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EDITORIAL

Improving the Relationship Between the Neuromodulation Industry and Academia: Commentary and Strategy

Michael E Schatman[1,2], Daniel A Adams[1], Sayed Emal Wahezi[3]

[1]Department of Anesthesiology, Perioperative Care and Pain Medicine, NYU Grossman School of Medicine, New York, NY, USA; [2]Department of Population Health – Division of Medical Ethics, NYU Grossman School of Medicine, New York, NY, USA; [3]Department of Physical Medicine & Rehabilitation, Montefiore Medical Center, Bronx, NY, USA

Correspondence: Michael E Schatman, Department of Anesthesiology, Perioperative Care & Pain Medicine, NYU Grossman School of Medicine, 550 First Avenue, New York, NY, 10016, USA, Tel +1 425-647-4880, Email Michael.Schatman@NYULangone.org

The relationship between pain medicine and industry has long been a complicated one. A 2015 Ethics Forum in Pain Medicine[1–4] called for improving relationships with the leaders of continuing medical education. Conflict of interest was addressed, noting that scientific integrity and quality of pain patient care should remain sacrosanct, particularly given the vulnerabilities of both patients with pain and providers of clinical care. The authors concluded that striving for the healthiest possible symbiosis is necessary if the vulnerable parties, both patients and physicians, are to benefit maximally from the relationship.[4]

A decade ago, the primary concern regarding conflict of interest relating to industry involvement in physician education pertained primarily to the opioid industry, as the United States was in the throes of the prescription opioid crisis. Currently, the pharmaceutical industry is no longer the most influential entity in pain medicine based upon market share, as it has been replaced by the neuromodulation industry.[5] Broadly, we are strongly supportive of the tremendous potential benefits of neuromodulation, and agree that the industry is generally helping the lives of countless patients and the field of pain medicine. This certainly pertains, as will be discussed, to industry's important role in pain physician education. However, greater transparency by industry will be necessary if we are to implement much needed improvements in patient care and the reputation of the field.[6]

Over the past 2 years, many publications have opined and provided direction on the deficiencies in the current paradigm of pain physician education.[7–15] Although there has been a wide range of concerns regarding the training of our future pain physicians, perhaps our most salient is that the current 1-year fellowship does not provide for sufficient time for training in advanced procedures. While a 1-year fellowship may have been sufficient as recently as a decade ago, the subsequent explosion of potentially life-altering technology makes it impossible for us to appropriately train pain physicians to be competent in the ever-growing pain management modalities from which patients and the field of pain medicine may potentially benefit.[16–18] As a result, pain fellows are currently relying upon industry sponsored/conducted workshops on advanced procedures in order to increase the breadth of their training. While it would be difficult to argue against the potential benefits associated with participation in these supplemental educational activities, a number of educators have addressed the potential to provide biased training in the advanced procedures which are currently such an integral aspect of pain physician training.[10,19,20]

Both the Association of American Medical Colleges (AAMC) and the Accreditation Council for Graduate Medical Education (ACGME) have expressed concerns regarding the potential for conflicts of interest engendered by the influence of industry on medical education. Consequently, they have published guidelines in response, which, among other requirements, mandate that industry-sponsored trainings be accredited by the American College of Continuing Medical Education, that faculty be present during all interactions between trainees and industry representatives, and that the sponsoring institution's graduate medical education committee (GMEC) exercise oversight over these trainings.[21,22]

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These guidelines may at times come into conflict with the reality of current pain medicine fellowship training, in which many fellows benefit from training by industry representatives in advanced procedures at workshops which occur privately, outside the academic medical center, and sometimes without the fellowship program's involvement or knowledge. This can create challenging situations for fellowship program directors who on the one hand need to follow institutional and ACGME policies, but also want to ensure that their fellows learn the advanced procedures they need to both become leaders in interventional pain medicine and to be readily employable in an increasingly competitive job market in which performing certain advanced procedures may be the expectation and/or norm.

To clarify the current status of training in pain medicine from industry that supplemental fellows' internal clinical training, consider the following: Manufacturer A is interested in marketing a specific treatment modality for chronic pain, but is aware of the time limitations of fellowship clinical training. Consequently, they offer weekend training programs to fellows, considering them as "mutually beneficial" to both trainees and the manufacturer. Program leadership, and certainly fellows, are pleased with this arrangement, knowing that the time constraints of internal training will not allow for sufficient immersion in using the product/device made by Manufacturer A. This all seems brilliantly symbiotic, but are there potential ethical imbroglios associated with such training practices? If Manufacturer B makes a similar product/device, will trainees not be more likely to use the product in which they are specifically trained once they are in independent practice – irrespective of lack of empirically-established superiority of their product/device over that being marketed by Manufacturer B? Further, will trainees lose sight of the possibility that using the product/device of Manufacturer A may be suitable for certain patients, yet not necessarily across the board?

Accordingly, we offer a supplemental training option that may potentially mitigate such an ethical conundrum. If Manufacturers A and B offer a similar product/device (eg, a peripheral nerve stimulator) with similar implantation processes and no empirically established superiority of one device compared to the other, would there be a benefit to trainees to attend supplemental training co-provided/co-sponsored by both manufacturers? We posit that our fellows would benefit from this type of arrangement, as learning the nuances of similar products/devices and optimal applicabilities to specific patient groups will help them develop better clinical judgment as well as the technical skills associated with both manufacturers' devices. Regarding benefit to the participating industries, perhaps co-teaching/co-sponsoring supplemental fellow education will result in more authentic use of manufacturers' brands compared to situations in which they provide supplemental training individually. However, in a time when pain medicine education is under scrutiny,[6,23,24] would the long-term benefits of co-teaching these important courses to our fellows not reflect positively on public and professional perceptions regarding the role of industry in promoting the field, broadly? Certainly worth consideration!!

Given the quality of and clear benefits being provided to pain medicine fellows by trainings delivered by the medical device industry, rather than pushing these presentations outside of the academic medical center (which has historically been done), we should rather consider inviting industry in! This will benefit the medical device manufacturers, expanding their presentations' impact by potentially delivering them to a larger group of trainees and/or faculty, and also by increasing the credibility of these presentations by subjecting them to the standard academic peer review requirements for CME-type courses delivered in an academic medical center. This may also be helpful from an administrative perspective for pain medicine fellowship programs, as ACGME requirements such as GMEC and program director oversight of these workshops would occur automatically as per usual institutional policies and procedures.

We have an opportunity to further optimize the training of pain medicine fellows in advanced procedures by changing how industry-sponsored training is conducted in order to minimize the development of trainee bias towards a specific product/device. As suggested above, this will require collaborating even more closely with the medical device manufacturers who have in many cases revolutionized our field, and inviting them into the academic medical center and/or into close collaboration with our academic societies. A practical solution we propose is that training in a specific procedure by medical device representatives be co-conducted by two or more manufacturers to help ensure that fellows are not biased towards one manufacturer's product. To accomplish this, academic faculty and industry representatives should collaborate on creating the educational content, and an independent board from within the academic medical center or from a pain medicine society should be established to evaluate the material prior to it being presented to trainees. These industry-provided programs can be hosted in individual institutions for a singular fellowship, a group of geographically

close fellowships (potentially organized by a local pain medicine society, which may serve as additional quality control), or by national/international pain medicine societies at their annual conferences.

We support academic organizations holding individual seminars for procedures/devices (eg spinal cord stimulation, peripheral nerve stimulation, vertebral augmentation, basivertebral nerve ablation, sacroiliac joint interventions, or radiofrequency ablation), but we believe that these seminars should be conducted by having different vendors from the same device distinctions presenting on the same date, rather than all devices for different procedures presenting on the same day. For example, an academic society could hold a seminar at their annual conference in which multiple manufacturers present their basivertebral nerve ablation device(s) on the same day. We believe that co-presentation by different vendors will allow trainees to be exposed to different devices and their unique qualities simultaneously, with vendors being encouraged to discuss how their device is different from their competitors' so that trainees can better determine which device may be the best option for a particular patient cohort in a less-biased manner. If there are limitations in industry funding that prohibit travel for co-presentation, much of the didactic content can be co-presented in live, web-based formats.

One of the most rewarding aspects of being a medical educator is the potentially exponential impact we can have on society secondary to the contributions of our trainees to their patients, medical science, and our profession more broadly. With these rewards also comes a sacred responsibility to shepherd our trainees into becoming well-rounded, altruistic, and unbiased professionals. The impact of the medical device industry on pain medicine fellow education has been overwhelmingly positive overall, but we do have concerns that trainees may develop biases towards one manufacturer's device due to the manner in which fellows currently are educated in these devices. This is important, as the development of bias could negatively impact the quality of care that we provide our patients, and potentially even the credibility of our specialty. We should work closely together with our academic societies and medical device manufacturers, and encourage co-presentation of medical devices to optimize pain medicine fellow training in advanced procedures in as unbiased a manner as possible. This will not only benefit our fellows, but their future patients and thus our specialty as a whole.

Disclosure

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