

The 2021 European Training Requirements in Paediatric Endocrinology and Diabetes

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Keywords

Curriculum · Syllabus · Tertiary care · Subspeciality training · European Training Requirements · Paediatric endocrinology and diabetes

Abstract

The aims of the 2021 European Training Requirements (ETR) in Paediatric Endocrinology and Diabetes (PED) are to (1) provide standards to harmonize training programmes in PED between different European countries, (2) establish clearly defined standards of knowledge and skills required to practice PED at the tertiary care level, (3) foster the development of a network of competent tertiary care centres for PED in Europe and globally, and (4) improve the quality of care for children and adolescents requiring PED services. This ETR in PED specifies the requirements for training institutions,

trainers, and trainees. It also provides the detailed syllabus/core content that trainees are expected to achieve in order to become competent independent clinicians in PED. References to consensus guidelines produced and/or endorsed by ESPE are included. The target users are trainees in PED, trainers, and all involved with quality assurance and accreditation. The process to develop and approve this 2021 ETR has been rigorous and involved trainees and consultants in paediatric and adult Endocrinology, ESPE (Syllabus Task Force, Education and Training Committee, Council), European Academy of Paediatrics (Tertiary Care Council, Assembly), European Board of Paediatrics, and Union of European Medical Specialists. Implementing the ETR will complement professional regulatory requirements for postgraduate training

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in PED in different countries and allow harmonizing standards across Europe. ETR is publicly available at www.eurospe.org/education/education-training-syllabus and at https://www.uems.eu/__data/assets/pdf_file/0007/133990/UEMS-2021.17-European-Training-Requirement-in-Paediatic-Endocrinology.pdf.

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Introduction

This study presents the rationale that underpins the European standards for training in medical (sub)specialties, the roles of various organisations involved in developing the 2021 European Training Requirements (ETR) in Paediatic Endocrinology and Diabetes (PED), and an overview of what it comprises [1]. ETR is publicly available at www.eurospe.org/education/education-training-syllabus and at https://www.uems.eu/__data/assets/pdf_file/0007/133990/UEMS-2021.17-European-Training-Requirement-in-Paediatic-Endocrinology.pdf. The 2021 ETR in PED aims to (1) provide standards to harmonize training programmes in PED between different European countries, (2) establish clearly defined standards of knowledge and skills required to practice PED at the tertiary care level, (3) foster the development of a network of competent centres for PED in Europe and globally, and (4) improve the quality of care for children and adolescents requiring PED services.

Rationale for European Training Requirements and Roles of Various Organisations

Union Européenne Des Médecins Spécialistes/Union of European Medical Specialists (UEMS)

UEMS is a non-governmental organisation representing national associations of medical specialists from member countries of the European Union and specialist sections of European Boards [2]. UEMS aims to ensure high standards for training across Europe. These standards are intended to complement the training standards in individual countries and to pave the way to improve the quality of care for all citizens.

The European Commission Directive 2005/36/EC legally enables automatic mutual recognition of medical qualifications and free movement within all European member states on the basis of harmonized minimum training requirements [3]. UEMS has set out the minimum requirements for training in the ETR for each dis-

cipline. Each ETR specifies the standards for curricula which includes syllabus (i.e., content) and the practical (process and practice for instructional methods and assessments) and productive (outcomes) aspects that are planned, purposeful, systematic, and progressive.

European Academy of Paediatrics (EAP) and European Board of Paediatrics (EBP)

The EAP is a not-for-profit and non-governmental association that aims to improve standards in training, service, and research and to represent the professional interests of paediatricians in Europe [4]. EAP's Secondary/Tertiary Care Council includes representatives from paediatric subspecialties, such as ESPEs "Accreditation and Syllabus Convener." The latter is a member of ESPE's Education and Training Committee.

EBP is the Executive of the Paediatric Section of UEMS [5]. Its key role is to maintain the highest possible standards of training in paediatrics across Europe, and the primary output is therefore ETRs. The EBP sits within the EAP and thus provides the link between EAP and UEMS (Fig. 1).

The ETRs are developed jointly between the EAP, EBP, and European specialist societies. They are voted on at a General Assembly meeting of the EBP and then submitted to a council meeting of the UEMS for official approval. Together, EAP and the subspecialties are responsible for maintaining the ETR documents.

Subspecialty Training Requirements in Paediatric Endocrinology and Diabetes in Europe since the 1990s

Regular updates that reflect scientific and medical progress are recommended for the ETR and at approximately 5-year intervals. The first comprehensive training syllabus in PED was developed in 1995 and was last revised in 2014 [6–8].

The 2021 ETR in PED was initially prepared by ESPE's Syllabus Taskforce on behalf of the Education and Training Committee. Contributions were obtained from paediatric and adult trainees and specialists in endocrinology and diabetes representing countries within Europe and beyond. Thereafter, the Chair and members of the Education and Training Committee and members of the ESPE council in 2020, EAP's Secondary/Tertiary Care Council in 2020–21, and UEMS in 2021 peer-reviewed the ETR. Finalized ETR was approved by the Tertiary Care Council and General Assembly of the EAP and the EBP in January 2021 and ratified by UEMS in April 2021. The process used to develop the ETR strengthens the validity of the recommendations.

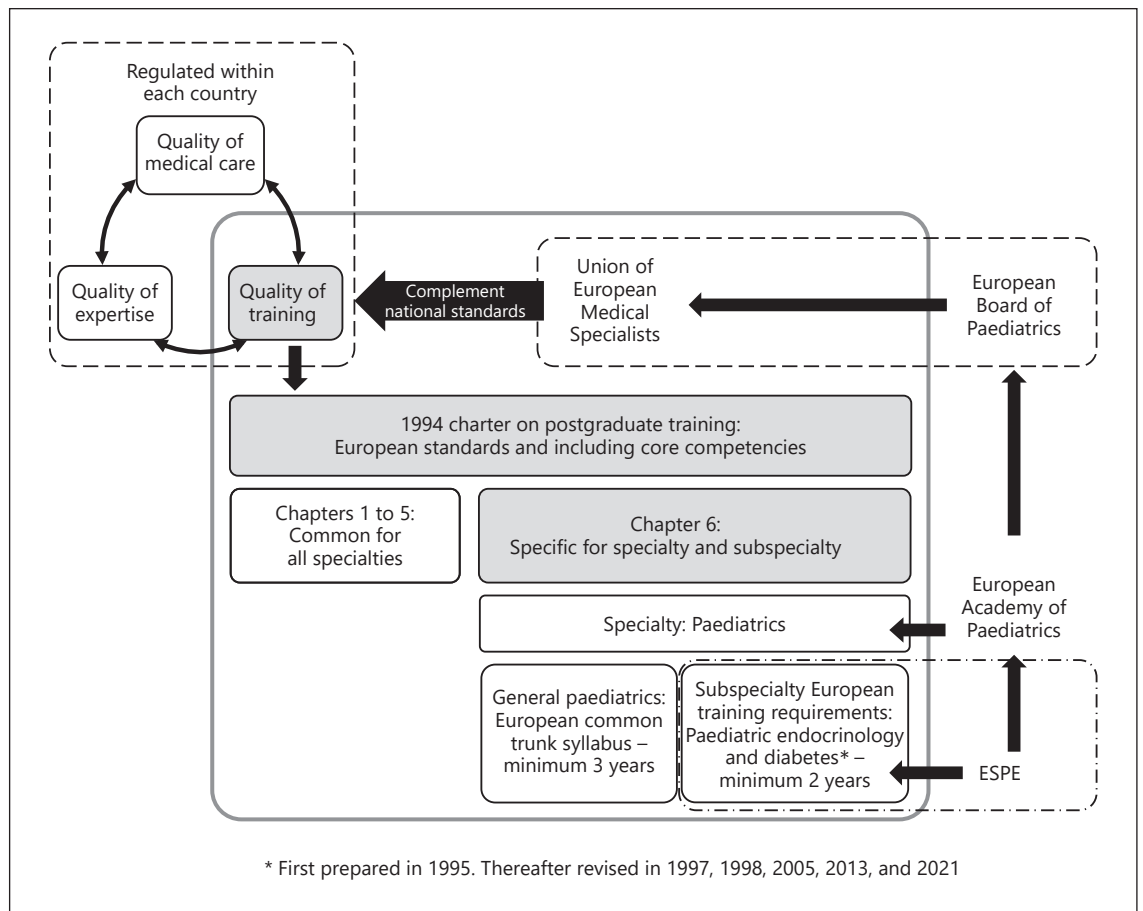


Fig. 1. The roles of Union Européenne des Médecins Spécialistes/Union of European Medical Specialists, European Board of Paediatrics, European Academy of Paediatrics, and ESPE for the development of the European Training Requirements in Paediatric Endocrinology and Diabetes.

Summary of Contents of the 2021 European Training Requirements in Paediatric Endocrinology and Diabetes

The aim of tertiary care training in PED is to equip clinicians with the competencies required to provide safe high-quality care for children and adolescents who present with common as well as rare endocrine problems. By the end of training, the subspecialist is expected to display the characteristics and competencies for each of the 7 roles described by the CanMEDS framework [9] that are Medical expert, Communicator, Collaborator, Leader, Health advocate, Scholar and researcher, and Professional plus the additional role of mentor. To facilitate achieving these, the ETR in PED specifies the requirements for the following: training period, research training, training institutions, trainers, and trainees. It also provides details

for a range of nontechnical skills (Fig. 2) and the subspecialty syllabus/core content.

Each item in the subspecialty syllabus is categorized as B for basic knowledge; C for core and essential clinical knowledge, skills, and reasoning, for problems that are routinely encountered; and D for desirable clinical knowledge, skills, and reasoning, for problems that are rare and therefore may not be encountered during training (Fig. 2). Trainees are expected to assimilate and integrate these from their training experiences and different modes of learning.

The 5 levels of clinical competence from novice to competent independent clinician defined by UEMS have been adapted for PED for the 7 components which are (1) knowledge base, (2) clinical assessment, (3) management and follow-up, (4) clinical reasoning: diagnostic, clinical judgement, and decision-making skills, (5) clinical communication and team working, (6) medical record keep-

Content – what a trainee needs to learn			
Cross cutting and non-technical skills	Subspecialty specific syllabus		
A. Professionalism (attitudes) B. Communication C. Situation awareness D. Decision making E. Safeguarding F. Leadership G. Team working H. Time and task management I. Health economics and service provision J. Science and biostatistics K. Self-directed learning L. Generic teaching/ education skills	B. Basic knowledge	C. Core/essential clinical knowledge, skills and reasoning, for problems that are routinely encountered	D. Desirable clinical knowledge, skills and reasoning, for problems that are rare
	A. Biomedical knowledge B. Procedural skills C. Emergencies D. Growth – short stature E. Growth – tall stature and overgrowth	F. Puberty G. Weight disorders H. Pituitary, hypothalamus, central nervous system I. Thyroid J. Parathyroid, metabolic bone and mineral disorders	K. Adrenal glands L. Sex development, gender M. Disorders of testes, male reproductive tract N. Disorders of ovaries, female reproductive tract

Fig. 2. Content for the European Training Requirements in Paediatric Endocrinology and Diabetes.

Table 1. Competence levels for 7 components of clinical knowledge, skills, and reasoning

Level	1	2	3	4	5
Trainee	Has observed	Can do with assistance	Can do but may need assistance	Competent to do without assistance	Can be “trusted” to do independently and without assistance or need for advice
Extent of supervision required	Enhanced direct supervision	Direct supervision	Indirect supervision when required	Occasional ad hoc advice from supervisor	Independent and no supervision required Can supervise others

The extent of supervision is specified for each level. Adapted from those defined by UEMS.

ing and written communication, and (7) reflective practice (Table 1). References to consensus guidelines and statements produced and/or endorsed by ESPE and seminal papers relevant for practicing clinicians are included. Continuous monitoring and evaluation, using a range of measures and including workplace-based assessments, will provide information about trainees’ progress and contribute to quality assurance.

Use of the 2021 European Training Requirements in Paediatric Endocrinology and Diabetes

National Level and Training Institutions in Different Countries

The ETR is intended to complement the standards and regulatory requirements for postgraduate training in PED in each country and not to supersede them. Adopt-

ing the standards in the ETR is a prerequisite for centre accreditation. Training institutions and tertiary care centres can use the ETR as a tool for quality assurance and undertake a self-assessment against the standards provided. The standards can also be used by national training authorities and organisations such as ESPE and EBP for accreditation of training centres.

Trainers and Trainees

The requirements for trainers and trainees are presented in separate sections of the ETR. Each trainee should be actively involved in the care of children and adolescents. They are required to keep a portfolio with an up-to-date logbook of case encounters and evidence of their learning, development, and progress. Formative assessments and using different tools are recommended throughout training [10]. At regular intervals throughout training, they should self-assess their level of competence

B. Procedural skills in paediatric endocrinology and diabetes								
Enter the self-assessments using the dropdown list for the level of competence in the dates column. To clear a box, use the delete or backspace key. Red and orange indicate what the trainee needs to focus on. Over time, all the boxes should be green, i.e. competence level 5 achieved.								
		Content domain	Dates for self-assessment					
			01/05/2021	01/08/2021	01/11/2021	01/02/2022	Date	Date
1	Use anthropometry and puberty monitoring equipment (e.g. wall mounted stadiometer for standing height, table mounted stadiometer for sitting height, orchidometer), population and disease-specific growth charts or standards for clinical assessment.	C	L3 – Can do but may need assistance	L4 – Competent to do without assistance	L5 – Independent without assistance or need for advice			
2	Assessment of skeletal maturation from head and knee radiographs.	C	L0 – No evidence	L1 – Has observed	L3 – Can do but may need assistance	L4 – Competent to do without assistance		
3	Prediction of adult height.	C	L1 – Has observed	L4 – Competent to do without assistance	L5 – Independent without assistance or need for advice			
4	Assess appearance of the external genitalia using validated methods, such as external genital score (EGS).	C	L1 – Has observed	L3 – Can do but may need assistance	L4 – Competent to do without assistance	L5 – Independent without assistance or need for advice		
5	Perform dynamic function tests (e.g. growth hormone stimulation tests)	D	L1 – Has observed	L3 – Can do but may need assistance	L4 – Competent to do without assistance	L5 – Independent without assistance or need for advice		
6	Use blood glucose monitoring technologies (e.g. glucometers, ambulatory continuous glucose monitoring (CGM) devices).	C	L0 – No evidence	L2 – Can do with assistance	L3 – Can do but may need assistance	L4 – Competent to do without assistance		
7	Use available injectable hormone administration technologies (e.g. insulin pen devices, insulin pump, growth hormone pen devices).	C	L0 – No evidence	L2 – Can do with assistance	L3 – Can do but may need assistance	L4 – Competent to do without assistance		
8	Perform ultrasound examination of thyroid and testes (not essential and will be country-specific depending on the resources available and local needs).	D	L0 – No evidence	L1 – Has observed	L3 – Can do but may need assistance	L3 – Can do but may need assistance		

Fig. 3. Example of the section on procedural skills from the Content/Syllabus tracking tool. This illustrates 8 content items, the domain for each item (C for common and D for rare conditions), and how a trainee might complete at 3-month intervals.

for the items in the syllabus and jointly review with their trainer/educational supervisor. To facilitate this, an online PED Content/Syllabus tracking tool is available from the ESPE website (Fig. 3) [1].

Approval and Accreditation

Further to UEMS recommendations, the EBP initiated a European Training centre Visitation program for ac-

creditation of tertiary care paediatric specialities in 2008. It has proposed that the visitation program is arranged jointly with EAP-UEMS, paediatric subspeciality organisations such as ESPE, and national training authorities. An independent process of accreditation of training centres has benefits for centres, trainers, and prospective trainees, by providing objective evidence about the standards of training and formal recognition.

Conclusion

This 2021 ETR in PED specifies the up-to-date requirements for training institutions, trainers, and trainees. It also provides the detailed syllabus/core content that trainees are expected to achieve in order to become competent independent clinicians in PED. Implementing the ETR will complement professional regulatory requirements for postgraduate training in PED in different countries. This allows harmonizing standards across Europe and provides a model to use globally.

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Statement of Ethics

An ethics statement was not required for this study type, as no human or animal subject or material was used.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

K.B. prepared the first draft and all co-authors provided comments which helped finalize the manuscript. L.P. prepared the table and figures.

Data Availability Statement

There were no research data generated during this publication. ETR is publicly available at <https://www.eurospe.org/education/education-training-syllabus/>.

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