

ARTIGO DE PERSPECTIVA

Anaesthesia Training and Continuous Education in Greece: Current Situation and Future Perspectives

Formação em Anestesia e Educação Contínua na Grécia: Situação Atual e Perspectivas Futuras

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Afiação

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Palavras-chave

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INTRODUCTION

The field of anaesthesiology has evolved from being primarily focused on the operating room towards taking a more comprehensive approach to care throughout the entire perioperative period. Intensive care medicine, emergency medicine, and pain medicine are integrated into the clinical specialty in many countries. As a result, additional universal competencies and shared principles need to be established.

In Greece the ultimate goal of anaesthesia training, as stated in the relevant governmental document, is to ensure specialists with a high level of competence and skills. These specialists should be able to work independently in various clinical contexts, including perioperative medicine, emergency and intensive care medicine, chronic pain and palliative care, without jeopardizing patient safety.¹ The updated 2019 Educational Program follows the guidelines of the European Board of Anaesthesiology, encompassing all theoretical and practical learning objectives, including the management of simple and complex cases. The internship is always supervised by a qualified anaesthetist, ensuring responsible and hands-on experience.¹

TRAINING OF RESIDENTS

Training is time- and count-based, lasts for 5 years and consists of 2 cycles, one basic (2 years) and one advanced (3 years).¹ The former can be attended in any training centre, whereas the latter only in full specialisation centres and/or special training centres, for training in specific anaesthetic techniques and types of operations. Residents also have the

option to train abroad for up to 6 months, subject to approval from the Central Health Council.^{1,2} Throughout the training period, residents must maintain a logbook documenting their anaesthetic practice in compliance with Greek safety and anaesthesia training laws.^{1,3} By the end of the training period the trainee must provide evidence of accomplishments in the relevant logbook. Table 1 summarizes the training per specialty and the allocated time period for each one and Table 2 lists the minimum number of specific anaesthetic techniques required to complete the training. Moreover, during the training period the resident must participate in 100 invasive procedures (eg cardiac, gastrointestinal) carried under anaesthesia out of the operating theatre.¹ A minimum number of 500 emergency cases, 100 operations for life-threatening situations, 100 day cases and 220 on-call shifts are also required.¹ Training focuses on knowledge and skills. The residents have to follow courses and seminars on basic and advanced knowledge and skills, such as basic and advanced life support, trauma and paediatric life support, use of anaesthesia machine, haemodynamic control and electrocardiography, lung tests and chest imaging, airway management, mechanical ventilation, perioperative ultrasonography and non-technical skills.¹ In terms of practical skills, the logbook has to provide evidence for at least 100 cases of cardiopulmonary resuscitation, 80 central venous catheters' insertion, 100 arterial catheters' insertion, 30 double-lumen endotracheal tubes' or endobronchial blockers' insertions and 20 cases of bronchoscopy and fibreoptic intubation.¹ Training can take place in 4 types of training centres: full, partial, special and short-term training centres.¹ Full training centres are the ones with a minimum number of 4000 operations per year, covering all surgical domains. In full training centres the trainees are entitled to

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Table 1. Training by Specialty (Modified from¹)

Specialty	Duration of Training (months)	Minimum Number of Operations or Procedures
General Surgery	18	650
Orthopaedics	3	100
Ear-Nose-Throat & Mandibular Surgery	3	60
Ophthalmology	1	20
Neurosurgery	3	30
Thoracic Surgery	3	100
Cardiac Surgery	3	30
Vascular Surgery	3	50
Obstetrics	4	100 (obstetric analgesia & caesarean sections)
Gynaecology	2	60
Urology	2	60
Paediatric Surgery	4	100
Emergency Medicine	2	-
Intensive Care	6	- 6 chest tube insertions - 6 cases of continuous veno-venous filtration - 6 tracheostomies (either surgical or percutaneous) - 12 bronchoscopies - 6 measurements of intraabdominal pressure - 6 measurements of intracranial pressure
Pain Clinic	3	40 chronic pain cases

study leave at least once a year. Partial training centres are the ones with a minimum number of 3000 operations per year in the fields of general surgery, orthopaedics, ear-nose-throat surgery, ophthalmology, urology and gynaecology. Special training centres offer the opportunity for training in paediatric anaesthesia, cardiac, thoracic and vascular surgery, obstetrics, pain treatment and palliative care. Short-term training centres focus on specific types of operations and anaesthetic techniques and offer up to 30 days of training, in order for the residents to fill in gaps in their logbook. The aforementioned classification of training centres also relies on their staff, infrastructure, equipment and training program. The minimum ratio of trainers to trainees is determined to 1:3 and the maximum number of trainees depends on the type of training centres.¹ The training program in each centre focuses both on theoretical knowledge and practical deeds. According to the relevant governmental document, there should be a yearly continuous education program with scientific meetings, literature review, clinical seminars and courses, morbidity and mortality meetings and auditing.¹

At the end of the training period in each centre the director of the training centre must approve the training certificate based on the resident's logbook and portfolio.¹ It is not mandatory for the director to also be the education supervisor. In addition to the official approval, ongoing assessment must occur during both the basic and advanced specialization cycles. Knowledge, skills, judgment and attitude progress should be consistently monitored.¹⁻³

Formal assessment takes place in order to become certified as specialist anaesthetist. Assessment consists of both written

and oral exams and success in both is required in order to be accredited as specialist anaesthetist. There are only two organised examination centres, one in Athens and one in Thessaloniki. There are no specific criteria or interviews for selecting residents to start training in anaesthesia. Doctors simply submit their applications to a waiting list using a special electronic application accessible through the Unified Digital Portal of the Public Administration.⁴ However, currently there is a shortage of anaesthetists in Greece. To address this matter, doctors with backgrounds in other medical specialties are allowed to train in anaesthesia as supernumerary trainees in salaried positions, while also receiving a small extra financial allowance.⁵

FURTHER EDUCATION OF SPECIALISTS

Review and assessment of anaesthetic practice, with an aim to improve it, is recommended by the Central Health Council in its guidelines for safe anaesthesia and sedation. In this direction, critical incidents' reporting, multidisciplinary morbidity and mortality meetings and local audits are encouraged.⁶ Continuous education in anaesthesiology for specialists is mainly accomplished through the courses organized by the Committees for Continuous Education in Anaesthesiology and Intensive Care (CEEA committees) in two regional centres, one based in Athens and one in Thessaloniki. These two centres provide refresher courses according to the same schedule, a cycle of six courses covering all the fields of anaesthesia, intensive care, emergency

Table 2. Minimum Required Number of Anaesthetic Techniques¹

Technique	Minimum Required Number
General Anaesthesia – Endotracheal Intubation	750
General Anaesthesia – Laryngeal Mask Airway (LMA)	50
Intubation through LMA or Second Generation Supraglottic Devices	10
Epidural Anaesthesia	100
Combined General – Epidural Anaesthesia	100
Spinal Anaesthesia	150
Peripheral Nerve Blocks	50
Acute Pain Treatment	100
Monitored Anaesthesia Care	50
Neonatal Tracheal Intubation	10

medicine and acute pain management, in compliance to the CEEA of the European Society of Anaesthesiology and Intensive Care (ESAIC). In Greece there is no recertification program for specialists, either mandatory or voluntary. In order to demonstrate their knowledge and engagement in lifelong learning, specialist anaesthetists are motivated to earn CME/CPD activities credits, for instance by participating in workshops and national or international conferences, teaching, writing scientific articles, spending time as visiting doctors and/or e-learning. For anaesthetists working in public health system, these credits are evaluated during a process of professional development in three steps. Firstly, after completing five years of continuous employment, secondly after eight and lastly after fifteen years of total employment in public health system. This process is accomplished in the hospital by local committees, but without strict and well described assessment methods.

DISCUSSION

The training in anaesthesia program, as regulated by the Greek legislature, is in many aspects in line with the European Training Requirements.⁷ The practice of anaesthesiology in Europe has evolved towards focusing more on comprehensive and holistic perioperative care,⁷ influencing the direction of anaesthesia training in Greece; nowadays there is a greater emphasis on non-technical skills, attitude, and professionalism. The field of anaesthesia continues to be poorly understood and underestimated as a career choice for graduating medical students. Highlighting the perioperative aspect of anaesthesiology can be a compelling draw for new physicians seeking a vibrant and varied work environment. This emphasis can help them avoid feeling isolated in the operating room and instead feel more visible and connected to patients and the public. The Greek Society of Anaesthesiology constantly highlights the need to align as much as possible with the European Training Requirements. To achieve this goal, the society provides educational opportunities, including theoretical updates through webinars and the organization of practical

clinical courses. Additionally, the society offers trainees the chance to actively participate in national meetings and other educational activities. A major drawback in the training is the fact that it is time- and count-based instead of competence-based. However, it is competence-based training that actually assesses the final outcome of training; in the field of anaesthesiology this is of paramount importance within the context of patients' safety and quality of care.⁸ Time- and count-based training focus on activities during training but do not guarantee the desired outcome.⁸ Resources, both in terms of human resources and infrastructure, are major barriers for the training. Currently many hospitals are understaffed and have reduced their activities, while at the same time not all hospitals are equally equipped. At the same time, there is no established mentoring program, which could enhance learning and facilitate formative assessment throughout the training period. Mentorship is considered to have a constructive role in the improvement of educational goal achievements of anaesthesiology residents⁹; the lack of established mentoring programs is therefore a source of concern in the Greek curriculum.

The assessment of training centres and the trainers themselves is currently lacking. There is a notable absence of national auditing procedures to evaluate the standing and efficacy of our training curriculum. Furthermore, while all doctors undergo assessment by the clinical director of their unit, there is no structured revalidation or recertification program on a national level. In a field traditionally characterized by self-regulation, the implementation of revalidation programs is essential for identifying areas of poor performance.¹⁰ It is reasonable to assume that the absence of revalidation for specialists could compromise the quality of training.

In conclusion, although there is a driving force to improve the new generation of anaesthetists' training in Greece, many challenges still exist. Compared to the past decades, training in anaesthesia has improved but we still have a long way to go. Comprehensive assessment of knowledge, skills and attitudes is vital to train competent anaesthetists and ensure safe care.

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GS: Conception, design and writing of the manuscript

PS: Designing and writing the manuscript

VN: Supervision and critical revision of the manuscript

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