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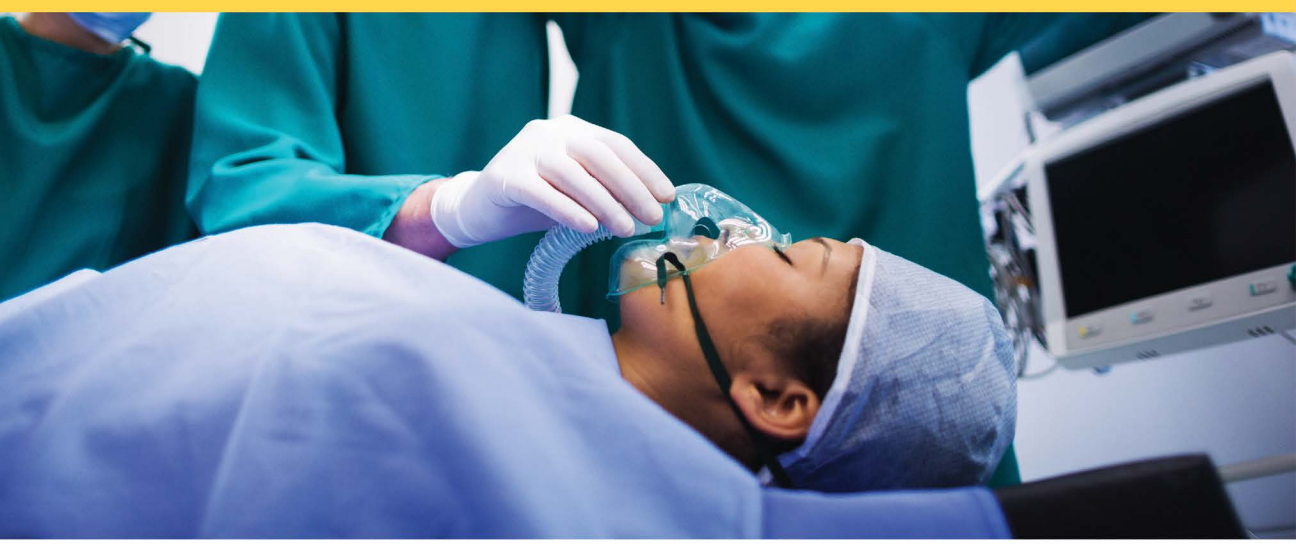
Essentials of
Anesthesia & Critical Care

As per the Competency Based Medical Education Curriculum (NMC)



Anshul Jain
Pradeep Bhatia

2nd Edition

JAYPEE

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CHAPTER

3 Career Opportunities in Anesthesia

Swati Chhabra, Rakesh Kumar, Darshana Rathod

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INTRODUCTION

Anesthesiologists are physicians with training in perioperative care, critical care medicine and pain management. Patient safety during the perioperative phase is the responsibility of anesthesiologists so much so that they are known as the 'Perioperative guardians of the patients.' Their primary role is to maintain the patient's physiology towards their baseline as they undergo surgical or diagnostic procedures, which many a time are a challenging, daunting, and unique task. Outside the realm of operating rooms and diagnostic suites, anesthesiologists are the intensivists or pain and palliative care physicians, each providing a specific opportunity in contributing to patient care.

OVERVIEW OF ANESTHESIOLOGY AS A SPECIALTY

Current policy is to make safe anesthesia accessible to all. As World Federation of Societies of Anaesthesiologists (WFSA) recommendation, 4–5 anesthesia providers per 1, 00,000 populations is a necessary aim for safe anesthesia delivery at a population level.[1] Some high-income countries, such as the United States, Sweden, and Australia, have more than 20 anesthetists per 1, 00,000 people while in India this count is around 1.27:1 lakh.[2] India is short of nearly 40,000 anesthesiologists.[3]

With the tremendous growth in knowledge, skills and innovation, anesthesia has now become one of the most advanced specialities in modern medicine. Anesthesiology is no longer just about inducing unconsciousness to relieve pain. It covers a wide range of services, from perioperative patient care to pain management, critical care, and palliative care.

During the COVID-19 pandemic, the role of the anesthesiologists was highlighted and acknowledged. They have been identified for their abilities as team players, consultants for critically ill patients, and medical managers, strategists, and leaders. The public has taken notice of the work performed by anesthesiologists. The anesthesiologist also made it to the cover of Time magazine's April 2020 issue and all this recognition has infused new energy into the specialty and the specialists.[4]

Eligibility to Pursue a Course to be an Anesthesiologist

The country offers three types of postgraduate anesthesia courses. A two-year diploma in anesthesiology (DA) and three-year MD and DNB Anesthesiology program is available. Medical graduates have to compete either National Eligibility Cum Entrance Test for Postgraduation (NEET-PG) or The Institute of National Importance Combined Entrance Test (INI-CET). After clearing the competitive exam, students can apply for MD/DNB/Diploma programs at various institutes in India.

Roles of the Anesthesiologist

Anesthesiologists are specialized trained physicians that make up most of any health institution's specialty. Anesthesiologists were the

frontline warriors in the fight against the COVID -19 campaign.[4] They are usually involved in patient care in a variety of settings, including:

- Operating rooms
- Medical care before and after surgery (perioperative physician)
- For patients undergoing procedures outside the operating theater, e.g., radiology, cath lab, etc.
- Intensive care unit
- Trauma and emergency department
- Resuscitation
- Pain and palliative care clinic
- Transportation of critically ill patients
- Teaching and research.

The urge for superspecialization has significantly increased in recent years since it offers an affiliation to major corporations and prominent government institutions, which in turn promotes academic brilliance, higher recognition, and employee happiness. To provide training in a variety of subspecialties like cardiac anesthesia, critical care, pediatric anesthesia, pain medicine, transplant anesthesia, oncoanesthesia, neuroanesthesia, and bariatric anesthesia. Top disciplines of superspecialization include pain medicine, critical care, and cardiac anesthesia.

Job Opportunities

Anesthesiology is the only medical specialty a candidate gets the job right on the day of completion of a postgraduate degree/diploma. One has a wide selection of professional options to choose from. Senior residents/lecturers in medical colleges, specialist doctors in government hospitals, consultants in corporate hospitals, freelancers in private nursing homes, or superspecialization based on personal interest are all numerous possibilities.[5]

Work-life Integration

It is the idea of managing your priorities in work and life rather than investing more in any of these areas. Doing so helps in progress and growth in the areas of work and life that are important to an individual **(Fig. 3.1)**. Awareness about

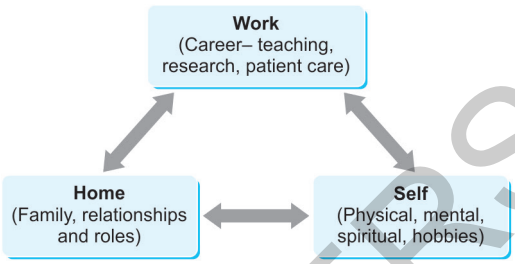

Fig. 3.1: Work-life integration.

this is making people choose a job that can easily integrate with their lifestyle choices and prospects.[6]

Anesthesiology is one such specialty where the professional roles, duties and hours are customizable depending on the type of job. For instance, anesthesiologists deal with emergencies and working hours can be long whereas the intensivists usually work in shifts and pain physicians have better flexible working hours. In teaching institutes, generally, there is a team that divides the work to maintain a better work-life balance.

Myths and Facts

The various myths and facts relating to anesthesiology as a specialty are discussed in **Table 3.1**.

Limitations

Like any other medical specialty, anesthesiology too does have its limitations, however, these are individualized in such a way that an aspect that one may perceive as a limitation, might be taken positively by someone else.

It is a dependent specialty. No patient would be admitted under you except for the pain physician and critical care unit. You might find the specialty nonrewarding as it is not appreciated as much as it deserves. Also, they don't receive personal feedback or gratitude from their patients.

This may not be the case anymore as nowadays, we are getting visibility and credit for our work in critical care, pain management and palliative care.

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Table 3.1: Myths and facts about anesthesiology and critical care specialty.

Myths	Facts
Anesthesiologists are not involved in patient care	They play an important role when it comes to the perioperative management of patients. Their roles as intensivists and pain-palliative care physicians also involve direct patient care.
Anesthesiologists leave the operating room after surgery starts	The anesthesiologists monitor the functions of all body systems and optimize them. They anticipate and manage the critical events throughout the surgery.
Adverse events during surgery are because an overdose of anesthesia	This is a vague statement. Patient's general condition and comorbidities, type and duration of surgery, and events during the surgery (like bleeding, and vagal stimulation) are some of many factors which are responsible for adverse outcome
They just put the patient to sleep which anyone can do	They work in various departments, including research, pediatric anesthesia, neuroanesthesia, cardiac anesthesia, ambulatory anesthesia, obstetrics, critical care, pain medicine, etc. This needs extensive training and experience.

The anesthesiologists working in the operating rooms must introduce themselves to the patients before the surgery and discuss the complexities, comorbidities, different types of anesthesia, and postoperative course [including pain, postoperative nausea and vomiting (PONV) requirement of ICU/mechanical ventilation, etc.]

Many times anesthesiologists deal with high-risk patients and are responsible for their well-being in critical conditions. This might be stressful for them and a reason for their dissatisfaction with the job. Litigations (legal action) from the patients who believe they didn't get proper care, is another challenge for anesthesiologists, threatening job, and financial security.[7]

Scope Abroad

Currently, Indian postgraduate training is not recognized abroad. There are various other extra qualifications/training which needs to be acquired to get a job abroad. Among other countries, the United Kingdom, Ireland, USA, Canada, Australia and New Zealand are popular among the trainees because of the better work-life integration and higher pay scale. Interested candidates can refer to the references for more information.[8]

KEY POINTS

- Patient safety during the perioperative phase is the responsibility of anesthesiologists so much so that they are known as the 'Perioperative guardians of the patients.'
- Anesthesiologists were the front-line warriors in the fight against the COVID-19 campaign because of their skills and leadership talents.
- In teaching institutes, generally, there is a team that divides the work to maintain a better work-life balance.
- Many career options are available abroad.

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MARK THE STATEMENTS TRUE/FALSE

1. About the complications an anesthesiologist face during the perioperative period?
- a. Circulatory collapse because of surgical bleeding/hemorrhage (T/F)
- b. Bronchospasm or aspiration of stomach content (T/F)
- c. Allergic reaction to drugs (T/F)
- d. An anesthesiologist must recognize the problem and manage it. (T/F)

2. About the number of anesthesiologists per unit population:
- a. WFSA recommends 4–5 anesthesia providers per 100,000 population is a necessary aim for safe anesthesia delivery at a population level (T/F)
- b. India has 4 anesthesiologists for every 100,000 of the population (T/F)
- c. Developed countries have 20 anesthesiologists per 1,00,000 of the population (T/F)
- d. India is short of nearly 40,000 anesthesiologists (T/F)

3. About the courses and entrance examinations available for anesthesia training:
- a. Only 3 year courses are available. (T/F)
- b. NEET-PG offers more than 4000 seats for postgraduate training in anesthesia. (T/F)
- c. INI-CET is organised twice a year. (T/F)
- d. NEET-PG and INI- CET are computer-based format (CBT) tests. (T/F)

4. Following are the area of work for an anesthesiologist:
- a. Intensive care unit (T/F)
- b. Radiology suite for an interventional radiological procedure in a child (T/F)
- c. End-of-life care (T/F)
- d. Operation theater (T/F)

ANSWERS

1. a (T), b (T), c (T), d (T)	2. a (T), b (F), c (T), d (T)	3. a (F), b (T), c (T), d (T)	4. a (T), b (T), c (T), d (T)

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Salient Features

In the updated second edition of *Essentials of Anesthesia and Critical Care*, we have refined our content to align with the National Medical Commission's latest competency-based curriculum. This indispensable guide, crucial for MBBS students and postgraduates alike, facilitates thorough exam preparation across a range of professional exams, including PGME, USMLE, and PLAB. Crafted in simple language with an accessible format, and enriched by substantial contributions from renowned anesthesia faculty across India. This edition is a comprehensive resource for in-depth and current anesthesia knowledge.

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- **Key Points and Facts:** Highlighted in separate boxes for quick reference and deeper insights.
- **Last minute Essentials:** Key points crucial for examination, often queried in tests, are summarized at the conclusion of each chapter for efficient last-minute study.

If any reader wishes to share feedback, suggestions, updates, and errata, please scan the QR code and fill the google form.

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