

ROYAL COLLEGE OF PAEDIATRICS AND CHILD HEALTH

Higher Specialist Training Syllabus

PAEDIATRIC RESPIRATORY MEDICINE

1. INTRODUCTION

This document describes the Tertiary Training Programme in Paediatric Respiratory Medicine (PRM). It is one of the subspecialist training programmes in Tertiary Care Paediatrics, defined by the Paediatric Section of the European Union of Medical Specialists (Union Europeenne des Medecines Specialistes = UEMS). It is expected that most paediatricians undertaking this training programme will practice within the framework of a specialised tertiary care unit.

In general terms, this training programme intends:

- to establish clearly defined standards of knowledge and skill required to practice PRM at a

tertiary care level;

- to fulfil the training requirement of the Royal College of Paediatrics and Child Health for

accreditation in Respiratory Medicine as a paediatric speciality.

- to fulfil the training requirement for accreditation in Paediatric Respiratory Medicine with the

European Board of Paediatrics and European Union of Medical Specialists.

- to thereby improve the level of care for all children respiratory disorders and in particular

those with complex or chronic disease;

This document defines the aims of the training, the content and the duration of the training programme, the basic requirements to enter such a programme, and includes a brief description of the specifications required for training centres and tutors.

2. AIMS OF TRAINING

2.1 Content of training

The Paediatrician training for accreditation in Paediatric Respiratory Medicine should acquire:

- detailed knowledge of the development, structure and function of the respiratory tract in infants, children and adolescents;

in-depth knowledge of the aetiology and the pathogenesis of all acute and chronic diseases of the respiratory system in infants, children and adolescents;

knowledge of and skill in the various specialised diagnostic methods for examination of the respiratory tract in paediatric patients

knowledge of skill in the various specialised therapeutic methods for treating respiratory disorders in childhood.

knowledge of the prevalence and the epidemiology of paediatric respiratory disorders, including the long-term prognosis of chronic diseases into adulthood;

complementary expertise in the fields of infectious diseases, allergy and clinical immunology, including knowledge of and skill in relevant diagnostic and therapeutic methods;

knowledge of the organisational aspects of care for chronic respiratory diseases, including rehabilitation programmes, as well as relevant psychosocial aspects;

understanding of the legal aspects of paediatric respiratory disease;

teaching skills relevant to the speciality;

knowledge of and practical experience in planning, conducting, evaluating and publishing research projects in the field PRM,

understanding of the ethical aspects of research in children.

2.2 **Purpose of Training**

A Consultant accredited in Paediatric Respiratory Medicine should be:

- competent in providing clinical care within the framework of a specialised tertiary care unit, division, department, or hospital. This clinical care should be provided both in the inpatient and outpatient setting and should include the application of specialised diagnostic and therapeutic methods.
- able to assess lung function in children, including bronchoprovocation testing, as well as long-term monitoring of breathing. She/he should have acquired considerable practical skill in the technique of flexible bronchoscopy, and expertise in the interpretation of diagnostic tests pertaining to the imaging of the lung, allergy skin testing, analysis of bronchoalveolar lavage fluid, as well as relevant diagnostic tests in the fields of clinical immunology and infectious disease.
- proficient in the clinical management of all acute and chronic paediatric respiratory disorders, especially in the long-term management of patients with bronchial asthma, cystic fibrosis, and other chronic inflammatory lung diseases.
- experienced in the long-term care for technology-dependent children, e.g. those who are oxygen or ventilator dependent
- competent to provide consultation and technical assistance to other paediatric specialists.
- able to co-operate with chest specialists caring for adults, both in routine clinical work and in relevant research, in order to ensure a continuum of care from childhood to adulthood for patients with chronic respiratory disorders.
- able to participate in the organisation of tertiary respiratory specialities.
- able to participate in regular teaching activities and have undertaken a programme of relevant research leading to peer review publication,

3. **TRAINING PROGRAMME**

3.1 **Structure of the programme**

The training programme is structured in **modules**. Each module contains training in a specific area, expertise, or skill. Some modules are defined by content and duration, others by content only. Simultaneous training in different modules is possible. A complete training can consist of modules acquired in several different training centres. The number of centres contributing to one trainee's programme, however, should not exceed a maximum of five, and at least one of these training locations should be a full training centre.

There are two different types of modules, obligatory and desirable. Obligatory modules are those considered essential for successful training. Training in all the desirable modules is not considered essential for training in PRM. However, a minimum of three desirable modules should be completed by each trainee. Modules are defined as either clinical or academic.

3.2. Obligatory modules

3.2.1 Clinical

Module IPM: Inpatient management of paediatric patients.

The trainee acquires expertise in the management of all hospitalised infants, children and adolescents with acute and chronic respiratory diseases. Full-time assignment of the trainee, who is to be employed in a position of responsibility, is required. The ward or wards in which training takes place must be under the medical supervision of a tutor.

Required minimum: duration of 12 months.

Module OPM: Outpatient management of children with various respiratory disorders in a specialised paediatric respiratory outpatient clinic.

The trainee is required to provide competent outpatient care in a responsible position under the supervision of the tutor.

Required minimum: duration of 12 months

Module PFT: Pulmonary function testing in paediatric patients.

This training must take place in a lung function laboratory specialising in measurements in children. The minimum spectrum of techniques available must include spirometry, recording of flow-volume curves, plethysmography, bronchial provocation testing and blood gas analysis. The trainee becomes proficient in recording, evaluating and interpreting the measurement. In addition, she/he acquires skill in training children to co-operate, as well as gaining experience in hygiene, maintenance and calibration of equipment. Considerable knowledge of the physiological background is mandatory.

Required minimum: no specifications; completion of training certified by tutor.

Module FB: Flexible bronchoscope

This includes broncho-alveolar lavage in paediatric patients of all ages. It is recommended that trainees attend an introductory course. They should initially attend procedures to assist and then perform endoscopies under the guidance of a tutor. Some trainees may gain experience by performing bronchoscopies in adults. The trainee should be familiar with the technique of non-bronchoscopic broncho-alveolar lavage and have some knowledge of the processing and examination of lavage fluid.

Required minimum: assist 50 and perform 25 bronchoscopies.

Module ADT: Allergy diagnosis and treatment

This includes practical experience in skin testing and other relevant diagnostic methods, especial invitro methods for diagnosing allergy and airway inflammation. Experience in immunotherapy is not mandatory.

The training will focus on children with asthma and allergic disease of the upper airways, but should also include non-respiratory allergic disorders.

Required minimum: no specifications; completion of training certified by tutor.

Module IL: Imaging of the lung of paediatric patients with a wide variety of respiratory disorders.

The trainee should attend radiology rounds, and evaluate chest radiographs her/himself under supervision. Additional experience in evaluating CT scans of the lung and MR images of the mediastinum is mandatory,

Required minimum: no specifications; completion of training certified by tutor.

Module AT: Aerosol therapy for infants, children and adolescents.

The trainee acquires theoretical knowledge and practical experience in prescribing and teaching the different modes of aerosol treatment to paediatric patients.

Required minimum: no specifications; completion of training certified by tutor.

Module CM: Management of congenital malformations of the respiratory tract.

Experience includes a wide variety of abnormalities in the upper and lower respiratory tract, appropriate diagnostic and therapeutic strategies, especially long-term respiratory care, and the principles underlying surgical procedures.

Required minimum: no specifications; completion of training certified by tutor.

Module BA: Management of bronchial asthma in paediatric patients.

Experience which includes long-term management and the treatment of acute exacerbations, both in the inpatient and outpatient setting. Acquired expertise covers all aspects of asthma treatment in all paediatric age groups.

Required minimum: no specifications; completion of training certified by tutor.

Module CF: Management of cystic fibrosis in paediatric patients.

The trainee learns to provide care both in an in- and an out- patient setting. Training covers all aspects of cystic fibrosis care, and includes dealing competently with psychosocial issues. It is recommended there should be a minimum of 50 CF patients in a training centre.

Required minimum: no specifications, completion of training certified by tutor.

Module WD: Management of wheezing disorders in infants and children.

The trainee learns to assess and treat recurrent wheezing in the first years of life. This experience must include chronic lung disease of prematurity (bronchopulmonary dysplasia).

Required minimum: no specifications, completion of training certified by tutor.

Module LI: Acute and chronic lung infection.

The trainee acquires experience in the management of children with croup, viral bronchiolitis, and all forms of pneumonitis, including lung abscess, empyema, and bronchiectasis. This experience includes management of childhood tuberculosis. Acquired knowledge also covers microbiological

techniques for identifying the aetiology of infections and skill in various techniques for sampling infectious material.

Required minimum: no specifications, completion of training certified by tutor.

Module CA: Consultation and assistance

The trainee learns to provide competent consultation and technical assistance to other paediatric specialists, especially to oncologists, cardiologists, neonatologists, and intensive care specialists, but also to otolaryngologists, thoracic and paediatric surgeons, and others who manage children with complex conditions that affect the respiratory system. Emphasis is placed on close co-operation with Adult Chest Physicians, especially on establishing a continuum of care from child- to adulthood for patients with chronic respiratory disorders.

Required minimum: no specifications; completion of training certified by tutor.

Module OA: Organisation and administration

The trainee acquires experience in the administration of medical services in a tertiary care centre and learns to organise and to update diagnostic, therapeutic and educational programmes. In addition, the trainee gains experience in audit and applying quality assurance principles in her/his clinical, academic, and administrative work.

Required minimum: no specifications; completion of training certified by tutor.

3.2.2 Academic

Module TE: Teaching experience

The trainee learns to prepare and present teaching material to different target audiences in a variety of settings. This training includes bedside teaching.

Required minimum: Ten teaching sessions in two or more teaching programmes, dealing with both undergraduates and postgraduates.

Module RE: Research experience in the field PRM,

Under expert supervision, the trainee learns to plan, conduct, evaluate and publish research projects. In addition, she/he gains practical experience in presenting results to an international audience in the form of oral or poster presentations.

Required minimum: One paper accepted for publication in the field of PRM (first author) in an international, peer-reviewed journal, plus one oral or poster presentation at an international meeting.

3.3. Desirable Modules

3.3.1 Clinical

Module ET: Exercise testing for assessing cardiopulmonary function in children.

The trainee becomes proficient in all theoretical and practical aspects of paediatric exercise testing, including the physiological background and relevant methodological issues.

Required minimum: no specifications; completion of training certified by tutor.

Module SST: Sleep studies in paediatric patients.

The trainee acquires knowledge of the theoretical background and of the practical aspects of paediatric polysomnography, as well as of the management of central and obstructive apnoea in children.

Required minimum: no specifications; completion of training certified by tutor. Module ILF: Infant lung function testing

The trainee acquires theoretical knowledge of, and some practical experience in, lung function tests applied in infants and pre-school children, including recording and interpretation. In-depth knowledge of the physiological background is mandatory.

Required minimum: expertise acquired in three techniques.

Module TDC: Management of technology dependent children

The trainee learns the principles of paediatric tracheostomy care, including control investigations and weaning strategies. In addition, she/he acquires knowledge in the respiratory management of children with neuromuscular disorders, abnormal control of breathing, and severe lung disease by long-term home ventilation and supportive home oxygen therapy.

Required minimum: no specifications; completion of training certified by tutor.

Module TBC: Management of children with tuberculosis.

The trainee learns relevant diagnostic strategies and competent therapeutic management. In order to provide sufficient clinical experience, this training takes place in a centre caring for a large number of children with tuberculosis.

Required minimum: no specifications; completion of training certified by tutor.

Module ID: Management of children with immune deficiency.

Training includes interpretation of relevant diagnostic tests and clinical long-term management of patients; it takes place in a specialised centre in order to provide sufficient clinical experience.

Required minimum: no specifications; completion of training certified by tutor.

Module LTX: Lung transplantation in paediatric patients.

Training includes pre-transplantation assessment and post-transplantation long-term management. It takes place in a unit integrated in or closely co-operating with a transplantation centre.

Required minimum: Participation in management of five patients.

Module NMD: Respiratory aspects of neuromuscular disease

Understanding the management of patients with respiratory impairment due to neuromuscular disease. It takes place in a unit linked to a specialised centre for paediatric neurology.

Required minimum: Participation in management of five patients

Module CPT: Chest physiotherapy for paediatric respiratory diseases and their complications

The trainee acquires an understanding of the principles of specialised chest physiotherapy and learns to prescribe and monitor such treatment.

Required minimum: no specifications, completion of training certified by tutor

Module RP: Rehabilitation programme for chronic lung diseases.

The trainee gains experience in organisation and evaluation of such rehabilitation programmes. This training takes place in a specialised paediatric respiratory rehabilitation unit or centre.

Required minimum: no specifications; completion of training certified by tutor.

3.3.2 Academic

Module SR: Special research activity

Any personal research programme in PRM that clearly exceeds the average should be recognised as special research activity.

Required minimum: Two or more publications (first author) in the field of PRM in international, peerreviewed journals.

3.4 Duration of training

Complete training in PRM has a minimum duration of three years, of which at least one year must be spent in a tertiary centre for paediatric respiratory disease. For each obligatory module, which, by chance, has been undertaken in an accredited PRM training centre during the first two years of specialist registrar training or during a Research Fellowship, the trainee may subtract three months. This reduction of training time in PRM is permissible up to a subtracted maximum of twelve months.

3.5 Monitoring of training

A training supervisor is assigned to each trainee at the beginning of her/his training. This training supervisor has to be a paediatric respiratory specialist based in a tertiary centre. This supervisor advises the trainee on important training issues and reviews the trainee's progress in yearly intervals.

Each trainee's progress is also monitored by their local supervisor. The trainee maintains a personal log book, where she/he documents relevant training experiences. This log book and the trainee's progress through various training modules is discussed with the local tutor at three monthly intervals.

Successful completion of a training module is certified by the respiratory tutor in the trainee's Log Book. In addition the tutor should record, duration of module, describe acquired knowledge and skill and accurately quantify extent of theoretical and practical experience accumulated by the trainee.

4. THE TRAINEE

4.1 Obligatory Prerequisites

Obligatory pre-requisites for entering the training programme in PRM are:

- completion of two years of specialist registrar training in paediatrics;
- at least six months training in a Neonatal Intensive Care Unit
- training in Paediatric Intensive Care, including competency in resuscitation. (However, in some instances it may be appropriate to obtain this during the respiratory training programme.)

4.2 Desirable Prerequisites

Desirable but not obligatory pre-requisites for entering the training programme in PRM are:

- basic training in Paediatric Cardiology
- basic training in Epidemiology and Statistics

5. TRAINING CENTRES/TUTORS

Training centres and units are defined by the kind and number of modules they teach and by the availability of suitably qualified tutors and teachers.

Several institutions, located in close proximity, might combine into one training centre. In such cases, one qualified individual must be designated as "training centre director" who represents this centre to the outside and carries responsibility for the offered programme.

5.1.1 Full Training Centre

Full training centres are highly specialised tertiary care centres for PRM, that can offer a complete training. They are defined by the following features:

- availability of all obligatory modules
- availability of four or more desirable modules
- two (or more) accredited tutors

5.1.2 Partial Training Centre

Partial training centres are partially specialised centres which, however, cannot offer a complete training. They are defined by the following features:

- availability of one to four modules (obligatory or desirable);
- a teacher competent in each of these modules.

5.2 Tutors/Teachers

5.2.1 Paediatric Respiratory Training Director

A Paediatric Respiratory Training Director is a tutor who heads a full training centre.

5.2.2 Paediatric Respiratory Tutor

A Paediatric Respiratory Tutor is a Respiratory Paediatrician with teaching and research experience working in a university hospital or tertiary respiratory centre.

5.2.3 Paediatric Respiratory Teacher

A teacher has acknowledged expertise in one or in a few particular aspects of PRM, but does neither have to be an accredited Respiratory Paediatrician, nor have to hold a university appointment. Her/his contribution to the training programme is restricted to one or a few of the training modules.

6. COMPLETION OF TRAINING AND ACCREDITATION

When a trainee has completed her/his training they should submit their CV, log book and tutor's report to the RCPCH Specialist Advisor in Paediatric Respiratory Medicine for accreditation.