a written component, an objective structured practical examination (OSPE), followed by an extended objective structured oral examination (OSOE). Successful completion of the FRCPath part II examination denotes that a candidate has reached the standard required for independent practice as a consultant immunologist.

FRCPath examiners are appointed to the Panel of Examiners for a five year period. They will have been in a substantive post for at least five years and be actively involved in training and educational supervision and be undertaking continuous professional development. Examiners are required to undertake training in, and contribute to the ongoing development of, the examinations process. They are expected to examine a minimum number of times during the five year period as defined in the RCPath examination regulations. Their examining work can be in one or all of the examination components, as determined by the Chair of the Panel of Examiners.

Information about the FRCPath, including guidance for candidates, is available on the Royal College of Pathologist's website:
http://www.rcpath.org/index.asp?PageID=114&SearchStr=frcpath .

Workplace-Based Assessments

- Multi-Source Feedback (MSF)
- mini-Clinical Evaluation Exercise (mini-CEX)
- Direct Observation of Procedural Skills (DOPS)
- Case-Based Discussion (CbD)
- Patient Survey (PS)
- Audit Assessment (AA)
- Teaching Observation (TO)

These methods are described briefly below. More information about these methods including guidance for trainees and assessors is available in the ePortfolio and on the JRCPTB website www.jrcptb.org.uk. Workplace-based assessments should be recorded in the trainee's ePortfolio. The workplace-based assessment methods

include feedback opportunities as an integral part of the assessment process, this is explained in the guidance notes provided for the techniques.

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

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

Direct Observation of Procedural Skills (DOPS)
A DOPS is an assessment tool designed to assess the performance of a trainee in undertaking a practical procedure, against a structured checklist or standard operating procedure. The trainee receives immediate feedback to identify strengths and areas for development.

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

Patient Survey (PS)
Patient Survey address issues, including behaviour of the doctor and effectiveness of the consultation, which are important to patients. It is intended to assess the trainee's performance in areas such as interpersonal skills, communication skills and professionalism by concentrating solely on their performance during one consultation.

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

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

5.4 Decisions on Progress (ARCP)

The Annual Review of Competence Progression (ARCP) is the formal method by which a trainee's progression through her/his training programme is monitored and recorded. ARCP is not an assessment – it is the review of evidence of training and assessment. The ARCP process is described in A Reference Guide for Postgraduate Specialty Training in the UK (the "Gold Guide" – available from **www.mmc.nhs.uk**). Deaneries are responsible for organising and conducting ARCPs. The evidence to be reviewed by ARCP panels should be collected in the trainee's ePortfolio.

In each year of training, acquisition of knowledge and competencies relating to each of the main subject areas of the curriculum will be assessed by a combination of mini-CEX, DOPS, CbD, AA and TO. These methods of formative assessment will be complemented by summative assessment in the form of the FRCPath examination in Immunology, which will be taken at defined points in the training programme – part I of the FRCPath will generally be taken at the end of ST4 or early in ST5 with part II being taken towards the end of ST6 or early in ST7. Successful completion of the FRCPath examination coupled with satisfactory progress through the ARCP process is essential pre-requisites for the award of a CCT in Immunology.

The ARCP Decision Aid is included in section 5.5, giving details of the evidence required of trainees for submission to the ARCP panels.

Each section of the syllabus outlines the knowledge, skills and behaviours that must be obtained by the trainee in order to successfully complete training. During their training, it is expected that the trainee will progress through three levels of competence, as outlined below:

> Level 1: Introductory - The trainee has comprehensive understanding of principles and practices under direct supervision.
>
> Level 2: Intermediate - The trainee has a good general knowledge and understanding of most principles and practices under indirect supervision. He/she should be able to deal with most of the day-to-day issues in a hospital immunology laboratory and outpatient clinic/ward to an adequate level but will still require consultant input with regard to complex management and clinical issues.
>
> Level 3: Independent - The trainee has an in-depth knowledge and understanding of principles. He/she should be competent to discuss and deal with the subject (or, where appropriate, perform the task/procedure), demonstrating a level of clinical or professional judgement commensurate with independent practice at consultant level. It is anticipated that a trainee at this level should have consultant input readily available at all times where required

.

5.5 ARCP Decision Aid - Minimal Standards Determining Satisfactory Progress

Immunology Specialist Training

Curriculum topic	ST3	ST4	ST5	ST6	ST7
Fundamental Immunology	Level 1 competent	Level 2 competent	Level 2 competent	Level 3 competent	Level 3 competent
Primary immunodeficiency	Level 1 competent	Level 2 competent	Level 2 competent	Level 2 competent	Level 3 competent
Autoimmune disease and systemic vasculitides	Level 1 competent	Level 2 competent	Level 2 competent	Level 2 competent	Level 3 competent
Allergic diseases	Level 1 competent	Level 2 competent	Level 2 competent	Level 2 competent	Level 3 competent
Laboratory Immunology (see laboratory training manual and record)				Level 3 competent in all core areas of laboratory immunology	
Audit assessment (AA)		1 completed project		1 completed project	
Teaching observation (TO) episodes	1	1	1	1	1
Acquisition of common competencies (% by end of year) evidenced by above assessments	20%	40%	60%	80%	100%
ALS	Valid	Valid	Valid	Valid	Valid
Examinations			FRCPath part I		FRCPath part II
MSF		Satisfactory		Satisfactory	
Patient Survey	Satisfactory		Satisfactory		
Minimum number of work place assessments (comprising a combination of mini-CEX, DOPS, ,CbD, AA and TO) ensuring coverage of the key subject areas of the curriculum	6	6	6	6	6

The above table serves as a guide to ARCP panels in assessing the progress of trainees in Immunology. The rate at which each individual trainee will acquire the necessary knowledge base in the 5 main subject areas of the curriculum (fundamental immunology, immunodeficiency, autoimmune disease, allergy and laboratory immunology) will inevitably vary. The incremental nature of acquisition of competencies (L1 to L3) is mapped against key learning outcomes as defined in the curriculum.It is meant to be interpreted flexibly and designed to ensure that the progress of trainees is measurable. While failure to achieve coverage of the precise proportion of the curriculum at the end of each year should not be seen as an insurmountable barrier to trainee progress, it is necessary for all trainees to achieve Level 3 competence across the curriculum and complete the FRCPath examination by the end of the training programme.

5.6 Penultimate Year Assessment (PYA)

The penultimate ARCP prior to the anticipated CCT date will include an external assessor from outside the training programme. JRCPTB and the deanery will coordinate the appointment of this assessor. This is known as “PYA”. Whilst the ARCP will be a review of evidence, the PYA will include a face to face component.

5.7 Complaints and Appeals

FRCPath Examinations

A trainee who has taken any Royal College of Pathologists examination has the right of appeal if there is evidence of a procedural or administrative irregularity by the College or its contracted examination centres in the conduct or content of the examination that has adversely affected the trainee’s result. The appeals procedure is outlined in the Regulations and Guidelines for Membership Exams and Diplomas on the College website. The regulations and guidelines are reviewed annually, at which time the appeals procedure will automatically be reviewed.

Appeals submitted on the grounds that a candidate seeks to challenge the professional or academic judgement of the examiners will not be considered and in no circumstances will the examination be re-marked. The principle underlying this is that the written papers and options are double blind marked and the reliability of the marking decisions in oral and practical assessments is greatest at the time of the initial examiners’ judgement. Subsequent review by different or senior examiners or by independent assessors cannot guarantee increased accuracy or reliability. Moreover, in the case of the oral and some practical assessments there is no residual physical evidence of the candidate’s performance, which could be revisited.

Any appeal must be made by the trainee in writing to the Examinations Department within one month of issue of the examination result. The appeal will be considered by the Director of Examinations and Assessment, who will arrange an appropriate investigation of the appeal. This will include checking that no administrative, procedural, numerical, data transcription or computing errors have occurred, and that the declared result accurately reflects the judgement of the examiners. The Director may also ask the Chair of the Panel of Examiners for a report on the examination in question. Where a procedural irregularity is found the Director may authorise a refund of the examination fee or waiver of the fee to re-sit the relevant component of the examination. Only in exceptional circumstances, where it is clear that a paper has been overlooked or marks incorrectly totalled, will a fail mark be converted to a pass.

There is a complaints procedure for all activities managed by the Examinations Department not directly linked to an outcome of an examination. The complaints procedure is available on the College website.

The Examinations Manager is responsible for the complaints procedure and for maintaining a register of complaints detailing the nature of the complaint and the outcome. The register will be reviewed on a periodic basis by the Director of Examinations and Assessment who will aim to identify trends that indicate a need to review regulations and procedures. The Chair of the Panel of Examiners will also be advised of all complaints relating to the specialty. Candidates dissatisfied by the outcome of the examinations complaints procedure can take the matter further by going through the College’s complaints procedure and

referring the matter to the Chief Executive. Complaints referred to the Chief Executive are reviewed on a periodic basic by the College's Executive Committee

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

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

6 Supervision and Feedback

6.1 Supervision

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

Trainees will at all times have a named Educational Supervisor and Clinical Supervisor, responsible for overseeing their education. Given the small size of the specialty of Immunology, these roles have been combined into a single role of Educational Supervisor.

The responsibilities of supervisors have been defined by GMC in the document "Operational Guide for the PMETB Quality Framework". These definitions have been agreed with the National Association of Clinical Tutors, the Academy of Medical Royal Colleges and the Gold Guide team at MMC, and are reproduced below:

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

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

Trainees will at all times have a named Educational Supervisor and Clinical Supervisor, responsible for overseeing their education. All trainers and educational supervisors will be consultants of at least 1years standing who will have undergone appropriate training to fulfil these roles, as determined by the local postgraduate deanery.

The educational supervisor will be responsible for performing an induction appraisal soon after the trainee is appointed followed by 2 to 3 appraisals per year where developmental goals are agreed and previous goals reviewed. In co-ordinating training,the educational

supervisor will ensure that the curriculum is followed, write the supervisor's report, provide feedback, communicate with other supervisors as required and support the under-performing trainee.

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

Opportunities for feedback to trainees about their performance will arise through the use of the workplace-based assessments, regular appraisal meetings with supervisors, other meetings and discussions with supervisors and colleagues, and feedback from ARCP. Deaneries will be responsible for ensuring that trainers and assessors are appropriately trained to undertake their educational responsibilities. Trainers and assessors will be expected to be fully conversant with the curriculum and assessment methods and work in conjunction with the SAC to deliver effective training.

6.2 Appraisal

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

Induction Appraisal

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

Mid-point Review

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

End of Attachment Appraisal

Trainees should review the PDP and curriculum progress with their educational supervisor using evidence from the e-portfolio. Specific concerns may be highlighted from this appraisal. The end of attachment appraisal form should record the areas where further work is required to overcome any shortcomings. Further evidence of competence in certain areas

may be needed, such as planned workplace-based assessments, and this should be recorded. If there are significant concerns following the end of attachment appraisal then the programme director should be informed.

7 Managing Curriculum Implementation

7.1 Intended Use of Curriculum by Trainers and Trainees

This curriculum and ePortfolio are web-based documents which are available from the Joint Royal Colleges of Physicians Training Board (JRCPTB) website www.jrcptb.org.uk .

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

Each trainee will engage with the curriculum by maintaining a portfolio. The trainee will use the curriculum to develop learning objectives and reflect on learning experiences.

Development of the 2009 curriculum has been facilitated by a national educational workshop on the curriculum and assessment methods for educational supervisors and trainers held by the JRCPTB at the Royal College of Physicians on 26th June 2009. Local mechanisms for curriculum implementation will be overseen by the relevant schools of medicine under the aegis of postgraduate deaneries. Regular feedback from trainee representatives on the SAC in Immunology at JRCPTB, the SAC in Immunology at the Royal College of Pathologists and the Intercollegiate Joint Committee on Immunology and Allergy will ensure that trainees' views on curriculum implementation are adequately represented.

7.2 Recording progress

On enrolling with JRCPTB trainees will be given access to the ePortfolio for Immunology (under development). The ePortfolio allows evidence to be built up to inform decisions on a trainee's progress and provides tools to support trainees' education and development.

The trainee's main responsibilities are to ensure the ePortfolio or relevant paper copies are kept up to date, arrange assessments and ensure they are recorded, prepare drafts of appraisal forms, maintain their personal development plan, record their reflections on learning and record their progress through the curriculum.

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

Trainees will be expected to document acquisition of laboratory immunology competencies by recording progress in the Laboratory Training Manual (Laboratory logbook).

8 Curriculum Review and Updating

The curriculum will remain under regular review as a standing item on the agenda for meetings of the SAC in Immunology at JRCPTB held 3 times a year. Trainee and lay representation on the committee will enable the SAC to respond to any issues raised by these groups. In addition to these meetings, the SAC will formally review the curriculum at its joint annual meeting with Regional Specialty Advisors. These meetings will ensure that the

curriculum remains relevant to current practice and that the SAC responds swiftly to advances in basic and applied immunological science which impact on the quality of care provided to patients with immune-mediated disease.

9 Equality and Diversity

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

- Race Relations (Amendment) Act 2000
- Disability Discrimination Act 1995
- Human Rights Act 1998
- Employment Equality (Age) Regulation 2006
- Special Educational Needs and Disabilities Act 2001
- Data Protection Acts 1984 and 1998

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

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

Compliance with anti-discriminatory practice will be assured through:

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

10 Appendix A

Laboratory Training Manual and Record for Specialty Registrars in Immunology

NAME:

NTN Number:

LABORATORY ADDRESS:

TELEPHONE NUMBER:

EMAIL ADDRESS:

PRINCIPAL LABORATORY SUPERVISOR'S NAME:

START DATE:

FINAL SUBMISSION DATE:

INTRODUCTION

This manual outlines the JRCPTB Laboratory Training program for trainees in Immunology.

The Training Programme Director and consultant supervisor will be responsible for the continuous assessment of the trainee. This will be achieved by regular contact between the trainee and their supervisor to assess progress using the record made in their training manual. Sections in the training manual will be signed by the person supervising the training (BMS 1 or Higher, or Clinical Scientist of B Grade or Higher). The log book will be reviewed together with other relevant records like 360 degree assessments at ARCP meetings. Satisfactory completion of laboratory training will be assessed and certified at the PYA, as a mandatory part of the process.

Differences exist in the type and size of individual training departments and secondments to other units may be necessary to achieve competence in some procedures. Training aims are for the trainee to gain an understanding of immunological mechanisms and apply this knowledge to the investigation and diagnosis of disease processes.

The trainee will develop the expertise needed to advise on the application of laboratory investigations to diseases of the immune system, to interpret the results generated by such investigations, to be aware of the limitations of laboratory assays, to initiate appropriate research and development in diagnostic laboratory immunology and to understand the managerial organisation within the NHS.
The Sections highlighted in *bold italics* are regarded as core areas with which the trainee is expected to be fully conversant and demonstrate a level of competence required for independent practice.

USE OF THE TRAINING MANUAL

This manual covers the areas in which a trainee should gain experience over the 4-year training course. It provides a record of continuous assessment. The supervisor and trainee should indicate the dates on which the trainee has studied a topic and where relevant, the level of competence achieved. It is envisaged that a higher level will be assigned as more experience is gained. At present there is no standard way of electronically validating signatures. Therefore a printed certified version should be included in your portfolio for inspection at ARCP assessments.

The training manual should be augmented with any additional information which will document the training received and the levels reached. The completed record of training will be used ultimately to assess the successful completion of the training.

The Manual is divided into sections

Section 1 Laboratory Management
Section 2 Analytical Techniques and Instrumentation
Section 3 Interpretation of Immunology tests
Section 4 Research and Development
Section 5 Meetings attended
Section 6 Presentations given

SECTION 1 LABORATORY MANAGEMENT

This section gives the trainee an insight into the functional organisation of a laboratory, a hospital and the National Health Service. The trainee should also understand the importance of quality assurance, clinical governance and Health and Safety aspects of laboratory management. An appreciation of the organisation of the analytical and reporting process should also be obtained. The understanding of theoretical aspects and practical experience should be recorded.

Management and Professional Structures

	Date Covered	Comments
NHS Organisation and Management		
Hospital Management Structure		
Laboratory structure		

Handling of Information

	Date Covered	Comments
Initiation of request by clinician		
Types of patient records: eg. Paper based, Electronic		
Patient confidentiality and consent		
Laboratory computer system		
Use of a Personal Computer including common programmes (eg. Word Processing , database, Statistical analysis, Bibliography)		
Data protection Act		
Reporting of Results		
Telephone Enquiries		

Sample Handling

	Date Covered	Has reached level of competence required for independent practice	Comments
Specimen collection and transport			
Transportation through the post			
Sample handling and storage in laboratory			
Disposal of clinical waste			
High Risk Samples			
Spillage and containment			

Quality Assurance

	Date Covered	Has reached level of competence required for independent practice	Comments
The SOP			
Document control			
Sample requirements			
Specimen identity checks			
Determining Normal ranges			
Internal quality control			
External quality control			
Quality assurance			
QC interpretation			
Laboratory accreditation: CPA			
Statutory Registration of Laboratory Staff			
Laboratory Audit			

Health and Safety

	Date Covered	Has reached level of competence required for independent practice	Comments
The laboratory safety policy			
Risk management			
Health and safety at work act			
Fire safety			
Dealing with biological hazards in the laboratory			
Disinfection and decontamination			
Vaccination policy			
Chemical hazards including COSHH			
Mechanical hazards (including sharps)			
Dealing with needle-stick injuries			
Electrical hazards			
Ionising radiation			
Laser/UV hazards			
Genetic manipulation policy			
Incident handling			
Waste disposal			
Safe Storage of Chemicals			

Basic Laboratory Management

	Date Covered	Comments
Business planning		
Bidding for new services/equipment		
Finance control		
Staffing and Personnel Issues		
Disciplinary Procedures		
Organising Research & Development		

SECTION 2: ANALYTICAL TECHNIQUES AND INSTRUMENTATION / LABORATORY PROCEDURES

The purpose of this section is to allow the trainee to become familiar with a range of techniques encountered in the Immunology laboratory and to gain an understanding of the assay principles and their application.

For each entry in this section the competence of the trainee is assessed as follows:

- Level 0: Procedure unavailable in laboratory or opportunity for training not available.
- Level 1: Observed a demonstration.
- Level 2: Technique preformed under supervision and has a basic understanding of the theory behind the procedure and can rectify any problems that occur.
- Level 3: Technique performed without supervision and has a comprehensive understanding of the theoretical concepts and application of the assay.
- Level 4: Extensive experience of technique and where relevant, has a knowledge of the clinical interpretation of the results generated.

Wide experience rather than in-depth knowledge of a limited number of techniques should be aimed for (i.e. level 4 is not expected in all topics).

Where essential procedures are unavailable, secondment to a laboratory performing those assays should be offered. This should be noted in the secondments section.

ANALYTICAL TECHNIQUES AND INSTRUMENTATION

A. BASIC LABORATORY TECHNIQUES

Operation of Basic Laboratory Equipment

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Liquid handling using Pipettes					
Liquid handling using robotics					
Balances					
Centrifuges					
pH meters, Concept of buffers					
Water purification					
Microscopy, types of microscopes					
Preparation of sections for microscopy					
Fixation and Embedding					
Operation of Cryostats					
Spectrophotometric and related techniques (manual and automated equipment)					
Visible and UV spectrophotometry					
Nephelometry / Turbidimetry					
Densitometry					
Enzyme Linked immunosorbent assay and similar immunoassay techniques					
	Level and date	Level and date	Level and date	Level and date	Has reached level of competence required for independent practice
Isotopic Techniques					
Beta counters					
Gamma counters					

Radioimmunoassay					

Gel Phase and Electrophoretic Techniques

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Radial immunodiffusion					
Double diffusion					
Zonal Electrophoresis					
Immunoelectrophoresis					
Polyacrylamide gel electrophoresis					
Two-dimensional electrophoresis					
Isoelectric focusing					
Western blotting					
Immunofixation					
Capillary zone electrophoresis					
Gel Staining Methods					
Chromatographic Techniques					
Column chromatography					
Gel filtration					
Ion-exchange chromatography					
Affinity chromatography					

Cellular and Tissue Immunology

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Tissue culture / aseptic technique					
Cell and tissue storage					
Viability assays					
Cellular analysis including cell counting					
Flow cytometry					
Light/ Fluorescence Microscopy					

Molecular Biology

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Principles of DNA extraction and DNA analysis					
Restriction enzymes					
DNA probes					
Southern blotting					
Polymerase chain reaction					
Hybridisation techniques					
Others: please specify below					

B. SPECIFIC LABORATORY PROCEDURES

Cellular Immunology

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Leucocyte separation techniques • ***Lymphocytes*** • ***Monocytes*** • ***Neutrophils***					
Phagocyte functions • ***NBT*** • ***Flow cytometry***					
Cell proliferation assays and their applications					
Flow cytometry, principles, practise, applications					
Use of Flow cytometry for the diagnosis of Immunodeficiency					
Broad principles of Diagnosis and classification of lymphoid neoplasms					

MHC and Tissue Typing

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
HLA typing					
Cellular Assays					
DNA techniques					
Antibody screening					
Principles of Tissue matching for Renal , Solid Organ and BM transplantation					
Other techniques: Specify below					

Protein Analysis

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Immunoglobulins (G, A, M, D, E)					
Immunoglobulin fragments : Heavy chains, Light chains					
Cryoglobulins					
Methods for assessing specific antibody responses including limitations					
Paraproteins					
Beta 2 microglobulin					
Immunoglobulin subclasses					
Other proteins					
Precipitins (avian, fungal)					
Specific IgE					
Tryptase					
C-Reactive protein					

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Complement: ***C3, C4*** Other components					
Functional complement assays: ***CH50 \CH100*** ***AP50\AP100***					
C3 nephritic factor					
C1 inhibitor: Immunochemical and Functional					
Cytokine detection					

Autoantibody Analysis

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Rheumatoid factor					
Antinuclear antibodies					
Anti- ds.DNA antibodies					
Extractable nuclear antigens: Ro, La, Sm, RNP, Jo1, Scl 70					
Antineutrophil cytoplasmic antibodies :c-ANCA, p-ANCA Anti-MPO, PR3					
Smooth Muscle antibodies					
Glomerular basement membrane antibodies					
Mitochondrial antibodies					
Antibodies used to diagnose celiac disease					
Gastric parietal cell antibodies					
Intrinsic factor antibodies					
Thyroid autoantibodies					
Pancreatic islet cell antibodies					
Steroid cell antibodies (adrenal, ovarian, testis)					
	Level and date	Level and date	Level and date	Level and date	Has reached level of competence required for independent practice
Cardiolipin antibodies					
Liver autoantibodies					
• Neural auto-antibodies:					

Cerebellar antibodies (Yo, Hu), Ganglioside antibodies, • Glutamic acid decarboxylase antibodies, • Myelin associated glycoprotein antibodies					

Immunohistology

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Analysis by immunofluorescence techniques					
Principles of immunohistochemistry					
Histology of the immune system					
Renal disease					
Skin disease					

C. SECONDMENTS

Secondment site	Dates	Comments including reason for secondment

SECTION 3 INTERPRETATION OF IMMUNOLOGY TESTS

A Clinical Immunologist must be able to interpret laboratory results for communication to other clinical colleagues. The trainee is required to develop an understanding of how the immune system responds to different disease processes and how these changes can be used in the laboratory for monitoring and diagnosis. Essential to the interpretive process is an understanding of the assays performed and their limitations. The trainee should have a good knowledge of how patient reports are generated and when additional comments or telephone communication may be required. The immunologist should be to advise clinical colleagues on relevant tests for a given clinical situation. Sections below are provided for recording progress.

STATISTICAL METHODS USED FOR INTERPRETING LABORATORY DATA

Measures of central tendency	Date Covered	Comments
Parametric and non-parametric ways of comparing data		
Sensitivity and specificity		
prior and posterior probability		
Negative and Positive Predictive Value		
Receiver operated characteristic curves		
Understanding of the impact of prior and posterior probability		
Difference between performance of tests to screen for disease versus diagnosis		

Interpretation of Laboratory Data

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Autoantibody tests					

Interpretation of Laboratory Data

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Protein tests					

Interpretation of Laboratory Data

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Cellular tests					

Interpretation of Laboratory Data

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Allergy tests					

INTERPRETATION OF LABORATORY DATA

Laboratory Investigations by Disease

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Immunodeficiency: • ***Antibody deficiency*** • ***Phagocyte deficiency*** • ***Defective Cell-mediated immunity*** • ***Complement deficiency***					

Laboratory Investigations by Disease

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
• ***Systemic Autoimmunity:*** • ***Systemic lupus erythematosus*** • ***Rheumatoid arthritis*** • ***Antiphospholipid syndrome*** • ***Scleroderma*** • ***Sjögrens syndrome*** • ***Systemic vasculitis*** • ***Seronegative spondyloarthropathies*** • ***Dermatomyositis*** • ***Overlap syndromes***					

	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Level of competence attained and date	Has reached level of competence required for independent practice
Allergy: • ***Food allergy*** • ***Inhalant allergy*** • ***Drug allergy*** • ***Skin prick testing*** • Patch testing • ***Heaf Test*** • ***Anaphylaxis***					
Lymphoproliferative Disease					
Myelomatosis					

SECTION 4 - RESEARCH and DEVELOPMENT

A. The Scientific Literature	**Dates**	**Comments**

Journals

Multidisciplinary
Immunological - Scientific
Immunological - Medical

Library facilities

Medline and other Databases:

Searching
Clinical databases
Genetic Databases (eg.OMIM)

B. Research Technique

Ethical issues and approval

Hypothesis

Background

Aims and Objectives

Methods

Recording Results

Handling the data

Statistics

Presentation

Preparing a poster

Preparing a talk

Powerpoint

Routes to publication

Writing a paper

Refereeing

C. The Funding of Research

NHS research and development

Charities - project grants

Government funding

A Research Grant

Refereeing process

SECTION 5 - MEETINGS/ SEMINARS ATTENDED

DATE	DETAILS

SECTION 6 - PRESENTATIONS GIVEN

DATE	DETAILS