**WSA Discussion of 2022-341**

**Contemporary Practice of General Surgery in the US: An Analysis of American Board of Surgery Diplomate Case Logs**

**DR BEN JARMAN** (La Crosse, WI): This is an analysis of American Board of Surgery (ABS) Diplomate self-reported operative experience from 2013 to 2017. Dr Cortez and his coauthors have a rich history of assessing operative volume, as reported by both residents and general surgeons, with a focus on biliary, vascular, and pediatric procedures. This is an adjunct to that earlier work. This project is a descriptive analysis of previously reported data, with assessment of trends over time.

There is no doubt that studying what surgeons do is important on many fronts, which were well outlined by Dr Cortez. The authors note several positive findings, which I will not review, but it is notable that general surgeons operate a lot. The volume and breadth of procedures performed by our colleagues across the country is something to appreciate and should really inspire all of us.

Regarding categorization of general surgeons, how were those who have completed minimally invasive fellowships designated? This is noted to be the most common fellowship pursued by our residents, and my observation is that there is a large variation in practice patterns and location by that population. How did you account for that designation in your study? And if you did not, is it possible to further evaluate that group? Additionally, people who have completed a trauma or acute care surgery fellowship or those who have completed non-Accreditation Council for Graduate Medical Education (ACGME) accredited critical care fellowships. How do we account for those providers and assess their operative volume?

There is a national concern for the current lack of rural surgery access, with anticipated exacerbation over the upcoming 10-15 years, owing to the older age of current surgeons in practice and a lack of definitive continuity plans. Please comment on the association you noted between late-career surgeons more often being general surgeons vs subspecialists. Was there a regional impact to that? I know you separated it out by region and not by age; I was wondering if there was a certain region where there was an older population of surgeons perhaps more at risk of workforce shortages. And again, Dr Potts, with your experience and wisdom, what actions do we need to take, if any, to address that issue?

Regarding the finding that male surgeons report higher volume of operations despite an increase in representation by female surgeons; does this matter? Is this something we need to pay attention to? What concerns if any do you have with that finding? Does the ABS reporting mechanism capture full-time equivalent status among diplomats? Do you think variation in clinical full-time equivalent could account for that difference, or is this an equity issue that we need to be aware of? How would you propose we further study that finding?

**DR JOHN POTTS** (Chicago, IL): Regarding the categorization of general surgeons, we chose to use the same methodology that Dr Valentine used in his 2011 presentation. Namely, we identified those surgeons who were recertifying and who also had another certificate from an American Board of Medical Specialties (ABMS) member board, and excluded those as subspecialists, leaving the rest as general surgeons. We recognize that there is an increasing proportion of general surgery residency graduates entering fellowship programs. You mentioned minimally invasive surgery and trauma care. In fact, those individuals are performing general surgery. They are doing it perhaps with a special technique, or with a little bit more expertise in one area or another, but they are performing general surgery, so we feel like it is fair to include them in the general surgery population. Although it is self-reported information and does not, to my knowledge, distinguish between ACGME-accredited and non-ACGME-accredited fellowships, the ABS does ask applicants what, if any, fellowships they have pursued. Perhaps in one or more future studies, we could analyze the practice patterns of surgeons who have pursued specific fellowships (such as minimally invasive surgery and trauma/acute care surgery) that do not lead to certification by an ABMS member board.

You also asked about rural surgeons; late-career rural surgeons in particular, and the impact on regional care. Again, there is a trend toward increasing numbers of general surgery graduates entering fellowships. That has been well documented over the last 30 years or so. Is there anything that we would recommend doing about that? Well, the fellowships just keep proliferating, and it is a free country, so I do not think from a regulatory standpoint there is anything we can do. I think our obligation is to ensure that general surgery resident program graduates are at least capable of performing the broad spectrum of general surgery. Whether they choose to practice broad-based general surgery in the end or not, our obligation is knowing that they can.

With respect to rural surgery, certainly the rural track residencies that have been created and are being created will help with that issue. I think the addition of just rotations (for those programs that cannot or do not want to form a rural track), will be helpful in providing care to the rural population. When you compare our data to that of Dr Valentine’s a decade ago, we demonstrated more rural surgeons in our study than he did in his. It is a small difference, but it is a difference. We did not analyze regional impact in a cross-sectional way, but we can, and I think that would strengthen the manuscript.

You also asked whether it matters that women perform fewer operations. It could matter, if the proportion of female surgeons continues to increase and the gap in the number of cases persists. We know that there will be an increasing number of female surgeons. We do not know whether that gap will persist. We also do not know the reasons for that gap. These data just do not tell us. One could speculate that the reason for the gap is that more female surgeons are in that first 10-year group, and perhaps their practice has not yet matured to the point that they are performing the same number of operations as the average male surgeon over the 3 decades. Another thing we can do before we finalize the manuscript is perform that cross-sectional study of the 10-year recertification group and analyze female vs male case counts in that group.

**DR MARY HAWN** (Stanford, CA): This study is great for describing what a general surgeon does, but case volume is not everything, in terms of work effort. I think we must be careful to not go to using numbers of cases to try to describe the effort of an endoscopy vs 1 major, complicated, inpatient operation. We just need to keep that in mind when we are discussing which regions of the country have more surgeon effort. I was surprised that rural surgeons had a higher case volume, and I wondered if you looked at the density of surgeons per underlying population. Is it just that they serve a larger area and there are fewer surgeons for the density of that population compared with the northeast or the west, and is that contributing to the average case volume of our rural surgeons? Is that disparity going to increase, as fewer surgeons go to rural areas, creating a bigger critical access to care challenge?

**DR JOHN POTTS** (Chicago, IL): Thank you, Dr Hawn, for making the important point that the time and effort involved varies greatly between cases. Again, we did not do that cross-sectional analysis. However, I would say that the findings in this study are consistent with those in the earlier studies by Richie and Valentine.

**DR STEVEN STAIN** (Burlington, MA): I would ask you to think about the minimum number of operations that one has to perform to be reasonably good at it. I believe that the mean number of trauma cases was 3. I think we could learn from your data about surgeons who perform very, very few operations in specific subspecialties areas, and still call themselves general surgeons. Perhaps we all need to think about redefining what it means to be a general surgeon.

**DR ALDEN HARKEN** (Oakland, CA): In a presentation this morning, I was reminded of both the influence and the power of social media. I wonder whether there is an opportunity within the ABS or within the Ethics Review Committee to incorporate some sense of remaining professional, as you have demonstrated so effectively. Is there a way to use that power? I was frightened by the initial presentation about something I already knew; that is social media is taking over. And we must learn to control it. If we do not learn how to control it within our own specialty, are in real trouble. Is there a way to use your influence, which you have done so effectively in your personal activity and expand that within your regulatory capabilities?

**DR JOHN POTTS** (Chicago, IL): I do not know offhand of a way to do this effectively as an accrediting body. But I think it is a challenging concept that we should pursue.