European Journal of Endocrinology, 2024, **191**, R71–R77
https://doi.org/10.1093/ejendo/lvae141
Advance access publication 25 November 2024
Invited Review

European Society of Endocrinology Curriculum and Training Recommendation in Endocrinology

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Abstract

The European Society of Endocrinology (ESE) and the Union Européenne des Médecins Spécialistes (U.E.M.S.) Section and Board of Endocrinology have produced a Curriculum and Training Recommendation in Endocrinology to provide updated recommendations concerning the content and structure of postgraduate training. Cornerstones of the Curriculum are the integrity of Endocrinology not to be divided into subspecialties such as diabetology or thyroidology, recommendation of 6 years full-time training comprising 1–3 years (preferably 2–3 years) of General Internal Medicine followed by 3–5 years of specialist training in Endocrinology across 13 core areas. In addition to knowledge and experience in the many fields of Endocrinology, the Curriculum includes specific attitudes, communication skills, training to work in and lead multidisciplinary teams, resource management, quality assurance, human-error management, and critical incidents reporting as well as the commitment to life-long learning expected from a trainee and from an Endocrinologist. The Curriculum also includes requirements for training centres, for assessment of training and for competencies of trainers. The aim of the ESE Curriculum and Training Recommendation in Endocrinology is to harmonise postgraduate training and help provide the best medical care for patients with endocrine diseases across Europe.

Keywords: endocrinology, diabetes, metabolism, curriculum, specialty training, endocrinologist

Significance

The ESE Curriculum and Training Recommendation in Endocrinology aims to provide updated recommendations concerning the process of training and areas of knowledge in Endocrinology, as well as to identify the different competencies and skills needed by a medical specialist in Endocrinology. The ESE Curriculum has been endorsed by 48 National Societies of Endocrinology and represents a major step towards the harmonisation of postgraduate training in Endocrinology across Europe. Ultimately, it will help provide the best medical care for patients with endocrine diseases.

General information and purpose of the European Society of Endocrinology Curriculum and Training Recommendation

The European Society of Endocrinology (ESE) Curriculum and Training Recommendation in Endocrinology does not aim to be imposed over established national curricula, but may complement them by offering a comprehensive and robust training framework created by medical specialists and based on assembled European Union (EU)-wide educational and training experience. It may serve as guideline for national authorities (National Medical Associations and Ministries of Health) in adapting their current curricula and support National Endocrine Societies in the interaction with them in this process. The aim is harmonisation of postgraduate training across Europe to ensure best medical care to patients with endocrine diseases and prevent the fragmentation of the field of Endocrinology that has already taken place in some countries. The success of the guideline can be monitored by the further development and acceptance of the European Board Examination in Endocrinology and Metabolism, the blueprint of which is based on this Curriculum and Training Recommendation and by a follow up survey of postgraduate training in Europe to the one that just has been finished.

This ESE Curriculum and Training Recommendation in Endocrinology is based on the ESE Recommended Curriculum of Specialisation in Endocrinology published in 2017 and updated in 2019, which was endorsed by 53 national endocrine societies,[1] and on the European Training Requirement (ETR) in Endocrinology, which was endorsed

Received: June 27, 2024. **Revised:** July 8, 2024. **Editorial Decision:** September 4, 2024. **Accepted:** November 9, 2024

by the delegates of the Union Européenne des Médecins Specialistes (U.E.M.S.) Section and Board of Endocrinology and ratified by the U.E.M.S. Council in 2018.[2] The ESE Curriculum and Training Recommendation in Endocrinology published here is, to a very large extent, identical to its full version that will be made available on the ESE website.

The ESE curriculum has been developed by the ESE Education Committee, which reviewed and compared curricula from across Europe and established the key criteria required to practice as a clinical Endocrinologist, listing the areas in which an Endocrinologist should be expected to be proficient. The working group appointed by the ESE Education Committee to complete this task comprised Jens Bollerslev (Norway), Michal Krsek (Czech Republic), Karim Meeran (UK), and Misa Pfeifer (Slovenia).

The U.E.M.S. ETR has been collated by the Standing Committee on Education and Professional Development of the Section and Board of Endocrinology comprising Maeve Durkan (Ireland), Anton Luger (Austria), Hans Perrild (Denmark), Richard Quinton (UK), and Graham Roberts (Ireland) based on information on postgraduate training in Endocrinology provided by the delegates.

The constant development of specialist training and clinical practice dictates the need for a periodical review of the Curriculum and the ETR to ensure that they are consistent with current practice and fit for purpose. In 2023, ESE and the U.E.M.S. Section and Board of Endocrinology agreed to develop common recommendations for a curriculum for postgraduate training in Endocrinology. The core working group who undertook this task was appointed by the ESE Education Committee and comprised Anton Luger and Maeve Durkan (on behalf of U.E.M.S. Section and Board of Endocrinology and ESE), as well as Mirjam Christ-Crain and Pedro Marques (on behalf of ESE). The ESE Curriculum and Training Recommendation in Endocrinology benefited from the input of ESE Focus Areas, ESE Young Endocrinologists and Scientists Committee (EYES), ESE Education Committee, ESE Executive Committee, ESE Council of Affiliated Societies (ECAS), and U.E.M.S. delegates from the Section and Board of Endocrinology. This Curriculum and Training Recommendation in Endocrinology was ratified by the ESE Executive Committee and by the General Assembly of the U.E.M.S. Section and Board of Endocrinology, and then endorsed by 48 ECAS national societies.

The main purpose of the ESE Curriculum and Training Recommendation in Endocrinology (2024) is to provide updated recommendations concerning the process and areas of knowledge and training in Endocrinology, as well as to list the different competencies and skills needed by a medical specialist in Endocrinology.

Scope of the recommendations for postgraduate training in Endocrinology

The conclusions of the ESE Curriculum and Training Recommendation in Endocrinology are aimed at developing the content of the European Board Examination in Endocrinology, Diabetes and Metabolism, as well as for hospital training accreditation programmes. Training according to the ESE Curriculum and Training Recommendation facilitates also professional mobility across Europe. Qualifications will automatically be recognised in other EU countries as established by EU law (Directive 2005/36/EC[3]).

The ESE Curriculum and Training Recommendation in Endocrinology represents the current training practice in most European countries and supports a high standard of medical training that will pave the way to patient safety and first-class quality of care for the benefit of all European citizens with endocrine diseases. It does not specifically address skills and competencies required for clinical and basic research. This is beyond of the scope of this Curriculum, but understanding the pathophysiology, diagnostic procedures, and treatment of endocrine diseases will form the basis for addressing relevant areas for research. The listed competencies in general core domains should be achievable by most national training programmes, even in the presence of considerable variations due to, for example, infrastructure, resources, manpower, laws, financing, and traditions. Basic competence levels proposed in specific core domains may stimulate implementation of education and training plans in clinical bottleneck areas. European hospitals not offering training possibilities in specific core domain competencies should look for opportunities to develop and upgrade training quality, for example, by forming training units with other training hospitals. In this way, the ESE Curriculum and Training Recommendation in Endocrinology may foster future clinical exchange programmes between hospitals and encourage the use of novel learning modalities, for example, medical simulation centres.

Not all competencies listed in this document will be possible to meet. Attaining full competency in all domains of the broad discipline of Endocrinology within the minimum training timeframe would be an ideal but impossible demand in any European country. Further training after accreditation as an Endocrinologist will enrich both the number and level of competencies.

The practice of Endocrinology

The ESE Curriculum and Training Recommendation in Endocrinology reflects a holistic approach - expert clinician, academic scholar, professional leader, and inspired humanitarian. Since hormones act on virtually every organ and cell type in the body, the Endocrinologist must apply a wide experience in general medicine. Some disorders lie clearly and completely within the domain of the Endocrinologist (eg, diabetes or thyroid disease). Other disorders are not exclusively endocrine in origin, but have important endocrine aspects (eg, osteoporosis, infertility and cancer). The Endocrinologist is often the most appropriate physician to provide medical care, or to coordinate it where a multidisciplinary approach is needed. Consequently, the Endocrinologist will need to develop and maintain skills in acute and chronic aspects of General Internal Medicine. Faced with an increasing proliferation of tests and new diagnostic and therapeutic procedures, the Endocrinologist often has an important role in defining the most efficient and cost-effective strategy for their use in patient care. High-level communication skills are central to the practice of Endocrinology both in relation to patient care and to the work of multidisciplinary teams.

Training needs of European Endocrinologists

The training of clinical Endocrinologists in Europe should involve the principles, practice, and ethical aspects of the following:

Table 1. Core areas in Endocrinology training.

Physiology and function of the endocrine system	A thorough modern grounding in the normal function of the endocrine system, including the physiology and biochemistry of hormones and their actions, and reflecting advances in molecular medicine.
Endocrinology	Extensive first-hand practical experience in a recognised training centre, of the management of all diseases primarily involving the endocrine system.
Diabetes mellitus	Extensive practical experience in all aspects of diabetes mellitus and its complications.
Lipid disorders	Extensive experience in diagnosing and managing lipid disorders, including secondary dyslipidaemias.
Metabolism, obesity, and nutrition	Extensive experience on nutrition in healthy and sick individuals, including obesity, malnutrition, inborn errors of metabolism, and eating disorders.
Andrology, reproductive, and sexual medicine	Extensive experience with gonadal dysfunction, reproductive disorders/infertility, or sexual dysfunction, as well as menopause, contraception, disorders of sexual development, and gender dysphoria.
Bone and mineral disorders	Extensive experience in diagnosing and managing bone and mineral disorders.
Endocrine tumours	Extensive experience in diagnosing and managing endocrine tumours, including neuroendocrine tumours, adrenal tumours, thyroid tumours, and parathyroid tumours.
Transition in Endocrinology	An understanding of the unique endocrine-related health care needs in children and adolescents with endocrinopathies, including the management of pubertal disorders, diabetes, obesity, growth and development issues, to ensure a smooth and adequate transition from paediatric to adult endocrine services.
Laboratory Endocrinology	An understanding of the principles and practice of hormone assay methods, the use of diagnostic tests, as well as molecular genetic testing is essential. Training should therefore include some exposure to endocrine laboratory services.
Diagnostic techniques in Endocrinology	Extensive experience in the interpretation of the results, usefulness, and limitations of ultrasound, CT, MRI, scintigraphy, PET, angiographic techniques with venous sampling, is critical for a trainee in endocrinology. The trainee may acquire competence and aspire to perform autonomously some of these, including thyroid ultrasound with fine needle aspiration, a technique becoming more often performed by endocrinologists in some countries.
Multidisciplinary training	Important and mandatory because Endocrinologists typically function at the centre of a network of other medical specialists and allied health professionals.
Research experience	Training should preferably include direct involvement in scientific research into one or more of the subject areas outlined in Table S1. It is acknowledged that it is difficult to produce high quality research in these short time frames, and so equal emphasis is expected in appreciation and interpretation of research methodologies, publications, statistical analysis, critical appraisal, and extensive reading of the literature.

- Foundation or core training in General Internal Medicine.
- Higher training in core areas of Endocrinology (section "Training in core areas of Endocrinology should involve", Table 1).
- Multidisciplinary training in several areas where the trainee should have responsibility for the care of patients.
- Relevant research, or competence and ability to review and interpret relevant research.
- Clinical laboratory experience.

Foundation or core training in General Internal Medicine

It is of great importance that training involves adequate experience in General Internal Medicine. This must be in the capacity of a practitioner working in a hospital, with an accepted postgraduate training programme, where he/she should have responsibility for the care of patients with a wide variety of medical disorders. Further details regarding training in the specialty of Internal Medicine can be found in the U.E.M.S. ETR on Internal Medicine published in 2016.[4] It may also be useful to include shorter periods of practice in other disciplines such as Paediatrics, Obstetrics and Gynaecology, Laboratory Medicine, Nuclear Medicine and Radiology.

Core training in Endocrinology

Endocrinology training should be based on:

- Syllabus, curriculum, and assessment
  - Reference to published guidelines from recognised societies
  - Reference to reliable educational materials relating to each expected area of knowledge and training in Endocrinology, including scientific articles published in high-impact endocrine journals and textbooks
- Defined competencies
- Designated accredited national centres
- Variety of training activities, including fellowships and exchanges to national and international expert centres
- Assessment should be linked to outcome, specialty knowledge and overall professional development

Training in core areas of Endocrinology should involve (Table 1)

- Physiology and function of the endocrine system
- Endocrinology
- Diabetes mellitus
- Lipid disorders
- Metabolism, obesity, and nutrition
- Andrology, reproductive, and sexual medicine
- Bone and mineral disorders
- Endocrine tumours
- Transition in Endocrinology
- Laboratory Endocrinology
- Diagnostic techniques in Endocrinology
- Multidisciplinary training
- Research experience

Required knowledge and experience in Endocrinology

An overview of the required areas of knowledge, experience, and training in Endocrinology is provided in Table S1. The list provided here is not intended to provide specific details of disorders or their treatment. The trainee should

demonstrate knowledge and understanding of the physiology, epidemiology and pathology, appropriate patient consultation, diagnostic techniques, treatment options, and follow-up procedures for each of the disorders listed. This represents the minimum expected criteria to be covered by national training programme in Endocrinology, however diagnostic tools and treatments may vary depending on local availability or regulations, and therefore should be defined locally.

Content and duration of training

Endocrinology has evolved as a specialty to include numerous subspecialties, all having important contributions to various areas of Internal Medicine. The traditional role as a medical specialty, included assessment and evaluation, appropriate investigation in that target area and recommendation of appropriate diagnostic, therapeutic, and interventional procedures. The practice of Endocrinology has changed toward more holistic competencies in the ambulatory setting, in intensive care medicine, in emergency medicine, in surgical and procedural care, as well as in the inpatient-hospital setting. Therefore, appropriate training requires a broad base training in Internal Medicine.

The process of training, attaining defined competencies and applying them safely and efficiently in clinical practice requires time. Specialist training should start after 1–3 years (preferably 2–3 years) of supervised hospital clinical practice, mainly General Internal Medicine. The minimum total duration of such training before accreditation as a specialist should be 6 years full-time (or recognised equivalent) in a mixture of General Internal Medicine for 1–3 years (preferably 2–3 years) and Endocrinology (3–5 years).

The common trunk

The training should start with 1–3 years (preferably 2–3 years) full-time period of practical clinical experience (Foundation and/or Core) in General Internal Medicine and major medical disciplines in nationally approved centres. Since this trunk will be common with other medical specialties, high priority should be given to definition of the requirement and duration of the common trunk (as iterated in the U.E.M.S. ETR Internal Medicine document[4]).

Specialist training in Endocrinology

This involves a further 3–5 years of specialist training in Endocrinology, inclusive of diabetes, nutrition, andrology, reproductive and sexual medicine, bone and mineral disorders, transition in Endocrinology, as well as laboratory and diagnostic techniques in Endocrinology. This time should include the equivalent of 2 years full-time in Endocrinology as defined in section "Core training in Endocrinology." The remaining 1–3 years can either be spent at a department/institution of Endocrinology or used to acquire further experience in relevant medical disciplines and other clinical, laboratory, and research activities.

Specialist training is competence-based and not number-based. Endocrine societies of EU member states may define minimum average numbers required for imparting and internalising clinical skills at a recommended competence level in the specific local/national training setting. Training may include a variety of training activities including procedures, clinics, ward rounds, multidisciplinary meetings, clinical research, attendance at training courses, and medical simulation training, as well as clinical and research exchange programmes. Training activities are not uniform throughout Europe and depend on the national structures and processes. However, the common goal of specialist training should be the development of professional competency in the domains and competencies as described below. Trainers should accompany trainees, monitoring, and ensuring the gradual attainment of sufficient competence that would allow to entrust activities to trainees by continuous assessments.

Domains and competencies in the training

Definition of domains

To fulfill the four professional roles of a specialist in Endocrinology, the following list of domains of expertise and related competencies are to be achieved during training:

Learning objectives

Training includes acquisition of knowledge and expertise in all relevant disease groups, including those in the context of critical illness and trauma. For each domain, learning objectives are divided into "knowledge, skills, and attitudes" that are deemed necessary to achieve the required level of competencies:

- A: observer level (has knowledge of, describes)
- B: performs, manages, demonstrates under direct supervision
- C: performs, manages, demonstrates under distant supervision
- D: trainee can be reliably trusted to independently carry out the procedure or task

(a) Knowledge competencies are per definition required at competence level A.

(b) Clinical skills (competence level D):

Skills uniform in all clinical settings are reported only here and apply throughout. Skills required at various locations (intraoperatively in the operation room, postoperative in the recovery room, in the emergency room, intensive care unit, ward, outpatient clinic, and prehospital) are listed only once upon first appearance.

(c) Specific attitudes (competence level D):

Attitudes common to all clinical settings are reported only here and apply throughout. Effectively communicate and interact with patients and their relatives, including patients with impaired capacity of discernment and consent, and language barriers, treat them with respect and courtesy in answering all questions and concerns they may have.

(d) Independence (competence level D):

Trainee can be reliably trusted to independently perform the procedure or task. General knowledge and general skills already gained during undergraduate medical studies are not explicitly listed but are understood as a prerequisite and requirement for Endocrinology-specific knowledge. During residency, basic medical knowledge must be refreshed and enlarged by endocrine-specific content. Redundancy has been avoided in listing uniform skills and specific attitudes only once in the document.

Table 2. Some of the key areas of multidisciplinary team training.

Reproductive Endocrinology and infertility, jointly with gynaecologists and urologists
Growth disorders, disorders of sexual differentiation, and precocious/delayed puberty, jointly with paediatric endocrinologists
Neuroendocrinology and pituitary diseases, jointly with neurosurgeons, neuroradiologists, neuropathologists, neuro-ophthalmologists, and radiotherapists
Adrenal, thyroid, or parathyroid diseases, jointly with endocrine surgeons, radiologists, pathologists, and nuclear medicine physicians
Endocrine-related tumours, including thyroid tumours, adrenal tumours, neuroendocrine tumours, jointly with oncologists, surgeons, nuclear medicine physicians, radiologists, radiotherapists, and gastroenterologists
Diabetes and diabetes-related complications, jointly with interventional radiologists, surgeons, ophthalmologists, cardiologists, nephrologists, dermatologists, general practitioners, internists, endocrine nurses, dieticians, and psychologists
Obesity, jointly with dieticians, psychologists, endocrine nurses, and bariatric surgeons

Domains of specialty: details

(a) Knowledge
- Anatomy, physiology, pharmacology, toxicology, biochemistry, biology, psychology, and statistics
- Aetiology, pathophysiology, diagnosis, and treatment according to international standards of specific critical conditions in all patient cohorts including geriatric patients, perioperative patients after elective and emergency surgery, critically ill, and trauma patients

(b) Laboratory experience and dynamic tests

The trainee in Endocrinology should have access to an up-to-date endocrine laboratory service, and learn about hormone assay methods and, if trained to do so, contribute to its management. The trainee should be exposed to dynamic endocrine tests, which are often performed in dedicated facilities and/or day care hospitals. The trainee should be familiar with the most important preanalytical sources of hormonal results variability, as well as with the relativity of hormonal reference values depending on the patient's clinical context, and other relevant factors, such as age or population specificities. Endocrinologists should also understand the basic concepts and methodologies, as well as the impact of the increasingly available tests and the domains of molecular biology and genetics, which are relevant for clinical practice in Endocrinology.

(c) Multidisciplinary team (MDT) training

MDT training is important and mandatory because Endocrinologists typically work at the centre of a network of other medical specialists and health professionals. Some of the key MDT areas are provided in Table 2.

Endocrinology nontechnical skills

Areas of knowledge, clinical skills, and specific attitudes concerning endocrinology nontechnical skills are provided in Table S2.

Professionalism and ethics

Areas of knowledge, clinical skills, and specific attitudes concerning professionalism and ethics are provided in Table S3.

Patient safety and health economics

Areas of knowledge, clinical skills, and specific attitudes concerning patient safety and health economics are provided in Table S4.

Education, self-directed learning, and research

Areas of knowledge, clinical skills, and specific attitudes concerning education, self-directed learning and research are provided in Table S5.

Assessment and governance of training

For each trainee there should be a structured programme supervised by a trainer, and all the steps properly documented in a portfolio. In the portfolio, the trainee keeps a record of all the activities and perspectives related to his/her development. Data are collected from:

A) Learning experiences depicting the learning achievements of the trainee:
- Logbook summarising clinical experience, including diagnoses and treatments.
- Courses.
- Academic experience, scholarly work, presentations, and scientific articles.
- Personal development plan, with regular updates of progress in training, reflective reports, and reports of discussions with the tutor.

B) Assessment: Supervision of trainees requires ongoing supervision of their clinical duties. In addition, supervision of their training programme and schedule is required to ensure they are making sufficient progress, milestones are being achieved and the training curriculum is being covered. Therefore, the trainee needs both clinical and educational supervision. One supervisor may undertake both roles or the roles may be undertaken by separate individuals depending on local arrangements. It is advisable, however, that if there is a separate educational supervisor, he/she should be a clinician in the team and not be remote from the clinical environment where the trainee works.

A clinical supervisor may be responsible ideally for only one trainee, and the educational supervisor ideally should supervise no more than three trainees. A clinical supervisor oversees the trainee's ongoing work and provides constructive feedback. Although all elements of work in training posts must be supervised, as training progresses the trainee should have the opportunity for increasing autonomy, consistent with safe and effective patient care.

An educational supervisor oversees the trainee's educational progress in the context of the specialty curriculum. He/she reviews the trainee's logbook or e-logbook, sets goals, and provides direction and advice on a regular basis. Educational supervisors should be familiar with the use of assessment tools, how to support trainees in difficulty and how to give effective feedback including goal setting and career

advice. Ideally, educational supervisors should have attended a "Train the Trainers" course.

Assessment and appraisal of training

Educational supervisors should have an induction session with their trainees soon after enrollment, during which the training programme and curriculum are explained and how the various clinical aspects of training can be completed. In addition, each year the trainee should discuss and document a detailed training plan for the forthcoming year with his/her educational supervisor.

In the first year of specialised Endocrinology training, after common trunk of General Internal Medicine training, the trainee will require frequent formal feedback from their clinical and/or educational supervisor two to three times.

Established assessment tools for appraisal of clinical knowledge, skills, and professional attributes should be used on an ongoing basis during training, and documentation of these appraisals should be maintained in the trainee's logbook. The assessment of clinical skills, especially problem-oriented history taking, physical examination, diagnostic decision-making ability, appropriate selection of investigations, investigation interpretation, and clinical judgement, are particularly important. Different workplace assessment instruments may be used in various countries or institutions to document these skills. Workplace assessment of trainee's behaviour and professionalism is normally carried out by patient surveys and feedback from colleagues and other members of the relevant MDT. Assessment of procedural skills needs to be documented by the trainee in conjunction with the trainer. This is normally performed by direct observation of the trainee's procedural skills.

Formal appraisal of training progression should be jointly undertaken by the trainee and educational supervisor on a yearly basis by reviewing the trainee's logbook and confirming evidence of the attainment of competencies in knowledge, clinical skills and professional attributes and discussing other matters of relevance to completion of training. Models based on entrustable professional activities (EPAs) to ensure documented evidence for skill acquisition may be used. EPAs derive from workplace-based assessment and comprise essential tasks/competencies that the trainee is expected to perform independently. The appraisal of training before entering the final year is particularly important as deficits in training can be identified and plans for correction made; for this reason, it is advisable that this appraisal involves an external assessor as well as the usual educational supervisor.

Formal standardised exams during the training programme and/or at the end of training, conducted locally, regionally, nationally and/or internationally, constitute important tools for assessing and certifying the general knowledge in Endocrinology of the trainee.

Governance of training

The governance of an individual's training programme is the responsibility of the programme director and the institution(s) in which the training programme is being delivered. The trainer will be accountable to the programme director for delivering the required training in his/her area of practice. Training requirements for trainers and a process for recognition as a trainer will be expected. Trainers will be expected to have achieved the appropriate nationally recognised qualification to allow them to practice as a specialist in Endocrinology.

A programme director would be someone who has been or still is a trainer and who has considerable knowledge and experience in training doctors. Experienced trainers and programme directors must be active in clinical practice.

The director of training should have at least 5 years of experience post specialist accreditation, must have a sound practical knowledge of the broad field of Endocrinology and must be recognised by the national authority. Likewise, the medical staff acting as educational supervisors should be actively practicing in Endocrinology and be committed to residency training.

Table 3. Core competencies for trainers.

Know all aspects of the Endocrinology curriculum and the problems related to its clinical implementation
Have experience in teaching theoretical aspects of endocrinological diseases and acquisition of skills in procedures
Be familiar with modern medical education principles and receive regular updates in leadership and mentorship
Understand the needs of the trainees to achieve the goals of the training programme and help them to progress throughout the training period
Be able to promote in their mentees scientific curiosity, professionalism, ethical behaviours, and humanistic values

Core competencies for trainers

Core competencies for trainers are provided in Table 3. Quality management for trainers should show itself to be committed to specialist education and provide appropriate time, space, facilities, and funding to protect the needs of education from the demands of service. The members of the faculty should be experienced endocrinologists and teachers, committing time, effort, and enthusiasm to the training programme. They should regularly attend interdisciplinary meetings with surgeons, pathologists, and radiologists. The faculty should be large enough to supervise the clinical and practical work of the trainees.

Training requirements for training centres

Training requirements for training institutions, and the process for recognition as a training centre in Endocrinology, should be based in a University department, a University affiliated institution or in those with an equivalent educational, and/or research programme. The training centre should be located in a hospital or institution, which also has surgical, intensive care, radiology, and access to histopathology, biochemistry, microbiology, and haematology laboratory facilities. The hospital/institution should also have a broad array of other medical specialty services such as cardiology, pneumonology, gastroenterology, haematology, nephrology, infectious disease, and oncology.

The training centre should be located in suitable buildings and must have facilities for inpatients and outpatients as well as a diabetes unit and an endocrine clinical investigation room/laboratory. Satisfactory premises for education are needed with teaching space, library, and contemporary information technology and audio–visual teaching aids.

Rotation-training centres and single affiliated/accredited training centres must be recognised by their national authorities to be of such quality and to provide sufficient training for the specialty of Endocrinology. Some units, with high-quality endocrine clinical facilities and training, may lack the

full complement of training facilities and opportunities. These units may be recognised as a rotation-training centre of sufficient merit if the trainee can receive sufficient training for a period of 1–2 years. A trainee may therefore fulfill the training by rotating between a number of recognised training centres.

Acknowledgments

We are grateful to all ECAS National Societies who endorsed the ESE Curriculum and Training Recommendation in Endocrinology: Albanian Society of Endocrinology and Diabetology; Association of Endocrinologists and Diabetologists of the Republic of Srpska; Austrian Society for Endocrinology and Metabolism; Belgian Endocrine Society; Bosnia and Herzegovina Society of Endocrinology and Diabetology; Bulgarian Society of Endocrinology; Croatian Endocrine Society; Croatian Society for Endocrinology and Diabetology; Croatian Society for Diabetes and Metabolic Disorders; Cyprus Endocrine Society; Czech Endocrine Society; Danish Endocrine Society; Endocrinology Association of Montenegro; Estonian Endocrine Society; Finnish Endocrine Society; French Endocrine Society; Georgian Association of Endocrinology and Metabolism; German Society of Endocrinology; Hellenic Endocrine Society; Hungarian Society of Endocrinology and Metabolism; Icelandic Endocrine Society; Irish Endocrine Society; Israel Endocrine Society; Italian Association of Clinical Endocrinologists; Italian Endocrine Society; Latvian Association of Endocrinology; Lebanese Society of Endocrinology, Diabetes and Lipids; Lithuanian Society for Endocrinology; Macedonian Scientific Association of Endocrinologists and Diabetologists; Netherlands Society for Endocrinology; Norwegian Society of Endocrinology; Polish Society of Endocrinology; Polish Society of Gynecological Endocrinology; Portuguese Society of Endocrinology, Diabetes and Metabolism; Romanian Psychoneuroendocrine Society; Romanian Society of Endocrinology; Serbian Endocrine Society; Slovak Endocrine Society; Slovenian Endocrine Society; Society for Endocrinology UK; Society of Endocrinologists from Republic of Moldova; Society of Endocrinology and Metabolism of Turkey; Spanish Society of Endocrinology and Nutrition; Swedish Endocrine Society; Swiss Society of Endocrinology and Diabetes; Tunisian Society of Endocrinology; Ukraine Diabetology Association; Ukrainian Association of Clinical Endocrinologists. The ESE Curriculum and Training Recommendation in Endocrinology has also been endorsed by the General Assembly of the U.E.M.S. Section and Board of Endocrinology.

Supplementary material

Supplementary material is available at *European Journal of Endocrinology* online.

Funding

The authors have no funding to report for this work.

Authors' contributions

Anton Luger (Conceptualization [equal], Methodology [equal], Project administration [equal], Writing—original draft [equal], Writing—review & editing [equal]), Maeve Durkan (Conceptualization [equal], Methodology [equal], Project administration [equal], Writing—original draft [equal], Writing—review & editing [equal]), Mirjam Christ-Crain (Conceptualization [equal], Methodology [equal], Project administration [equal], Writing—original draft [equal], Writing—review & editing [equal]), and Pedro Marques (Conceptualization [equal], Methodology [equal], Project administration [equal], Writing—original draft [equal], Writing—review & editing [equal])

Conflict of interest: Mirjam Christ-Crain is on the editorial board of the European Journal of Endocrinology. Mirjam Christ-Crain was not involved in the review or editorial process for this manuscript, on which she is listed as author. The other authors have no conflict of interest.

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