

Paediatric Respiratory Medicine

Sub-specialty Syllabus

Version 2

Approved by the GMC for implementation from 1 September 2021

This document outlines the syllabus to be used by doctors completing Paediatric Respiratory Medicine training in the United Kingdom (UK). It accompanies the RCPCH Progress curriculum and Assessment Strategy.

This is Version 2. As the document is updated, version numbers will be changed, and content changes noted in the table below.

Version number	Date issued	Summary of changes
Version 2	September 2021	Document reviewed as part of the Shape of Paediatrics Training review. 'Using the Syllabus with ePortfolio' (page 5) updated.

Introduction



This syllabus supports the completion of the RCPCH Progress curriculum and should be used with the curriculum document and Assessment Strategy.

The purpose of the curriculum is to train doctors to acquire a detailed knowledge and understanding of health and illness in babies, children and young people. The curriculum provides a framework for training, articulating the standard required to work at Consultant level and at key progression points during their training, as well as encouraging the pursuit of excellence in all aspects of clinical and wider practice.

The curriculum comprises of Learning Outcomes which specify the standard that trainees must demonstrate as they progress through training and ultimately attain a Certificate of Completion of Training (CCT). The syllabi supports the curriculum by providing further instructions and guidance as to how the Learning Outcomes can be achieved and demonstrated.

Using the Syllabus

Paediatric trainees are required to demonstrate achievement of generic and sub-specialty or General Paediatric Learning Outcomes throughout their training period.

For all Level 1 and Level 2 trainees, there are 11 generic paediatric Learning Outcomes for each level. At Level 3, there are a further 11 generic paediatric Learning Outcomes for all trainees and several additional Learning Outcomes in either General Paediatrics or the sub-specialty to which the trainee has been appointed.

This syllabus contains 5 interlinked elements, as outlined in Figure 1 which illustrates how each element elaborates on the previous one.

Elements of the Syllabus

The **Introductory Statement** sets the scene for what makes a Respiratory Paediatrician.

The **Learning Outcomes** are stated at the beginning of each section. These are the outcomes which the trainee must demonstrate they have met to be awarded their Certificate of Completion of Training (CCT) in Paediatrics. Progress towards achievement of the Learning Outcomes is reviewed annually at the Annual Review of Competence Progression (ARCP).

Each Learning Outcome is mapped to the General Medical Council (GMC) Generic Professional Capabilities framework. Each trainee must achieve all the Generic Professional Capabilities to meet the minimum regulatory standards for satisfactory completion of training.

The **Key Capabilities** are mandatory capabilities which must be evidenced by the trainee, in their ePortfolio, to meet the Learning Outcome. Key Capabilities are therefore also mapped to the GMC Generic Professional Capabilities framework.

The **Illustrations** are examples of evidence and give the range of clinical contexts that the trainee may use to support their achievement of the Key Capabilities. These are intended to provide a prompt to the trainee and trainer as to how the overall outcomes might be achieved. They are not intended to be exhaustive, and excellent trainees may produce a broader portfolio or include evidence that demonstrates deeper learning. It is not expected that trainees provide ePortfolio evidence against every individual illustration (or a set quota); the aim of assessment is to provide evidence against every Key Capability.

The **Assessment Grid** indicates suggested assessment methods, which may be used to demonstrate the Key Capabilities. Trainees may use differing assessment methods to demonstrate each capability (as indicated in each Assessment Grid), but there must be evidence of the trainee having achieved all Key Capabilities.

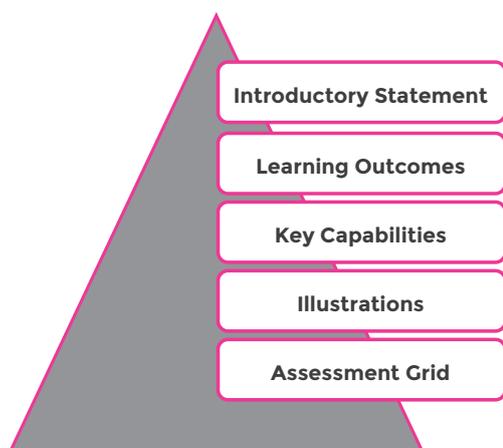


Figure 1: The 5 elements of the syllabus

Using the Syllabus with ePortfolio

The ePortfolio is used to demonstrate a trainee's progression using assessments, development logs and reflections. Events should be linked to the Progress curriculum specifically against the key capabilities at the appropriate level.

Further guidance on using the ePortfolio is available on our website: <https://www.rcpch.ac.uk/resources/rcpch-eportfolio-kaizen-guidance-trainees>.



Paediatric Respiratory Medicine Introductory Statement

Introductory Statement

Respiratory Paediatricians are doctors who have detailed knowledge and understanding of the respiratory system in children and young people. They are skilled in providing holistic care to manage respiratory health and ill-health in babies, children and young people. At a tertiary level, they have highly specialised skills to manage complex acute and chronic conditions, including difficult-to-treat asthma, cystic fibrosis and rare lung disease. They have expertise in technical skills, including flexible bronchoscopy and the care of technology-dependent children and young people.

Respiratory Paediatricians deal with challenging problems of diagnostic and therapeutic uncertainty in their field of medicine. In doing so, they interact with many medical and surgical specialties to improve outcomes in children and young people with lung disease in acute and chronic settings. They have a significant interest in patient responsibility and hold clinics in a variety of settings, including sharing care within clinical care networks. They advocate on public health issues at the individual, local and national level to promote lung health.

Sub-specialty Learning Outcomes

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Sub-specialty Learning Outcomes		GMC Generic Professional Capabilities
1.	Demonstrates proficiency in providing holistic care to manage respiratory health and ill-health in babies, children and young people, including the promotion of respiratory health.	GPC 1, 3, 5
2.	Demonstrates tertiary level specialist skills to manage complex acute and chronic conditions, including difficult-to-treat asthma, cystic fibrosis (CF) and rare lung disease.	GPC 3, 5
3.	Demonstrates expertise in technical skills, including flexible bronchoscopy and the care of technology-dependent children and young people.	GPC 3, 6

Sub-specialty Learning Outcome 1

Demonstrates proficiency in providing holistic care to manage respiratory health and ill-health in babies, children and young people, including the promotion of respiratory health.	GPC 1, 3, 5
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Key Capabilities

Demonstrates proficiency in the diagnosis and management of asthma and other wheezing conditions.	GPC 1, 3, 4, 5
Demonstrates proficiency in the assessment and management of cough, and acute and recurrent respiratory infections.	GPC 1, 4, 5

Illustrations

1.	Recognises the aetiology, pathogenesis and clinical presentation of asthma.
2.	Demonstrates proficiency in the evaluation of a child and young person with a history of wheezing.
3.	Demonstrates and applies knowledge of the differential diagnosis of wheezing.
4.	Designs an appropriate treatment plan for a child and young person with asthma, including the application of knowledge of aerosol therapies, and discusses this with the family.
5.	Demonstrates a sound knowledge of the pharmacology of both common and unusual asthma therapies.
6.	Discusses the use of different forms of inhaled medications with parents and demonstrates their proper use.
7.	Demonstrates knowledge of the non-drug management of asthma (e.g. allergen, smoking and pollutant avoidance and managing exercise).
8.	Assesses and manages difficult-to-treat asthma.
9.	Recognises the importance of treatment adherence and drug side effects.
10.	Investigates and manages non-asthmatic wheezing.
11.	Identifies factors that may complicate asthma, such as dysfunctional breathing and psychosocial issues.
12.	Recognises the epidemiology of common and uncommon respiratory infections.

13.	Recognises the range of pathogens that cause respiratory illness and the relevant laboratory testing.
14.	Chooses appropriate antibiotic, antiviral and antifungal therapy for a range of respiratory infections.
15.	Demonstrates knowledge about immunisations against respiratory pathogens and their epidemiological impact.
16.	Manages complex pneumonias, including those with empyema and lung abscess.
17.	Performs pleural taps and the insertion of chest drains.
18.	Assesses, investigates and manages infection due to bronchiectasis.
19.	Recognises the increased risks of respiratory infection in vulnerable children and young people, such as those with immunodeficiency, bronchiectasis or neurodisability.
20.	Assesses, investigates and manages the child and young person presenting with chronic cough.

Sub-specialty Learning Outcome 2

Demonstrates tertiary level specialist skills to manage complex acute and chronic conditions, including difficult-to-treat asthma, cystic fibrosis (CF) and rare lung disease.	GPC 3, 5
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Key Capabilities

Manages CF and a CF service.	GPC 3, 5
Diagnoses and manages respiratory allergies and complex respiratory infections, including tuberculosis (TB).	GPC 5, 6
Assesses and diagnoses sleep-related breathing disorders and their management, including the use of ventilatory support.	GPC 3, 5, 6
Assesses and diagnoses chronic and rare respiratory disease (e.g. chronic lung disease of prematurity, interstitial lung disease and airway disorders).	GPC 3
Supports clinicians requesting an acute tertiary respiratory opinion in addition to managing and appropriately prioritising the inpatient tertiary respiratory workload.	GPC 5, 6

Illustrations

1.	Recognises the genetics and pathophysiology of CF, including the potential implications of mutation-specific therapies.
2.	Demonstrates knowledge of newborn screening, including equivocal results and the investigation of those who present clinically.
3.	Counsels families following screening or clinical diagnosis and formulates a treatment plan.
4.	Manages a CF exacerbation.
5.	Demonstrates expertise in the insertion of percutaneous intravenous central lines and in the use of gripper needles to access portacath sites.
6.	Undertakes long-term outpatient management of the respiratory conditions.
7.	Applies knowledge of the common drug therapies used in CF, including their pharmacology, interactions and side effects.

8.	Performs different modes of airway clearance.
9.	Demonstrates knowledge of the common and emerging pathogens and cross-infection control procedures.
10.	Recognises the conduct of annual reviews and the multidisciplinary nature of CF care.
11.	Works effectively with colleagues in dietetics, physiotherapy, nursing, pharmacy and psychology in the management of those with CF.
12.	Manages non-respiratory features of CF, such as bowel obstruction, liver disease and diabetes.
13.	Recognises and manages family and psychosocial problems, such as procedural anxiety, treatment adherence problems and differing expectations around therapy.
14.	Recognises the issues associated with advanced CF lung disease, including transplant referral.
15.	Demonstrates knowledge of the process of transition to adult CF care.
16.	Demonstrates knowledge of the aetiology and natural history of respiratory allergy and associated atopic conditions.
17.	Demonstrates a sound knowledge of the relevant investigations and their interpretation in respiratory allergy.
18.	Manages respiratory allergy and its associated atopic conditions.
19.	Demonstrates knowledge of the epidemiology of TB.
20.	Recognises the differences between primary and post-primary TB and their infectivity.
21.	Demonstrates knowledge of extra-pulmonary TB.
22.	Initiates diagnostic tests for TB infection and disease, and recognises their limitations.
23.	Demonstrates knowledge of the relevant current management of TB.
24.	Demonstrates knowledge of the physiology of sleep at different ages, including sleep stages and their effect on cardiorespiratory status.
25.	Takes a sleep history and assesses the need for further investigation.
26.	Demonstrates knowledge of the clinical conditions that disturb sleep, particularly those that increase the risks for sleep-disordered breathing.
27.	Demonstrates knowledge of the variable presentation of sleep-disordered breathing at different ages and the impact this has on daytime function.
28.	Demonstrates knowledge of the roles of the different available investigations for sleep-disordered breathing.
29.	Demonstrates knowledge of the different treatment options for sleep-disordered breathing.

30.	Recognises the pathophysiology of chronic respiratory failure due to lung disease, airway problems, respiratory control disorders and neurological conditions.
31.	Orders and interprets tests of gas exchange and ventilatory function in the diagnosis and monitoring of children and young people on respiratory support.
32.	Demonstrates knowledge of different modes of breathing support, invasive and non-invasive, and the indications for each.
33.	Recognises the use of various interfaces for non-invasive support.
34.	Demonstrates knowledge of the principles and practices of tracheostomy care.
35.	Replaces a tracheostomy tube in an emergency.
36.	Plans the long-term care of a child and young person with ventilator dependency.
37.	Recognises and manages family and psychosocial problems and differing expectations of treatment for children and young people on respiratory support.
38.	Works effectively with colleagues in dietetics, physiotherapy, nursing and psychology in the management of children and young people on long-term ventilation.
39.	Recognises various presentations of rare or unusual lung disease and plans and carries out appropriate investigations (e.g. immunological tests and special radiological procedures) and arranges lung biopsy.
40.	Plans the management of a child and young person with interstitial lung disease.
41.	Demonstrates knowledge of lung development to inform the diagnosis of congenital lung malformations.
42.	Plans appropriate investigations of congenital lung lesions.
43.	Demonstrates knowledge of the different therapeutic options for congenital abnormalities of the lungs and airways.
44.	Demonstrates knowledge of the aetiology, pathogenesis and evolution of chronic lung disease of prematurity (CLDP).
45.	Demonstrates a working knowledge of the relevant co-morbidities that affect medium and long-term outcomes of CLDP.
46.	Assesses the need for and demonstrates the use of home oxygen therapy.
47.	Plans the discharge of a baby returning home on oxygen or on long-term ventilator support.
48.	Recognises unusual features of acute presentations (e.g. persisting clinical bronchiolitis, complicated pneumonia and persistent hypoxia).
49.	Plans and explains to families the appropriate investigations and treatment for unusual presentations of respiratory disease.
50.	Initiates non-invasive ventilator support for respiratory failure.
51.	Applies the principles of transporting patients with respiratory compromise from secondary to tertiary care.

52.	Recognises the presentations, investigation and management of primary ciliary dyskinesia.
53.	Demonstrates knowledge of the clinical presentation of pulmonary hypertension and discusses the appropriate investigation and management.
54.	Demonstrates knowledge of the aetiology and pathogenesis, investigation and management of a child and young person suspected of having obliterative bronchiolitis.
55.	Interprets an impedance/pH study.

Sub-specialty Learning Outcome 3

Demonstrates expertise in technical skills, including flexible bronchoscopy and the care of technology-dependent children and young people.	GPC 3, 6
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Key Capabilities

Demonstrates the role and conduct of specialist respiratory investigations, including flexible bronchoscopy, respiratory function testing and imaging.	GPC 3, 5, 6
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Illustrations

1.	<p>Applies knowledge on the following subjects dealing with lung function measurement in children and young people:</p> <ul style="list-style-type: none"> • Developmental lung physiology • Flow-volume curves • Measurement of lung volumes • Principles of bronchial lability • Ventilation • Perfusion • Diffusion • Gas exchange
2.	Selects which pulmonary function test(s) are most likely to be useful in different conditions for different ages, and reports and interprets the results.
3.	Demonstrates knowledge and understanding of the correct selection and use of available reference data.
4.	Demonstrates knowledge of the diagnostic accuracy of spirometry for common disorders and the repeatability and limitations of lung function measurements.
5.	Demonstrates knowledge of the role, conduct and interpretation of exercise testing and other methods of bronchoprovocation testing in lung function assessment.
6.	Demonstrates knowledge of the requirements for quality control, quality assurance and risk management in lung function laboratories.
7.	Recognises the impact of different conditions on respiratory function (eg cerebral palsy, scoliosis, cardiac disease and neuromuscular disease).
8.	Recognises the significance and limitations of exhaled nitric oxide measurement.

9.	Performs nitric oxide measurements.
10.	Assesses a child and young person's fitness to fly.
11.	Demonstrates knowledge of the different types of sleep investigations and their appropriate uses.
12.	Recognises the indications for and analysis and interpretation of pulse oximetry and transcutaneous carbon dioxide studies.
13.	Sets up and interprets a cardiorespiratory (polygraphy) study.
14.	Orders appropriate imaging investigations for the child and young person presenting with respiratory disease, including chest x-ray (CXR), ultrasound, computerised tomography (CT) scan, videofluoroscopy, angiography and magnetic resonance imaging (MRI).
15.	Recognises the potential adverse effects of imaging.
16.	Interprets radiological investigations.
17.	Applies knowledge of the upper and lower airways to ensure proficiency in bronchoscopy and the ability to identify abnormalities.
18.	Demonstrates proficiency in the skills of flexible bronchoscopy, including bronchoalveolar lavage and bronchial brushings.
19.	Demonstrates knowledge of the role of flexible bronchoscopy in the investigation of respiratory disease, including the indications, contraindications and risks.
20.	Selects alternatives to flexible bronchoscopy, including rigid bronchoscopy and non-bronchoscopic lavage.

Assessment Grid

This table suggests assessment tools which may be used to assess the Key Capabilities for these Learning Outcomes. This is not an exhaustive list, and trainees are permitted to use other methods within the RCPCH Assessment Strategy to demonstrate achievement of the Learning Outcome, where they can demonstrate these are suitable.

Key Capabilities	Assessment / Supervised Learning Event suggestions									
	Paediatric Mini Clinical Evaluation (ePaed Mini-CEX)	Paediatric Case-based Discussion(ePaed Cbd)	Directly Observed Procedure / Assessment of Performance (DOP/ AOP)	Acute Care Assessment Tool (ACAT)	Discussion of Correspondence (DOC)	Clinical Leadership Assessment Skills (LEADER)	Handover Assessment Tool (HAT)	Paediatric Multi Source Feedback (ePaed MSF)	Paediatric Carers for Children Feedback (Paed CCF)	Other
Demonstrates proficiency in the diagnosis and management of asthma and other wheezing conditions.	✓	✓	✓	✓	✓	✓		✓		
Demonstrates proficiency in the assessment and management of cough, and acute and recurrent respiratory infections.	✓	✓		✓	✓	✓	✓	✓		
Manages CF and a CF service.	✓	✓		✓	✓	✓	✓	✓		
Diagnoses and manages respiratory allergies and complex respiratory infections, including tuberculosis (TB).	✓	✓		✓	✓	✓	✓	✓		
Assesses and diagnoses sleep-related breathing disorders and their management, including the use of ventilatory support.	✓	✓	✓	✓	✓	✓	✓	✓		
Assesses and diagnoses chronic and rare respiratory disease (e.g. chronic lung disease of prematurity, interstitial lung disease and airway disorders).	✓	✓		✓	✓	✓	✓	✓		
Supports clinicians requesting an acute tertiary respiratory opinion in addition to managing and appropriately prioritising the inpatient tertiary respiratory workload.	✓	✓								
Demonstrates the role and conduct of specialist respiratory investigations, including flexible bronchoscopy, respiratory function testing and imaging.	✓	✓	✓	✓	✓		✓	✓		

