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Mandating Two-Year Regional Anesthesia Fellowships: Fanning the Academic Flame, or Extinguishing It?

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A discussion is unfolding within anesthesiology regarding the apparent demise of anesthesiology physician scientists in academic medicine. Although not addressing regional anesthesia specifically, an article in the journal *Anesthesiology* by Drs. Debra Schwinn and Jeffrey Balser presented persuasive evidence that our specialty—as a whole—is failing to adequately train future physician scientists and has an abysmally-small percentage of “NIH [National Institutes of Health] grants relative to other specialties.”¹ As a consequence, anesthesiology is “at risk of losing its status as a respected academic discipline within the broader biomedical community.”¹ Subsequent editorials^{2,3} and multiple letters-to-the-editor⁴⁻⁷ unanimously agreed that “academic anesthesiology is indeed in a crisis, and that bold steps are needed to avert the demise of our specialty as a legitimate academic discipline.”⁸

Drs. Schwinn and Balser's “main solution is to establish an increase in subspecialty fellowships that incorporate at least *1 year of research*.”⁵ They note that, “exposure to a rigorous research environment whets the appetite for research in many individuals who would otherwise not have been exposed;” and that none of our fellowships “have a research *requirement* (although some have such a recommendation), in contrast to those of our peer specialties.”¹ They add that, as a specialty, we “set extraordinarily low expectations in regard to the research accomplishments of our finest trainees at the terminal phase of their training.”¹

These authors explain that they were “in the end offering an opinion that deserves to be challenged,” and invited “others to consider our position in light of other alternatives for ‘corrective action,’ and to advocate for these positions.”¹ We concur with our colleagues that “only through such discourse will we make progress.”⁸ And while we agree that the crisis in anesthesiology is not only severe but growing, *we propose that mandating at least one year of fellowship training devoted exclusively to research may actually be counterproductive for regional anesthesia fellowships at this time*. As with any policy change, the cost-benefit ratio must be examined when considering an intervention of this magnitude.

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Potential Benefits

The premise of a mandated year of fellowship-level research is to encourage more fellows to choose a research-oriented career, but a full year of research is not required to make such a decision. Currently, guidelines for single-year regional anesthesia fellowships recommend participation in clinical and/or laboratory research activities, which usually occurs during a portion of the single-year of post-residency training.⁹ Although limited exposure to research does not prepare fellows for an academic career compared with a mandated fellowship year of research, it also does not serve as a disincentive to continuing their postgraduate education. Therefore, the critical question is how many *additional* fellows would choose a physician scientist career by mandating a full year of research compared with the current more-limited exposure during their single year of training?

If we are to persuade fellows to choose a research-based career path by exposing them to “a rigorous research environment,” such environments must first exist. As Drs. Schwinn and Balser noted, only 40% of the current academic anesthesiology departments in the United States have “even one NIH grant credited to a faculty member or trainee in their department,” with few of these individuals specializing in regional anesthesia or pain medicine; and only ten anesthesiology departments hold NIH department-sponsored research training grants (Table 4 of their article).¹ As others have opined, “not only are we not training an adequate number of new physician scientists in anesthesiology, but we also do not have a sufficient number of academic faculty that can serve as role models. The latter exponentially compounds the problem of the former.”² Without role models committed to a physician scientist career path, it is doubtful that mandating a year of research will convince fellows to choose a research-based career path.⁴ So, the number of *additional* fellows who would choose a physician scientist career by mandating a full year of research compared with the current more-limited exposure during their single year of training may be negligibly small—the “benefit” of the intervention would be minimal, at best.

Potential Costs

Without adequate mentors, mandating a research year will either further decrease the already small number of available fellowships, or require many fellows to spend a year of training without adequate mentorship. In addition, there are significant costs associated with adding a year of fellowship—both to the programs and to the fellows themselves. Regarding the former, unless funding was secured from other sources, many departments would be unable to sustain their current fellowships, further decreasing the available programs. In regards to the possibility of increased training duration deterring residents from seeking fellowship training, Drs. Balser and Schwinn suggest that the historic examples of cardiology and gastroenterology are evidence to the contrary. However, each of these subspecialties provides internists—whose median base-salary in the United States is far below that of anesthesiologists—to dramatically increase their post-graduate earnings, undoubtedly aiding fellowships in continuing to draw applicants. In contrast, the same is not true for regional anesthesia fellowships. Indeed, anesthesiology fellowships could even experience a further decrease in the already inadequate number of applicants to fill available positions.

Would fellowship training increase the reimbursement for regional techniques and therefore the salaries of future fellowship graduates? Drs. Balser and Schwinn propose that, “... by including extensive research and clinical educational requirements, these subspecialties were able to establish the high moral ground to justify, to the public, third-party payers, and healthcare service providers, that they deserve priority in providing consultative advice, [and] complex clinical services,”⁸ and, presumably, the increase in funding that accompanies these activities. However, in doing so, gastroenterologists and cardiologists made many (most?) of

their high-paying procedures the exclusive realm of practitioners with fellowship training. The argument was, in effect, that the procedures require years of additional training, therefore only those with this training should perform the procedures, and, consequently, the procedures deserve a higher level of reimbursement. However, few regional anesthesiologists desire a similar end-result for our subspecialty: rather than make regional anesthesia the domain of a few extensively-trained specialists, most would prefer to train as many generalists as possible in these techniques and subsequently bring the benefits of regional anesthesia and analgesia to the maximum number of patients. So, the analogy with gastroenterology and cardiology is imperfect when applied to regional anesthesia.

ACGME Accreditation

An additional proposal to increase the number of physician scientists in anesthesiology is to increase the number Accreditation Council for Graduate Medical Education (ACGME)-accredited anesthesiology fellowships (and mandate at least a year of research *via* the ACGME enforcement mechanism).³ Although ACGME program requirements for accredited fellowships such as those in pain medicine strongly encourage fellow exposure to research and scholarly activity, the accrediting agency does not currently recognize dedicated research time as fulfilling programmatic educational requirements.¹⁰ Since regional anesthesia fellowships are not currently ACGME-accredited, there are no “program requirements.” Rather, “guidelines” were recently published in *Regional Anesthesia and Pain Medicine* (and endorsed by the American Society of Regional Anesthesia and Pain Medicine Board of Directors).⁹ While achieving ACGME accreditation might help standardize education, guarantee fellowship graduates received adequate training, and enable enforcement training requirements, regional anesthesia simply does not have the critical mass to achieve accreditation at this time: there are currently too few specialists and fellowship programs.

With a mandated research year potentially decreasing fellowship programs, applicants, and subsequent graduates, the pool of individuals with advanced training in regional anesthesia and pain management could decline precipitously. The proposed theory is that even with an initial decrease in graduating fellows, those individuals who do complete their training will (1) more likely choose a research-oriented career path; and (2) be better prepared to compete for NIH-level research funding. This combination would eventually lead to a resurgence in academic anesthesiology and increase the future pool of mentors, applicants and programs. *But regional anesthesia fellowships are currently in such tenuous condition that these few programs—in effect, this “spark” of academia—may not be fueled by fanning, but rather extinguished completely.*

Possible Options

While we do not believe that the proposal to extend regional anesthesia fellowships would have a net-positive effect, we do agree that academic anesthesiology is in crisis and that resolute steps must be taken to improve this condition. Even recently-trained regional anesthesia fellows decry the lack of research exposure during their training.¹¹ Our subspecialty must face the reality that while we have trained outstanding clinical fellows, we are failing to train an adequate number of academicians dedicated to and prepared for a predominantly research-based career. There are multiple reasons for this situation that are not unique to regional anesthesia, including a lack of applicants interested in a research career track (regardless of research exposure),² the cost of extensive training,⁵ and the tenuous future of academic medicine itself.⁷

We must increase the number of individuals with advanced training in regional anesthesia and the number of fellowship programs. The current fellowship guidelines recommend that, “fellows shall have the opportunity to participate in clinical and/or laboratory research... The

types of activities that would suffice as academic projects include a research paper and/or case report submitted to a peer-review journal and presented; a clinical chart review or a review article submitted to, and accepted by a peer-reviewed journal; a book chapter; or other endeavor.”⁹ The guidelines should be strengthened to specify a minimum amount of time directly participating in clinical and/or laboratory research. This will not necessarily produce faculty capable of competing for national-level funding, but it will at least expose fellows to the possibility of continuing their training and pursuing a research-based career.

Future Mentors

Training fellows to be physician-scientists capable of competing for extramural funding requires a critical mass of physician-scientist mentors with extramural funding. Since regional anesthesia currently lacks this critical mass of mentors, we are in a “chicken-or-the-egg” situation and must do what we can to create the mentors of the future. To be successful, this effort will require financial support for both fellows and prospective mentors. While there are research grants available from various sources for fellowship projects, the funding cycle of 6-10 months does not allow actual project funding during a specific fellowship. To help counter this defeating effect, the NIH has created training grants (T-series mechanism) which are provided to institutions to fund fellows on a recurring annual basis. Currently, our subspecialty—as a whole—does not compete effectively with others for training grants. However, we must create mentors of the future so that some day we may be in a better position to compete. Therefore, it is necessary to create our own form of training grants by regionalists specifically for regionalists. The American Society of Regional Anesthesia (ASRA) may wish to consider creating its own training grants in addition to the Koller Grant. Related to this, programs are presently free to offer two-year, research-centered fellowships, as a few have done (Mayo Clinic, University of California San Diego, and Virginia Mason). Expanding the number of such fellowships may be encouraged by ASRA and other organizations with the use of regional anesthesia fellowship training grants. Furthermore, fellows and junior faculty should be encouraged to seek NIH (K-series mechanism) and/or Foundation for Anesthesia Education and Research mentored career development awards that will increase their ability to compete for national-level research funding in the future.

If and when the number of regional anesthesia fellowships have reached the required critical mass (25 fellowship programs at a minimum), the possibility of ACGME accreditation may be revisited. If ACGME approval is sought, only then should the possibility of mandating a full year of research during fellowship be proposed. Unfortunately, there is no single intervention that we in the regional anesthesia community may make to easily reverse the trajectory of academic anesthesiology; but there are promising options to help ensure that regional anesthesia's academic flame is strengthened and not extinguished.

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