

# Anesthesiology Staffing Shortages – Winter is Coming

Kevin K. Tremper, PhD, MD\*

Justin Adams, CEO of AlertWatch

---

## Abstract

*This whitepaper discusses the changing landscape of anesthesiology residency graduation rates, work preferences, and the potential staffing shortages emerging in the field.*

---

While the demand for anesthesia services is predicted to increase progressively over the next few decades, the dynamics of the anesthesiology work force numbers will create additional pressure on the ability for groups to maintain sufficient staffing levels.

In particular, there are three distinct changes occurring:

- Graduation Rates
- Retirement Rates
- Work-life Balance

## Graduation Rates

The first chart on the following page shows the number of CA-1 residents over the past 40 years. Although there has always been a shortage of anesthesiologists from the 60s and 70s,

the popularity of the field dramatically increased during the 1980s. (1) This may have been due to the advances in anesthesia technology (monitoring, both invasive and noninvasive), and the development of subspecialties within the field. The small dip in the mid-1980s was associated with the change in the length of the required training, from three to four years. By the mid-1990s the graduation rates had increased from 800/year to nearly 1800/year. At this point, due to concerns regarding capitated health care, the possible reduction in surgical procedures and the envisioned need for greater number of primary care physicians over specialty care physicians, there was a concern of an

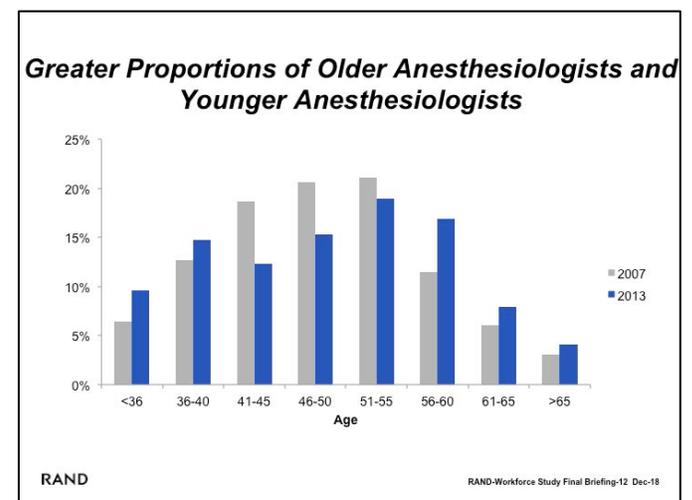
oversupply of anesthesiologists. (1,2) Reinforcing this concern of excess anesthesiologists was a work force study commissioned by the ASA in 1994, which estimated an oversupply of 3,000 anesthesiologists. (1) The expectation of a poor job market resulted in a dramatic decrease in interest in anesthesiology by medical students. The number of senior residents was roughly 1800 while the matched class of 1996 was only 143. Since this matched class was for the PG-2 year, out of match applicants were recruited making the entering PG-2 (CA-1) class roughly 800. Still 1,000 less than the number who had graduated the previous year. (1) Ultimately, this produced a shortage of nearly 3,000 anesthesiologists by the early 2000s. (3) This was documented in the second work force study commissioned by the ASA conducted by the RAND Corporation. The RAND Corporation was then again commissioned to conduct a follow-up survey in 2013, the results of which are presented in the following graphs in this whitepaper. (3,4)



At this point it was clear there was going to be a shortage of anesthesiologists due to a relatively slow gradual rise in the number of graduates and the substantial rise in the number of retirees as the anesthesiologists who trained in the 1980s retire. Since there is a projected progressive increase in surgical caseload because of the aging population, there will be a progressive shortfall of anesthesiologists over the next decade.

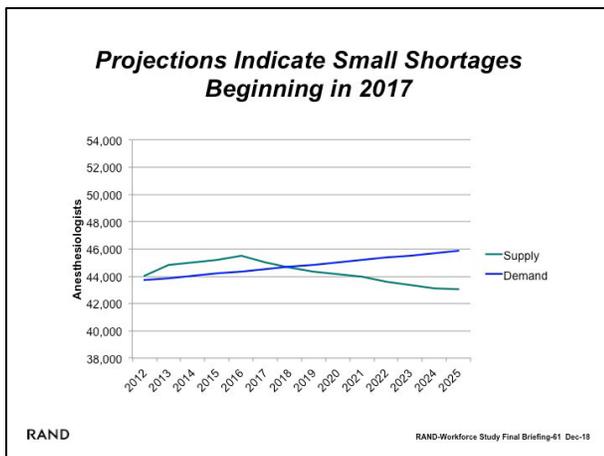
### Retirement Rates

Building on the history of graduation rates above, we see that the number of older anesthesiologists has increased quite dramatically in the chart below. For example, as of 2013, the percent of providers between 56 and 60 has increased from around 12% to 17%.

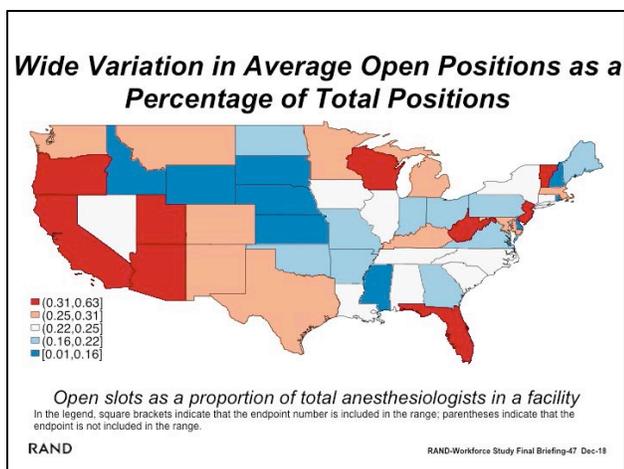


### Retirement & Graduation

Combining rates of retirement and graduation, it is clear that there will be a shortage, which started around 2017. People involved in recruiting have likely noticed already.

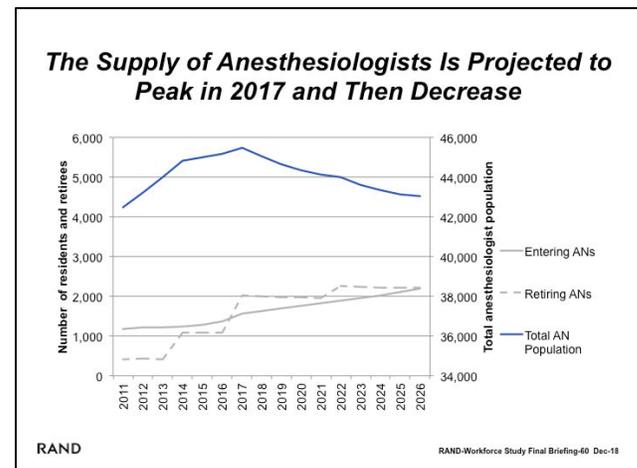


It appears that these shortages are not homogenous across the country. As displayed in the next chart, the position openings as a percent of total openings is particularly acute in many coastal states.



As noted in the next figure, the number of residents on left and the number of total anesthesiologists in the US on the right, illustrates there will be a progressive decrease in the number of practicing anesthesiologists starting in approximately 2017/18. This trend will continue at least through the next decade.

**This is the first time there has been a decrease in the number of practicing anesthesiologists in the history of the field.**



## Work-Life Balance

Newer recruits are valuing work-life balance as much as take home salary. Newer recruits are wanting to have more time with family or to travel and are therefore opting for less work hours than in previous generations. Adding to this same issue is the progressive increase in the number of women (now at 50% of medical schools), increasingly choosing anesthesiology as a career. The percentages are going from the 20s to the mid-30s and higher into the future. Women in the work force often choose less than a full-time clinical appointment. This again decreases the overall work force. Additionally, a decrease in OR anesthesia is occurring due to an increased popularity in critical care and pain management. Those two subspecialties have less time dedicated to OR work.

## Conclusion

It is clear from the demographics of trained anesthesiologists over the past 40 years and the predictions of increasing procedure caseload, there will be an increasing shortage of anesthesiologists for the foreseeable future. Because the number of GME positions is not increasing and the time lag between medical students and graduating residents and fellows, there is no obvious work force solution that can change this trajectory. This is a fact. The number of medical and surgical procedures requiring anesthesia will also increase progressively over the next decade or more. This is also a fact. What is unknown is how this issue will be addressed by anesthesiologists. It is unlikely that patients, hospitals, surgeons and interventionists of all types will stand for less availability of anesthesia care. The only solutions that appears feasible is that more care will be provided by CRNAs and AAs in the future. Currently, the average supervision ratio is roughly 1:3 to 1:4 for Medicare patients. This ratio is limited primarily by the reimbursement methodologies, but is also limited by the severity of illness and complexity of cases being conducted on older patients. This problem should be addressed by anesthesiologists or it will be addressed by others. One option is to provide greater staffing ratios in lower acuity areas where the reimbursement will go from medical direction to medical

supervision. This can be paired with decision support surveillance software to help maintain the quality of care as the supervision ratios increase.

---

*\*Kevin K. Tremper, PhD, MD is the Founder and President and an equity holder at AlertWatch, Inc.*

*Justin Adams is Chief Executive Officer at AlertWatch, Inc.*

## References:

1. Kheterpal S, Tremper KK, et al. Six-Year Follow-up on Work Force and Finances of the United States Anesthesiology Training Programs: 2000 to 2006. *Anesth Analg* 2009; 108:263-72
2. Estimation of Physician Work Force Requirements in Anesthesiology, Bethesda, MD: Abt Associates Inc, 1994:1-53
3. Daugherty L, Finesca R, Kumar KB, Michaud PC. An Analysis of the Labor Markets for Anesthesiology. Santa Monica, CA: RAND Corporation, 2010:1-155
4. The RAND Corporation: The Anesthesiologist Workforce in 2013. RAND Research Report 2014. [[http://www.rand.org/pubs/research\\_reports/RR650.html](http://www.rand.org/pubs/research_reports/RR650.html)]