

ARTIGO DE PERSPECTIVA

# Between Mountains and Modern Medicine: Adaptability in Anesthesia Training in Switzerland

## *Entre Montanhas e a Medicina Moderna: Adaptabilidade na Formação em Anestesia na Suíça*

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Anaesthesiology/education; Clinical Competence; Curriculum; Switzerland

### Palavras-chave

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## ABSTRACT

Switzerland's healthcare system is globally recognised for its access to care, supported by a robust network of hospitals and private healthcare providers. The Swiss anaesthesia workforce consists of approximately 2700 physicians, including specialists and trainees, with a notable presence of international medical graduates, predominantly from Germany. The country also relies heavily on nurse anaesthetists, who undergo extensive training to support anaesthesia procedures under physician supervision. Becoming an anaesthesia trainee in Switzerland requires a medical degree compliant with EU or EFTA standards and proficiency in one of the three official languages (German, French, or Italian). The residency program is regionally divided, with different structures in the German-speaking and French-Italian regions. The Swiss anaesthesia residency spans five years and emphasises a competency-based curriculum that includes mandatory anaesthesiology and intensive care rotations. Training facilities are categorised into four levels (A1, A2, B, C) based on their training quality and scope. Residents undergo rigorous assessment through continuous evaluations, practical and written exams, and contributions to medical literature. The Swiss Institute for Post-Graduate and Continuous Medical Education (SIWF/FMH) oversees the certification process. Challenges in the training system include managing workload and stress, with ongoing campaigns to reduce clinical hours from 50 to 42 per week and ensure teaching time. Long waiting times for rotations in A Level clinics and the need to match the growing elderly population with sufficient trained anaesthesiologists also present significant challenges. Addressing these issues through curriculum development, workload management, and increased training opportunities is crucial for maintaining the high standards of anaesthesiology in Switzerland and meeting future healthcare demands. Addressing these issues through curriculum development, workload management, and increased training opportunities is crucial for maintaining the high standards of anaesthesiology in Switzerland and meeting future healthcare demands.

## RESUMO

O sistema de saúde da Suíça é globalmente reconhecido pelo seu acesso aos cuidados, apoiado por uma robusta rede de hospitais e prestadores de serviços de saúde privados. A força de trabalho em Anestesiologia na Suíça consiste em aproximadamente 2700 médicos, incluindo especialistas e internos, com uma presença notável de graduados médicos internacionais, predominantemente da Alemanha. O país também depende fortemente de enfermeiros anestesistas, que passam por um extenso treino para apoiar os procedimentos de anestesia sob supervisão médica. Tornar-se um interno em Anestesiologia na Suíça requer um diploma de medicina compatível com os padrões da UE ou EFTA e proficiência em um dos três idiomas oficiais (alemão, francês ou italiano). O programa de residência é regionalmente dividido, com estruturas diferentes nas regiões de língua alemã e nas regiões de língua francesa e italiana. O internato de Anestesiologia na Suíça dura cinco anos e enfatiza um currículo baseado em competências que inclui rotações obrigatórias em anestesiologia e cuidados intensivos. As instalações formativas são categorizadas em quatro níveis (A1, A2, B, C) com base na qualidade e abrangência da oferta anestésica. Os internos passam por uma rigorosa avaliação através de avaliações contínuas, exames práticos e escritos, e contribuições para a literatura médica. O Swiss Institute for Post-Graduate and Continuous Medical Education (SIWF/FMH) supervisiona o processo de certificação. Os desafios no sistema de ensino incluem a gestão da carga de trabalho e do stress, com campanhas em andamento para reduzir as horas clínicas de 50 para 42 por semana e garantir tempo de ensino. Longos tempos de espera para rotações em clínicas de Nível A e a necessidade de corresponder à crescente população idosa com anestesiolistas treinados suficientes também apresentam desafios significativos. Abordar essas questões por meio do desenvolvimento curricular, gestão da carga de trabalho e aumento das oportunidades de formação é crucial para manter os altos padrões da anestesiologia na Suíça e atender às necessidades futuras de saúde.

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## INTRODUCTION

The healthcare system in Switzerland ranks among the top five globally in terms of access to care.<sup>1,2</sup> This high ranking is attributed to the country's extensive hospital network and the frequent availability of private healthcare, which provide broad access to general and specialist care. The Swiss anaesthesia workforce comprises around 2700 physicians, including specialists and trainees, with an average age of 45 years, 44% of them being women. While 68% of these anesthesiologists are Swiss, a significant portion of international medical graduates (IMGs) in this field come from Germany.<sup>3</sup> In addition to physician anaesthesia providers, Switzerland is one of the European countries relying heavily on nurse anaesthetists as part of the anaesthesia workforce. These healthcare professionals receive two years of specific training as nurse anaesthetists in addition to a Bachelor's degree in nursing (<https://siga-fsia.ch/anaesthesiepflege/nds/>) and assist in technical aspects of anaesthesia (including intubation), preparation for and administration of anaesthesia (including opioids), and monitoring of anaesthesia under the direct supervision of a physician specialist anesthesiologist. Over the past 20 years, the Treaty on the European Union has facilitated the freedom of movement within the EU and EFTA countries, simplifying the transition for foreign medical graduates and specialists to Switzerland.<sup>4</sup> As of 2022, more than 3000 IMGs had obtained licenses to practice in Switzerland, with most coming from neighbouring countries such as Germany, Italy, France, Austria, and Romania.<sup>5</sup> The Swiss Institute for Post-Graduate and Continuous Medical Education (SIWF/FMH) is responsible for recognising foreign specialist diplomas or subspecialties and processing applications according to national societies' curricula. Recently, the Swiss Society for Anesthesiology and Perioperative Medicine (SSAPM) has expanded its training curriculum to address the needs of an ageing population, incorporating aspects of perioperative medicine.<sup>6</sup> According to the annual sociodemographic evaluation of all physicians in post-graduate training,<sup>7</sup> in 2023 around 800 residents were training in anaesthesiology, of which 218 were international medical graduates from EU countries and 17 had graduated in non-EU countries.

## THE PATH TO BECOMING AN ANESTHESIA RESIDENT

To become a medical doctor in Switzerland, one must have a medical degree according to EU Directive 2005/36/eg<sup>8</sup> or an equivalent according to the EFTA Convention. Additionally, one must prove proficiency in one of the three official languages: German, French or Italian. The required level is B2, according to the Common European Framework of Reference for Languages. Language knowledge can be proven in the following ways: an international knowledge Exam not older than 6 years, medical studies done in one of the

languages or proof of using the language at work for at least three years. In comparison to Germany, there is no additional medical language knowledge exam.

In Switzerland, there are two regional systems of anaesthesia training. The structure in the German part is similar to that of Germany, and it is more liberal. The resident can create their residency path by applying to different hospitals for the necessary rotations and experience. In the french-italian part, the anaesthesia residency is organised by COMASUL (COMmission Latine d'engagement pour l'Anesthésie et Suisse Latine), a commission comprising the main hospitals in the region, which aims to regulate the entrance into the residency program and coordinate the clinical rotation along the whole residency. The pre-requisite to entering the program is two years of internal medicine experience because the trainees are usually prepared for the double specialisation of anesthesiology-intensive medicine. After entering the program, all the necessary clinical rotations will be organised in the main university, cantonal hospital, or peripheral affiliated hospitals. The trainees can work part-time during the training programme, depending on the hospital. The salary depends on the number of years of experience and the canton, which is public.

## STRUCTURE AND DURATION OF THE ANESTHESIA TRAINING PROGRAM

The body coordinating the residency structure and the requirements for a specialist title, as well as subspecialties in anesthesiology, is the SSAPM through its Continuous Education Commission (<https://www.ssapm.ch/fr/a-propos/organisation/commissions/commission-de-formation-postgraduate>). The society is also in charge of organising exams, which take place yearly. The main objective of the Anaesthesiology training programme in Switzerland is to equip medical professionals with the specialised knowledge and skills required to perform independently across all aspects of anesthesiology. The curriculum is designed to enhance proficiency in critical competencies, from administering anaesthesia for various surgical procedures to managing emergencies and critical care. The Swiss curriculum for post-graduate training in anesthesiology by the Swiss Society for Anesthesiology and Perioperative Medicine (SSAPM) is based on the CanMEDs model,<sup>9,10</sup> which addresses the various roles of the physician as a medical expert, communicator, collaborator, manager, health advocate, scholar and professional and is currently under revision to develop into a competence-based curriculum involving entrustable professional activities (EPA) in anesthesiology as well as perioperative medicine.<sup>11</sup> Post-graduate training takes 5 years and consists of 2 mandatory components: a minimum of 4 years of training in anesthesiology and 6 months of training in intensive care medicine. Post-graduate training must occur in at least 2 different departments.<sup>6</sup> The first 2 years of training focus on acquiring general

competencies. The subsequent 2 to 2.5 years are dedicated to acquiring specific competencies and deepening the general ones. Most of the training must occur at recognised Category A training facilities, with at least one year at a top-tier Category A1 facility (Table 1). For scope, we recommend the recently published survey results by Abramovic *et al* on post-graduate training designs in anaesthesiology in Europe.<sup>12</sup> This structured categorisation helps ensure that all training facilities provide a certain baseline of education and practical experience tailored to their classification. It also helps prospective trainees choose their training sites based on the level of exposure and specialisation they are interested in pursuing. By adhering to these categories, the training program aims to maintain high standards across all training facilities, ensuring that all anesthesiology trainees in Switzerland receive quality education and hands-on experience commensurate with their training level. Trainees must rotate through different clinical settings, including at least one year at a secondary training site, to ensure a broad-based clinical experience. Additionally, trainees can spend up to one year on research relevant to anesthesiology, which can count towards their training. Participation in an MD/PhD program or similar academic pursuits can also be credited.

## CONTENT AND COMPETENCIES

### General Competencies

- Comprehensive understanding of diseases and their treatments;
- Skills in preoperative, intraoperative, and postoperative patient care;
- Expertise in emergency medicine and critical care situations;
- Proficiency in anesthetic techniques and pain management;
- Quality Management and Health Economics, Ethics;
- Anesthesia non-technical skills.

### Specific Competencies

- Specialised skills in obstetric anaesthesia, neuroanaesthesia, thoracic and cardiovascular surgery anaesthesia, and pediatric anaesthesia;
- Management of difficult airways and anesthesia in Ear-Nose-Throat and Oral and Maxillofacial Surgery;
- Knowledge and skills in managing anaesthesia outside the traditional operating room environment;
- Expertise in managing patients with chronic pain, including those in palliative care.

### Practical Training and Hands-on Experience

- In Switzerland, simulation is currently available in large training centres. Simulation and technology play crucial roles in the training process, with plans to include simulation in the national curriculum. Residents learn through hands-on training in various procedures and

**Table 1. The categorisation of training facilities into four levels - A1, A2, B, C - is a method used to standardise the quality and scope of training provided in the field of anesthesiology in Switzerland. This categorisation ensures that trainees receive consistent and comprehensive education and training across various institutions**

Category	Characteristics
<b>Category A1</b>	Facilities in this category represent the highest level of training excellence and are expected to offer the most comprehensive range of services and training opportunities. These facilities must cover all nine general competencies and meet high standards for specific competencies. They must also handle a large volume of cases, generally exceeding 12 500 anesthetics per year. Expected to have advanced educational and technical resources for training in all specialized areas of anesthesiology. Typically involved in cutting-edge research and may have academic affiliations.
<b>Category A2</b>	Slightly less comprehensive than A1, but still offering a broad range of training opportunities and substantial case loads. Must cover at least eight out of the nine general competencies and have a substantial case load (between 7500 and 12 499 anesthetics per year). Well-equipped for most anesthesiology procedures and scenarios, though may not have the same breadth of research opportunities as A1 facilities.
<b>Category B</b>	These facilities offer a good range of training opportunities but on a smaller scale than A1 and A2. Must cover at least seven out of the nine general competencies and handle a moderate case load (between 3500 and 7499 anesthetics per year). Adequately equipped for a range of common anesthesiology practices and some specialized areas.
<b>Category C</b>	These are smaller facilities that provide foundational training in anesthesiology. Must cover at least six out of the nine general competencies and handle smaller case load (more than 1000 anesthetics per year). Focused more on general anesthesiology training, with fewer opportunities for specialized or high-complexity cases.

techniques.<sup>13</sup>

- Regarding training in Point-of-Care Ultrasound, there are several courses offered through the SGUM( Swiss Society for Ultrasound in Medicine).

### Assessment and Evaluation

Each candidate must maintain a detailed electronic logbook that tracks the progress of the specified learning objectives and competencies throughout the training period. This logbook serves as a personal record of skills development and is a crucial component of the assessment process. The continuous evaluation is done using a Mini-Clinical Evaluation Exercise (MiniCeX) or Direct Observation of Procedural Skills (DOPS) for each year of residency, at least four being mandatory.<sup>14</sup> Candidates must also complete specific courses, including a mandatory two-day course in emergency medicine. In addition, they are required to contribute to the medical literature as first authors, co-authors, or last authors on peer-reviewed scientific papers or produce a thesis as part of a university degree program. The program culminates in a rigorous examination process including written and oral components. The written exam

is conducted under the auspices of the European Society of Anaesthesiology and Intensive Care (ESAIC). The oral exam tests the candidate's practical and theoretical knowledge through case discussions based on the curriculum, and is run by the SSAPM.

## Licensing and Certification

The Swiss Institute for Post-Graduate and Continuous Medical Education (SIWF/FMH) is the national structure regulating continuous education programs. The Institute also provides the platform for the eLogbook. Its Title Commission evaluates applications for the specialist title.

## Challenges and Opportunities in the Training System

In Switzerland, the official working time for trainees is 50 hours/week, with day shifts usually lasting 10 hours and night shifts of 12 hours. Challenges include managing workload and stress with ongoing campaigns to reduce clinical hours and ensure teaching time. Additionally, long waiting times for rotations in A Level clinics pose issues. Currently, there is a nationwide campaign entitled '42+4 hours week' organised by the Association of Swiss Assistant and Senior Physicians (Verband Schweizerischer Assistenz- und Oberärztinnen und -ärzte VSAO) which aims to reduce the number of clinical hours at 42 hours/week and assure 4 hours of teaching ([https://vsao.ch/arbeitsbedingungen/42plus4/#pll\\_switcher](https://vsao.ch/arbeitsbedingungen/42plus4/#pll_switcher)).

## CONCLUSION

Switzerland's anaesthesia training program is robust, offering comprehensive training and numerous opportunities for specialisation. However, challenges such as workload management and clinic rotations need addressing. Prospects include continued curriculum development and potential reforms to enhance training quality further.

## CONTRIBUTORSHIP STATEMENT / DECLARAÇÃO DE CONTRIBUIÇÃO

IC, TD and JBE: Designing, writing the article, final revision and approval of the version to be published

All the authors contributed equally to the design and writing of the manuscript. All approved the final version to be published

*IC, TD e JBE: Conceção do estudo, escrita do artigo, revisão final e aprovação da versão a ser publicada*

*Todos os autores contribuíram de igual forma para o desenho e escrita do manuscrito. Todos aprovaram a versão final a ser publicada*

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