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anaphylaxis, children, cluster analysis, food, phenotypes

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The authors declare that they have no conflicts of interest.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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The roadmap for allergology in Europe: The European training requirements for the specialty of allergology

To the Editor,

The development of the European training requirements (ETR) for medical specialties in Europe is regulated by the Union Européenne

des Médecins Spécialistes (UEMS), a non-governmental organization representing national associations of medical specialists at European Level.

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The training requirements of the specialty of Allergology were developed in 1994, amended in 1997, 2001, 2002, and 2003 and published in 2004.¹ Seventeen years after, we present an update of the ETR for the specialty of Allergology as approved by the UEMS Council held 18 October 2019 in London.

The ETR was developed by the authors of this article and the UEMS section and board of Allergology with the input from the EAACI Specialty Committee and National Allergy Societies Committee. The complete version of the ETR can be found on the UEMS website.²

This ETR focuses on Allergology, since at European level our specialty has been recognized only as Allergology. However, in some countries the specialty of Allergology may be associated with Clinical Immunology and named as Allergology and Clinical Immunology (specialty or subspecialty). For this reason, Clinical Immunology is

presented by this ETR as *optional* training. Due to current UEMS regulations, a common trunk in Internal Medicine with a minimum of 2 years instead of a combination of Internal Medicine and Pediatrics in the first 2 years is included.

The training requirements for trainees comprise general competences, theoretical knowledge, practical, and clinical skills.

The general competences of physicians are described in the CanMEDS framework (ie, medical expert, communicator, collaborator, leader, health advocate, scholar, and professional).³

Trainees should be knowledgeable about basic immunology, genetics/epigenetics, epidemiology, allergens, clinical manifestations, diagnosis, and therapy of the disorders dealt by an allergologist (Appendix 1). Furthermore, trainees should be familiar with the principles of research.

TABLE 1 Practical and clinical skills

Allergology	Clinical Immunology (optional)
<i>The history and diagnosis and management of allergic diseases</i>	<i>Knowledge of the pathophysiology, aspects of the history, the clinical presentation, diagnosis, and management of the following diseases</i>
Comprehensive and structured history taking	
In vivo investigations	
In vitro investigations	
Provocation tests	
Management	
<i>Clinical conditions:</i>	<i>Clinical conditions</i>
Upper airways: allergic and non-allergic rhinitis, rhinoconjunctivitis, rhinosinusitis, and nasal polyps	Immune-deficiencies <ul style="list-style-type: none"> • T-cell immunodeficiencies • Agamma/Hypogamma/Dysgammaglobulinemia and other humoral immunodeficiencies among of which the Wiskott-Aldrich syndrome • Secondary immune-deficiencies
Conjunctivitis, keratoconjunctivitis	
Asthma	
Occupational, irritant or work-exacerbated rhinitis or asthma	
Allergic bronchopulmonary aspergillosis (ABPA)	Systemic auto-immune diseases <ul style="list-style-type: none"> • Systemic lupus erythematosus • Sjögren's syndrome • Systemic and localized scleroderma • Mixed connective tissue disease • Dermatomyositis • Polymyositis • Antiphospholipid syndrome
Hypersensitivity pneumonitis or extrinsic allergic alveolitis	
Atopic dermatitis	
Contact dermatitis	
Work-related contact dermatitis	
<i>Urticaria (allergic and non-allergic)</i>	
Angioedema	
Food allergy and other forms of food hypersensitivity	
Drug allergy and other forms of drug hypersensitivity	Vasculitis <ul style="list-style-type: none"> • Arteriitis temporalis/polymyalgia rheumatica • M. Takayasu • Polyarteriitis nodosa • Cryoglobulinaemic vasculitis • ANCA associated vasculitis • Other forms of vasculitis (Henoch-Schönlein, urticarial vasculitis, etc) • Behçet disease
Insect allergy	
Anaphylaxis (allergic and idiopathic)	
Eosinophilic esophagitis and eosinophilic gastro-enteritis	
Mastocytosis and mast cell associated syndrome (MCAS)	
<i>Specific interventions:</i>	
Allergen avoidance	
Allergen immunotherapy	
Non-allergen immunotherapy (Biologicals)	Other inflammatory diseases <ul style="list-style-type: none"> • Uveitis • Sarcoidosis • Auto-inflammatory diseases (TRAPS, CINCA syndrome, Muckle-Wells etc) • Hyper-IgE syndrome
Pharmacotherapy	
Prevention of allergy	
Drug desensitization	

All trainees need to have detailed practical and clinical skills in the following areas (Table 1 and online repository Appendix 2).

The duration of training in Allergology should be a minimum of 5 years with 2 years of Common Trunk and 3 years of specific training in Allergology and related areas (see Figure 1). Training in related specialties should be focused on achieving the competences required for the (differential) diagnosis and management of patients with allergic diseases.

An integrated assessment system that measures the progress of trainees using workplace-based assessments, portfolios of procedures and knowledge-based assessment is highly recommended.

1. Workplace-based assessments: The practical and clinical skills are graded according to 5 levels (see Appendix 2). The highest level of clinical skills should be covered by the concept of the Entrustable Professional Activity (EPA) which means that a trainee can be trusted to perform the task and not whether they are just competent to do it. An example of a generic EPA in Allergology is enclosed in the full ETR.²
2. Portfolio: The portfolio includes analysis of training activities and technical procedures performed, reports of self-reflection

particularly regarding critical incidents, evidence of presenting clinical or teaching sessions, and communications at/ congresses/ conferences, and/or publishing scientific articles. The portfolio should be discussed yearly with the supervisor.

3. Knowledge-based assessment: National authorities should require trainees to take national board exams. Harmonization of the theoretical knowledge across Europe may be achieved by the optional EAACI/UEMS Knowledge Exam.

The program is led by a training director, a medical specialist with at least 5 years' experience as a registered allergologist. The training institute must have sufficient trainers registered as Allergologists. Preferably, there should be a ratio of two trainers per trainee and one educational supervisor who mentors the trainee throughout their training. The training team should meet the required competences and quality criteria as required by national boards.

Training centers/ institutions should undergo initial accreditation by national authorities. Furthermore, they should have availability for consultation rooms, consumables/devices to perform necessary clinical investigations and laboratories. The centers should have constantly in- and out-patients. Moreover, they need to have

Minimum of 5 years	
Common Trunk	Allergology
<p>Two years minimum of Common Trunk to provide broad general medicine experience (preferably in the first 2 years)</p> <p>24 months Internal Medicine including both adult and pediatric aspects</p> <p>Options: Clinical Pharmacology, Epidemiology, Occupational and Environmental medicine, Emergency medicine/Intensive care, Ophthalmology, Infectious disease</p>	<p>Three years minimum (preferably in the final 3 years)</p> <p>24–30 months Allergology and Clinical Immunology in accredited institutions</p> <p>2-3 months Immunology Laboratory oriented</p> <p>2-3 months Dermatology, 2-3 months Pneumology and 2-3 months Oto-Rhino-Laryngology in accredited institutions</p>

FIGURE 1 Training schedule for the specialty of Allergology

established links with medical specialists covering the wide range of organ allergic manifestations to ensure robustness of the diagnosis. Finally, they should have a rapid referral system in place to implement urgent diagnostic and treatment decisions. Nurses, dieticians, and other health allies working in the facility need to be specifically trained to deal with allergic patients.



Subsequent monitoring should be at least every five years based on well-defined criteria with emphasis on organization and quality of the training process, facilities, appropriate assessment methods, and measured outcomes such as trainee performance and qualification. Feedback from trainers and trainees must be incorporated in the review.

This ETR replaces the requirements for training in Allergology and Clinical Immunology as defined in Chapter 6 of the UEMS Charter on Training of Medical Specialist in the EU (2003). There are however some major differences when comparing this ETR with the previous Chapter 6.

The ETR can be seen as a guideline or benchmark for trainees in the specialty of Allergology. It is however up to the EU member states to adopt and implement this ETR. National Authorities keep their competence in defining the content of postgraduate training in their own State.

CONFLICT OF INTEREST

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.