

A Framework of Competencies
for the level 3 Training
Special Interest Module in Paediatric
Respiratory Medicine

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Section 1 Introduction

Who is this framework for?

It is for doctors at Level 3 in their General Paediatric Training who wish to work towards an expertise in Paediatric Respiratory medicine during Level 3 training. It is also there to guide tutors and educational supervisors.

Why do I need it?

This book gives you and your tutors guidance about the competences you need to cover in addition to the Framework of Competences for Level 3 Training in General Paediatrics. It gives you a clear picture of what you have to achieve by the end of this module of training in order to have expertise in this area.

How do I use the framework?

You can sit down with the framework on your own and use it to help you identify areas of practice that you need to work on and those areas in which you feel fairly confident. You can talk to your tutor about the balance of your experiences and look for ways to ensure you cover all areas you need to. It should be used by Schools and Educational Supervisors to ensure that a programme of training is developed in Level 3 which will allow the trainees to achieve these competences. In determining this programme, liaison with the relevant CSAC is important. In the appendix, there is guidance for training in the module which the programme must adhere to.

Progression

Following completion of Level 3 training and the module, the CCT holder should be competent to take up a post as a General Paediatrician or a General Paediatrician with a Special Expertise in this area. It is expected that there will be a requirement in paediatric services for consultants with special expertise provided by the module. Such posts will usually form part of a Regional Specialty Network including working with accredited sub-specialties in this area.

A note about the format of this document

This framework sets out the additional competences which should be achieved by the end of Level 3 training. The trainee also has to achieve all the competences in the Level 3 General Paediatric Framework.

Assessment

The RCPCH Assessment Strategy (GMC approved) for Level 3 Training will be used. Trainees working with their educational supervisors should ensure that the Assessment Strategy is tailored to cover the area of Special Expertise as well as General Paediatrics and that learning and assessment are well documented within the e-portfolio.

Pilot

This special expertise module is being introduced as a pilot. The College will be seeking feedback from the Trainees, Educational Supervisors, Schools of Paediatrics, CSACs and potentially in future from Employing NHS Trusts and Regional Networks. This will look at:

1. Need for training in this module
2. Addition or omission of competences unique to the module
3. Feasibility of delivering the module within Level 3 General Paediatric training
4. Usefulness of the standards for training for the module.
5. Outcome of trainees undertaking the module
6. Need for revision of the competences
7. Need for further assessment

Section 2 General Competencies

Knowledge and understanding

- Understand the embryology and development of the respiratory tract
- Understand the normal process of ventilation and gas exchange
- Understand normal control of breathing
- Know the underlying reasons for respiratory failure, and how respiratory failure can impact on other body systems
- Know the normal host defence mechanisms that protect against infection in the respiratory system, including innate and adaptive immune responses, and the common abnormalities in these mechanisms
- Know how the respiratory system changes with age in the growing child and adolescent
- Be able to interpret common abnormalities in blood gas analysis
- Understand the immunology of allergic reactions

Values and Attitudes

- Be able to work closely with colleagues in tertiary services and members of the multidisciplinary team using clear communication with children and their carers
- Appreciate the ethical issues surrounding the care and support of children and young people with complex and severe disabilities
- Be aware of the emotional impact on children and their families of having significant respiratory impairment, including those dependent on technology and those living with a chronic illness

Leadership and Management

- Be able to lead local multidisciplinary teams in the coordination of care of children and young people with different types of respiratory problems
- As a paediatrician with a special interest, have a particular appreciation of the importance of liaison with both local paediatric services and specialist medical services elsewhere
- Be able to manage and support networks of care between local and specialist services

Communication skills

- Be able to sensitively and effectively communicate with families of children and young people with respiratory problems
- Appreciate the particular communication and relationship skills required for the ongoing management of patients within a clinical network

Section 3 Condition Specific Competencies

Allergy

- Be able to take an allergy history and differentiate different types of allergy and food intolerance
- Know when to order appropriate investigations
- Be able to interpret allergy investigations, i.e. skinprick tests & specific IgE testing
- Understand when to perform a food challenge and be able to interpret it
- Be able to advise on allergy avoidance and the use of adrenaline autoinjectors
- Know the appropriate treatments for atopic eczema and allergic rhinitis

Asthma

- Understand the pathophysiology of asthma
- Know the BTS /SIGN asthma guidelines including recent updates and understand the outpatient management of asthma
- Understand the different wheezing phenotypes in young children and be able to advise on appropriate treatment
- Know the basic pharmacology of common asthma medications, and understand the step wise approach of therapy at different ages
- Know and be able to demonstrate different inhaler devices
- Be able to advise on non-pharmacological strategies including allergen avoidance
- Know the importance of written information for families, and be able to formulate asthma plans, including liaison with specialist nurses and other agencies e.g. schools
- Be able to manage acute severe asthma including the need for HDU or PICU when necessary
- Be able to manage, and where necessary refer, children and young people with difficult to treat asthma to other services
- Understand dysfunctional breathing and how psychosocial aspects can influence symptoms

Children with complex disability

- Know the range of respiratory problems associated with children who have complex disabilities
- Understand how to appropriately investigate children with complex disabilities for respiratory complications
- Be able to produce effective strategies for these children to improve their quality of life, including close liaison with their families, other members of the multi-professional team and other agencies
- Understand the principles of palliative care and symptom control in children with complex disabilities, especially with respect to respiratory problems

Chronic lung disease of prematurity

- Understand the pathophysiology of chronic lung disease of prematurity
- Be able to manage the common pulmonary sequelae of prematurity
- Be able to manage oxygen therapy in premature infants, including the use of oximetry studies and weaning protocols

Congenital lung and airway problems

- Know the range of congenital lung and airway problems and their presentation at different ages
- Know the associations between abnormalities in the respiratory tract and other non-pulmonary problems
- Be able to manage the initial care of children who have common airway & lung congenital abnormalities
- Be able to manage the long term follow up of children and young people who have had congenital lung and airway problems, including knowing their long term complications

Cystic fibrosis

- Understand the basic molecular defect, genetics and pathophysiology
- Know the common presentations and be familiar with the UK screening protocol
- Understand the outpatient multidisciplinary management of children and young people with cystic fibrosis
- Be able to manage a respiratory exacerbation, including the indications for oral and intravenous antibiotics, and other respiratory treatments
- Know how to diagnose allergic bronchopulmonary aspergillosis and how to manage an exacerbation
- Understand different respiratory physiotherapy techniques
- Know the antibiotic management of the common airway organisms
- Understand the management of the other common issues, including pancreatic enzyme replacement, monitoring of growth, microbiological surveillance, diabetic screening, vitamin supplementation, radiological surveillance
- Understand the practicalities of managing a CF clinic, the annual review process and the requirements for data collection
- Understand the evolving funding mechanisms

Primary ciliary dyskinesia

- Understand the basic pathophysiology
- Know the common symptomatology and presentation of PCD
- Know the diagnostic tests available, and the indications for testing
- Know the principles of on-going management

Respiratory failure and long term ventilation

- Know the presentations of respiratory failure at different ages and the indications for long term ventilation
- Know the different interfaces available for long term ventilation
- Be aware of different ventilators and have some knowledge of how they work and how settings can be altered.
- Understand the management of tracheotomies

- Understand the process of safe discharge of children dependent on technology, and be involved in at least one child's discharge to home
- Understand the ethical complexities surrounding the provision of long term ventilation for children with very severe disability

Respiratory tract infection

- Be able to manage viral and bacterial lower respiratory tract infections
- Be able to manage children and young people with chronic cough
- Know when to refer children with severe infections for respiratory support
- Understand the management of parapneumonic effusions
- Be able to manage children with recurrent respiratory infection, including appropriate investigation for underlying conditions
- Know the principles of respiratory management of children and young people with immunodeficiency or other underlying predispositions to infection, e.g. bronchiectasis

Sleep disordered breathing

- Understand the basic physiology of sleep and the impact of disordered sleep
- Know the indications for investigation of sleep disordered breathing
- Be able to interpret oximetry and capnography sleep studies, be aware of the indications for polysomnography, and know how these tests are performed
- Be able to diagnose obstructive sleep apnoea, including appropriate history taking, examination and investigation, and be able to manage it in conjunction with referral to otolaryngology and/or respiratory support
- Be aware of the other types of sleep disordered breathing

Tuberculosis

- Know the varied presentation of pulmonary tuberculosis at different ages
- Be able to initiate appropriate investigation for a child or young person with suspected tuberculosis
- Know appropriate treatment strategies
- Understand screening strategies and contact tracing protocols

Section 4 Practical procedures and investigations

Lung function testing

- Understand the physiological principles of spirometry in children and young people, including the use of reference data
- Be able to perform spirometry with children and young people
- Know how to interpret spirometry, including flow-volume loops, and bronchodilator response, with the ability to detect the common pathological abnormalities
- Be aware of the process of quality assurance of spirometry, and know its limitations as a diagnostic test
- Be aware of the other types of lung function testing in children and young people, and know when these are indicated

Inhaler devices and delivery

- Know the range of inhaler devices including their relative advantages and their appropriateness for different ages
- Be able to demonstrate inhaler technique to parents, children and young people
- Know the range of nebuliser devices and the differences between them
- Be able to train other staff to teach inhaler technique

Imaging

- Be able to interpret chest radiographs
- Understand the use of chest ultrasound, chest fluoroscopy, upper gastrointestinal contrast studies and bronchography
- Know the indications for thoracic CT and be able to identify the most common abnormalities

Percutaneous long line insertion

- Be able to insert percutaneous long lines in children and young people, including the use of safe conscious sedation

Bronchoscopy

- Know the indications for flexible and rigid bronchoscopy
- Understand the process of flexible bronchoscopy, and be able to interpret results from bronchoalveolar lavage fluid (i.e. cytology and microbiology)

Home oxygen

- Understand the process of home oxygen provision
- Be involved with at least one provision of home oxygen therapy

Appendix 1

Paediatric Guidance Checklist

These standards were derived to assist in the assessment of the paediatric training standards in your deanery

Speciality: Special Interest Module in Paediatric Respiratory Medicine

The Programme (which may consist of several posts) should provide

1. Supervision	√
1.1 An educational supervisor who is either a Consultant Respiratory Paediatrician or a Consultant Paediatrician with an interest in Respiratory Medicine, and who is trained in assessment and appraisal	
1.2 Evidence that the assessment strategy is being delivered	
1.3 Trainers receive appropriate training on the delivery of the assessment strategy	
1.4 Clinical supervision that ensures patient safety	
2. Other Personnel	
2.1 A minimum of 2 consultants in Paediatric Respiratory Medicine to support and supervise and/or a consistent General Paediatrician with expertise working as part of a Regional Network	
2.2 More than one ST4-8 in the paediatric department	
2.3 MDT consisting of a minimum of a specialist paediatric clinical nurse, physiotherapist and dietician	
3. Service requirements and facilities	
3.1 <i>Specialty specific requirements of subspecialty department:</i> Flexible bronchoscopy, dedicated spirometry and/or more detailed lung function, sleep investigation	
3.2 <i>Specialty specific requirements of related clinical departments that are involved in delivery of the curriculum:</i> Regional Network arrangements/shared care, PICU.	
3.3 <i>Specialty specific requirements of service departments relevant to delivery of curriculum (e.g. investigation departments, PAMs departments, surgery or anaesthesia):</i> Specialist paediatric anaesthesia	
3.4 <i>Specialty specific requirements of clinical networks:</i> Functioning regional network with outreach clinics	
4. Educational activities and training	
4.1 <i>Specialty specific clinical exposure required to provide sufficient learning opportunities (NB if giving workload data ensure it is explicit whether this is number per annum or number trainee would be expected to be exposed to over entire programme):</i> Regular participation in specialist and non-specialist respiratory clinics	
4.2 <i>Specialty specific requirements for structured training opportunities to include courses:</i>	

Attend recognised paediatric respiratory conferences and update courses	
4.3 Specialty specific requirements for other experiential learning (excluding clinics and ward rounds): Dermatology, immunology and otolaryngology clinics. Work with specialist nurses in allergy, paediatric respiratory, cystic fibrosis, sleep and long term ventilation	

5. Working patterns	
5.1 Safe cover arrangements for paediatric department out of hours in line with RCPCH guidance	
5.2 Evidence of compliance with existing employment rules to working time	
5.3 Working intensity and pattern that is appropriate for learning	
5.4 Access to sub-specialty training time which allows achievement of the competences throughout the programme	
5.5 This post forms part of a complete paediatric training programme which provides a minimum of 5 years of acute clinical experience, including out of hours duties	

6. Specific Post requirements	
6.1 A trainee will require at least eighteen months of paediatric respiratory experience of which: <ul style="list-style-type: none"> • ideally 12 months will be spent in a regional paediatric respiratory centre • at least 6 months will be spent in a post in a district general hospital providing appropriate experience 	

7. Enabled to learn new skills, necessary skills and curriculum coverage (speciality specific) <i>This section can be used to highlight marker conditions to which trainee should be exposed or the numbers of cases/procedures that trainee will be expected to see/do. Ensure that it is clear whether any numbers are for whole training programme or per annum</i>	
7.1 Specialty specific marker conditions trainee should be exposed to: Training should be across the spectrum of paediatric respiratory problems, with significant involvement in individual patients. Examples of involvement should include: new diagnosis of cystic fibrosis, management of parapneumonic effusion, initiation of long term respiratory support, discharge of child with complex needs requiring long term ventilatory support, child with immunodeficiency and respiratory involvement, child with significant airway disorder, child with neuromuscular disease and respiratory involvement, difficult to treat asthma.	
7.2 Specialty specific skills/procedures trainee needs to complete: Long line insertion, interpretation of gas exchange sleep studies, familiarity with portable ventilators and respiratory support interfaces, familiarity with inhaler devices & nebulisers.	

8. Access to clinics and ward rounds and long term care of patients	
8.1 Specialty specific numbers and types of clinics expected to attend (including outreach clinics): Primary care referrals with common problems Specialist centre and local cystic fibrosis clinics Specialist respiratory clinics, differentiated into disease sub-specialities where	

available	
8.2 Specialty specific combined clinics expected to attend: Cystic fibrosis shared care clinics	
8.3 Specialty specific ward rounds consultant led and independent per week: Should attend ward rounds in PICU Should lead own ward rounds on wards	
8.4 Specialty specific involvement in transitional care: Should attend transition clinics in cystic fibrosis	
9. Meetings	
9.1 Specialty specific number and types of MDT meetings expected to be exposed to: Attend and participate in weekly multi-disciplinary team meetings	
9.2 Specialty specific multi-professional meetings expected to be exposed to: Attend regional respiratory interest groups Attendance and membership of British Paediatric Respiratory Society	
9.3 Specialty specific other meetings: National respiratory meetings (e.g. British Thoracic Society winter meeting, Royal Society of Medicine Cystic Fibrosis meeting)	
10. Clinical audit	
10.1 Evidence of trainee's participation in clinical governance (at least 1 full audit/year and attendance at critical incident meetings)	
10.2 Evidence of trainees participation in clinical guideline development	
11. Teaching appraising and assessing	
11.1 Opportunities for formal and informal teaching	
11.2 For senior trainees: opportunities for involvement of assessment of others	
11.3 For senior trainees: opportunity to be involved in the appraisal of others	
11.4 Assistance in medical student exams or teaching programmes	
11.5 Take the lead role locally in the education and training of other paediatricians, nursing and other staff in the management of common respiratory problems	
12. Research	
12.1 Provide formal teaching on research ethics and research methodology	
12.2 Provide opportunities to be involved in clinical research	
13. Management	
13.1 Provide formal experience in departmental and Trust management	
13.2 Provide experience in the management of regional networks	