

## EDITORIAL VIEW

## ANESTHESIOLOGY TRAINING

# Training, certification, and future perspective in Japanese anesthesiologists

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## SUMMARY

This invited editorial has been written by the esteemed Professor Nobuyasu Komasaawa, on the special request of the editor-in-chief of Anaesthesia, Pain & Intensive Care, with the aim to allow our readers to be knowledgeable about the diverse routes and modus operandi of training in the field of anesthesiology in different countries around the world. The training in specialized medical fields might differ from country to country, depending upon the available facilities and the expertise of the trainers. The recent induction of simulation and artificial intelligence (AI) into medicine has forced the trainers to think beyond their local circle of proficiency and competency, and to march ahead to equip their trainees with the current knowledge, techniques and skills.

This editorial highlights the emphasis laid during the training of anesthesiologists in Japan. Readers from other countries are invited to share the current trends of training in their healthcare systems, especially pertaining to anesthesiology, pain management, intensive care and resuscitation.

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## Path to Becoming an Anesthesiologist in Japan: Training, Skills, and Certification

In Japan, it is common for students to enroll in medical school directly after completing high school, typically at the ages of 18 to 20 years. Upon successfully finishing medical school and earning a Medical Doctor degree (M.D.) through the national examination, individuals are generally required to undergo a compulsory two-year clinical training period (initial training) between the ages of 24 and 26. Subsequently, they choose a specialization in fields like surgery, pediatrics, or anesthesiology, which entails an additional four years of training.<sup>1</sup> Anesthesiologists in Japan are required to demonstrate basic skills not only in perioperative management but also in pain clinics, palliative care, in-hospital emergencies, and intensive care.

Proficiency in promptly and appropriately addressing

rare complications is also expected.<sup>2</sup> The four-year anesthesiology specialized training involves acquiring comprehensive competencies in these diverse areas, emphasizing independent acquisition of basic knowledge, hands-on clinical experience, and skills enhancement. After four years of anesthesiology training including management of cardiac, brain, obstetrics, and pediatric surgery, they are permitted to take an exam for 'Board Certified Anesthesiologist', a comprehensive summative assessment.

The 'Board Certified Anesthesiologist' Examination, a certification assessment, consists of three formats: a written exam evaluating fundamental knowledge, an oral examination assessing "non-technical skills," and a practical exam evaluating technical skills, primarily in airway management and invasive procedures. The practical exam also considers non-technical skills related to preventing serious complications and initiating early responses.

## Empowering Anesthesiologists in the

## Era of Healthcare Digital Transformation: A Focus on Critical Thinking and Simulation-based Medical Education

In today's information-driven society, big data is aggregated into cyberspace through sensors. Third-generation artificial intelligence (AI) enables 'just in time' information provision, contributing to new value creation, especially in healthcare all over the world.<sup>3</sup> This marks the arrival of an information-driven healthcare system including perioperative medicine. In the AI era, anesthesiologist education emphasizes fostering "critical thinking" skills, including the ability to evaluate vast amounts of information.<sup>4</sup>

For residents in the healthcare digital transformation era, acquiring "learning through thinking" skills via simulation education is believed to enable adaptability to changes in the working environment and effective handling of unpredictable future perioperative care.

The author has conducted an educational seminar for residents preparing for the practical exam within the educational hospital group in Japan. The content covered secondary life-saving measures, ultrasound-guided central venous catheterization, airway management, and expanded to include procedures like separated lung ventilation and ultrasound-guided nerve blocks. Each topic was based on pre-learning following practice guidelines in their respective fields, incorporating hands-on and scenario-based training with simulators. A Problem-Based Learning (PBL)-oriented workshop focused on improving non-technical skills in perioperative crisis management, addressing primarily secondary life-saving measures evaluated in the oral examination.<sup>5,6</sup> The training structured the content of the perioperative advanced life support into

four areas: airway management, circulation management, central venous management, and pain management.

Continuous discussions on the evolving image of an anesthesiologist in digital healthcare and the responsibility to cultivate an anesthesiologist capable of adapting to change are crucial. In this context, the experience of simulation education, including thinking skills, is considered to be of effective potential.<sup>7</sup>

### Conflict of interest

No conflict of interest declared by the author.

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