

CHAPTER 21

Pediatric Anesthesiology

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What Do Pediatric Anesthesiologists Do, and How is the Field Different Than Other Specialties of Medicine?

Pediatric anesthesiology is the practice of anesthesiology that focuses on the care of children and sometimes young adults. Compared with the practice of pediatrics, pediatric anesthesiology is a procedure-based specialty with a lot of knowledge of general medicine and pediatrics. Anesthesiologists have a great fund of knowledge of all body systems and do not focus on just the function of the heart, lungs and airway, although we are experts in management of the airway. Medical students sometime choose anesthesiology as a career when they learn that they can work with their hands, be in the operating room, and still manage medical conditions like heart disease, kidney disease, hematologic disorders, etc. Anesthesiologists have also been pioneers on the topics of safety and efficiency and must be good team leaders. To be a good anesthesiologist you must be very good at multitasking, troubleshooting, working with your hands, working under stress, and working well with teams of surgeons and nurses. And if you are a compassionate doctor, you can really find satisfaction in your ability to allay fears, treat pain and keep patients safe in the operating room. Anesthesiology is truly an exciting career choice; the work hours are better than many other medical professions, the burnout rate is low, the pay scale is favorable and the job market is excellent.

Children are not just small adults, which is why the subspecialty of pediatric anesthesiology is necessary. The art and science of medicine is blended well in the specialty of pediatric anesthesiology. Although children can be cared for by anesthesiologists with general training, children (especially infants) have differences in anatomy, physiology, pharmacodynamics and behavioral development that can make them challenging candidates for anesthesia. Most general-trained anesthesiologists do not have the comfort level required to care for newborns. Precision in medication dosing is required, and infants desaturate quickly. It is important for the anesthesiologist who is taking care of infants to be comfortable with the fact that systems designed for adults sometimes don't work for babies, and once the surgeon has prepped and draped the patient, there is almost no access to the patient.

Young children are also not capable of understanding the plan or environment, or they need to be NPO. Unfortunately, their coping mechanisms do not lead to cooperation, so techniques of anesthesia care that focus on the developmental capabilities of the patient are needed. A great pediatric anesthesiologist can make all the difference to children and their parents, and research has shown that sensitive preoperative discussions and play techniques on induction can reduce the need for preoperative sedatives; however, sometimes sedatives are a wise choice for extremely anxious patients. The transition from the prep area to the operating room is not only challenging but it can be fun too. This is when the anesthesiologist gets to play with the child, allay anxiety and sometimes act a little like a child. I have anesthetized children on parents' laps, on scooters, in strollers, in wagons and standing, sitting or lying down. There are many options; it is the anesthesiologist's job to pick a technique both safe and best for the psychology of the situation.

Another reason that pediatric anesthesiologists are needed is that children with severe illnesses, chronic illnesses or congenital disorders are more challenging to care for than patients born with perfect bodies. Only pediatric providers really understand how to care for patients with challenging congenital heart defects, metabolic disorders or other birth defects. Some of the care for patients with congenital disorders is so specialized that in many institutions, the pediatric anesthesiologists care for the adult patients with certain congenital disorders. Parents of patients with congenital disorders seem to understand the value of



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specially-trained pediatric anesthesiologists. Parents of healthy children don't have the same hospital experience and thus have a more naive perspective. Just think about your child; if you are the parent, wouldn't you want your child cared for by someone who cares for children every day?

Training Options

Pediatric anesthesiology is an exciting blend of both pediatrics and anesthesiology. Some people decide that they wish to combine the practices of pediatric anesthesiology and pediatric critical care medicine. If that is the chosen path, two residencies are currently required, followed by fellowship training.

The training options include the following:

1. Traditional internship, anesthesiology residency followed by fellowship in pediatric anesthesiology – 5 years
2. Pediatric internship, anesthesiology residency followed by fellowship in pediatric anesthesiology – 5 years
3. Pediatric residency, anesthesiology residency followed by fellowship in pediatric anesthesiology – 7 years
4. Pediatric residency, anesthesiology residency followed by both pediatric critical care and pediatric anesthesiology fellowships – 8 to 9 years

If I Choose to Train as a Pediatric Anesthesiologist, What Are My Career Options?

1. Clinical pediatric anesthesiologist
 - a. Pediatric hospital – 100 percent pediatric cases
 - b. Combined adult and pediatric hospital – depending on the hospital, you might do a mixture of adult and pediatric cases
2. Academic pediatric anesthesiologist
 - a. Clinical specialist
 - b. Educator
 - c. Research track
3. Combined pediatric anesthesiologist and pediatric intensivist
 - a. Clinical specialist
 - b. Educator
 - c. Research track

How Do I Investigate My Interest in Pediatric Anesthesiology as a Career Choice?

Do electives in anesthesiology, pediatric critical care medicine and possibly the neonatal intensive care unit. Talk to the pediatric anesthesiologists in your institution, and pick their brains about what they like and what they dislike about what they do. Ask them how they would train and talk about different career options in the field of pediatric anesthesiology.

CHAPTER 22

Geriatrics and Anesthesia: Everything You Wanted to Know About Anesthesia But Were Too Afraid to Ask

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An aging population carries huge consequences for the practice of anesthesiology. Aging issues affect most aspects of anesthesiology. This chapter aims to describe the demographic and physiological changes of aging. I hope after reading this you will join me in being driven to solve some of the challenges that this ever-enlarging patient group offers.

An Ever-Increasing Elderly Population

The roots of this change lay in advances in medicine and progressive social policy. After World War II, fertility rates increased. There was a “baby boom” from 1947 to 1964, and now this generation is growing old. Since Americans are now living longer, the age of the oldest segment of the population has also steadily increased over the last century. The “oldest – oldest” is the fastest growing segment of the elderly population. The number of people over 65 years old has tripled in the last 100 years and is anticipated to further double in size by the year 2040. Such improved life expectancy continues to enlarge that fraction of the surgical patient population that is considered elderly.



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