Anesthesiology Workforce Challenges in the U.S.

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Abstract

This article summarizes recent demographic changes in the physician component of the anesthesiology workforce in the US, including increased numbers of women in US medical schools and in anesthesiology residency training; increased numbers of osteopathic physicians some whom are entering anesthesiology residency training in greater percentages; decreased percentages of international medical graduates in anesthesiology compared to past eras; slight differences in practice patterns between women and men anesthesiologists; and retirement patterns among anesthesiologists being similar to other physicians. Also covered are the growing numbers of certified registered nurse anesthetists (CRNA's) to equal those of anesthesiologists; some information on CRNA practice patterns; and the demographics of anesthesiology care in rural areas. Information is provided regarding the recent development in the US of the new anesthesiology workforce category of anesthesiology assistants (AA's).

Keywords

Anesthesia, Workforce, Anesthesiologist, Certified registered nurse anesthetists, Anesthesiology assistants, Staffing challenges

The anesthesiology workforce in the US has changed over the past 3 decades, including increased numbers of physicians (anesthesiologists) who are being matched by increases in the number of certified registered nurse anesthetists (CRNA's), with the number of annual graduates of CRNA training programs increasing from 948 new CRNA graduates in 1990, to 2239 new CRNA graduates in 2009 [1]. There are now approximately 58,400 anesthesiologists and approximately the same number of CRNA's [2]. Thus, the US needs both groups in order to meet the anesthesiology care needs of the population.

The US annual medical school graduates in 2019 were approximately 20,000 MD's (47.3% women, up from 28% women in 1981), with growing numbers and percentages of DO's (doctors of osteopathic medicine) graduating, now approximately 6500 DO's annually. DO annual graduates are now 33% as many as MD's, up from 22% as many as MD's in 2009. In 2018, DO graduates were 43.6% women, down from 50.8% women in 2009 [3,4].

In 2018, there were approximately 6491 anesthesiology residents and fellows in training in the US, of which 35.2% were women and 13.2% were international medical graduates [5]. In 2015, the American Board of Anesthesiology diplomates were approximately 37% women [6], and in 2018 the number of diplomates who held the DO degree were 10.4% of primary certificates, 5.1% of critical care medicine certificates, 8.0% of pain medicine certificates, and 12.7% of pediatric anesthesiology certificates awarded that year [7,8] In 2017, anesthesiologists were the fifth largest specialty of active physicians following only General Internal Medicine, Family Medicine, Pediatrics, and Emergency Medicine [9]. Of active US anesthesiologists in 2017, 25.5% were women (fewer women graduating as physicians and becoming anesthesiologists in past years), 51.7% were over 55 years of age (indicating soon a need for replacements), 6.6% were DO's (lower numbers of DO's in anesthesiology in past years), and 21.6% were international medical graduates (greater numbers of international medical graduates in anesthesiology in past years) [10-13].

A survey of American Society of Anesthesiologists' members published in 2015, comparing active men and women anesthesiologists, showed that overall, on average, women were slightly younger; had fewer years of experience due to fewer women in older cohorts; fewer women were married (92% men vs. 80% women); slightly fewer women had children (68% men vs. 62% women). However, there was a similar regional distribution of men and women anesthesiologists across the US. Women were increasing in virtually all age cohorts over the past decade, as more women entered medicine and then trained in anesthesiology. More women than men worked in only one hospital, a slightly higher percentage of women than men worked in pediatric or obstetric anesthesiology, and more women than men worked in a fixed salary arrangement vs. paid for each case [14].

After adjusting for hours worked, years of experience, and type of practice, male anesthesiologists

earned on average 7% more than women anesthesiologists for reasons unknown. However, women anesthesiologists who were unmarried at the time of the survey worked the same hours as men whether or not the presently unmarried women had children, while married women anesthesiologists worked fewer hours than men whether or not the married women had children [14]. Regarding retirement, the weekly hours worked decreased for both women and men anesthesiologists after age 60 years. The percentage of anesthesiologists retiring peaked at age 65-69 years, at the same rates as other physicians, while the most frequent reason for retirement for both anesthesiologists and other physicians was health issues [15].

In the western states of the US, fewer anesthesiologists were in a practice where they supervised CRNA's, compared to other regions of the US. Only 4-5% of anesthesiologists practiced in rural areas in the US [14]. Of approximately 51,000 practicing CRNA's in 2018, 34% practiced in places of <50,000 population [16]. It is estimated that CRNA's participate in anesthetics for approximately 80% of rural cases, either practicing alone or under supervision by an MD or DO anesthesiologist [16,17]. In a 2010 survey, 45% of CRNA's were men and 55% were women, and 81% worked full-time. In the 2010 survey, 86% of CRNA's worked in hospitals, 11% in ambulatory surgery centers, and 2% in a surgeon's or other proceduralist's office [1].

A relatively new category in the US anesthesiology work force are anesthesiology assistants (AA's), who can administer an anesthetic under the supervision of an anesthesiologist. They are a growing component of anesthesiology care in some regions, with approximately 2700 now in the US [2]. Anesthesiology assistants have a university bachelor's degree, followed by a master's degree in anesthesiology care from one of 12 current AA training programs. AA's are currently able to work in 17 of the 50 states, as well as in the District of Columbia (Washington, DC) [18].

Conflict of Interests

The author declares no conflict of interest.

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