

35 reviews, and four systematic reviews. The discrepancies can be explained by limitations of the search strategy and not attributing the publications to the department of anesthesia when they originated from our critical care program or collaborative research programs, particularly when the laboratory was based in another department. Furthermore, their search strategy failed to capture publications in other subspecialty journals including, but not limited to: Transplantation, Brain Research, Stroke, Neuroradiology, and the Journal of Neurocritical Care. I believe that other Departments may also have had their number of peer-reviewed publications significantly underestimated. This underestimation of the full picture of anesthesia research productivity in Canada fails to fully capture for our universities and the international medical community, the considerable past achievements of our many anesthesia researchers in Canada.

Secondly, regarding the benchmark metrics used by Tsui *et al.*, namely the publication rate and impact factor scores, the authors did acknowledge the limitation of ranking institutions based primarily on the total number of publications, and the size of the academic centre was not accounted for. My concern is that the disproportional bias in 'research productivity' in smaller university departments may hinder recruitment of young researchers to these departments. To fairly address these rankings, I would propose that the research publication rate should be divided by the number of full time equivalent faculty members within each academic department. This would more closely reflect research productivity within each academic department in context of its clinical and academic deliverables.

It is sometimes easier to follow the path of least resistance when coping with the human resource shortages confronting the specialty of anesthesia. However, within academic departments, we must now more than ever, train and encourage young investigators and educators, and provide them with dedicated mentorship and the necessary resources to allow them to flourish on their academic career paths, and avoid an overly-developed focus on provision of clinical services.

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Accepted for publication May 9, 2006.

Reference

- 1 Tsui BC, Li LX, Ma V, Wagner AM, Finucane BT. Declining randomized clinical trials from Canadian anesthesia departments? *Can J Anesth* 2006; 53: 226–35.

Reply:

We very much appreciate the comments made by Drs. Finley et al. from Dalhousie, Drs. Donati and Hardy from Université de Montréal, and Dr. Cheng from the University of Western Ontario. We are very pleased that our report has stimulated an interesting and important discussion. In responding to these letters, there was no intention on our part to under-represent the research carried out by individuals in various institutions, and we very clearly pointed out the limitations of our investigation in the manuscript. These limitations were also highlighted by Professor Byrick in his accompanying Editorial.¹

Using the principle that one research project represents one manuscript, regardless of the number of authors involved, we had hoped and intended to capture the vast number of research projects taking place within each institution, in which an anesthesiologist played a significant role. Our main goal was to determine the total amount of research that was taking place and not the total number of manuscripts authored or co-authored by individual faculty or staff members. If one also relies upon information from departmental annual reports to determine the number of publications in a given year, there is a significant risk of counting the same publication multiple times. Using the methodology reported in our manuscript, there was little risk of that happening. Furthermore, by confining our search to the corresponding author, we felt confident that the key contributor or the individual over-seeing the project was identified. This methodology greatly reduced the risk of multiple counting of the same article, and may also account for some of the discrepancies reported by the correspondents. Concern was also expressed that we failed to capture articles published in non-anesthesia journals. Our search strategy did capture those articles, if the anesthesiologist was the corresponding author and therefore likely played an important role in the project.

We are most encouraged to note the positive impact of a mandatory research rotation for residents, on research productivity at l'Université de Montréal. These data very strongly support our contention that research should be mandatory in all training programs, and make a strong case for a mandatory rotation in research. If we do not expose our residents to research at some point during their training, there is little hope that this experience will be gained later on. While appreciating that most residents have limited interest or desire to pursue a career in research, it is our view that exposure of residents to the research process will help to inculcate within them the importance of research in maintaining and enhancing anesthesia as a profession, and not as a

trade. Our graduates should have some understanding of the processes involved and the importance of research, and should appreciate the need to support the efforts of those who do become involved in research. Just as students are expected to be familiar with calculus and organic chemistry before entering medical school (with no expectation of their becoming mathematicians or chemists), it is important for our residents to understand how the information in our clinical textbooks was generated from basic science and clinical research.

We thank the correspondents for their helpful comments and we are grateful for the opportunity to clarify our position. We must also re-emphasize that it was never our intention to capture absolute numbers of publications. Instead, our intent was to examine the trends of research activity taking place in Anesthesiology Departments across the country, regardless of the number of individuals involved. We hope that we captured most, if not all, of the most important work published in our discipline during the period in question. If we did not do so, we are truly disappointed.

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Reference

- 1 Byrick RJ. Anesthesia research productivity in Canada: role of academic departments (Editorial). *Can J Anesth* 2006; 53: 217–21.

Academic-industry relations

To the Editor:

If I might lean on my senior membership to justify comment from afar, I would like to address the letter in the March issue from Dr. Stuart L. Vandewater, entitled “Shocked and appalled”, and the response from Dr. Robert J. Hudson.¹ My Canadian experience is some 37 years out of date now, but the scene in the United States is not very different in this regard.

The topic is important and relates of course to concerns about the relationship between sponsorship and reported research results. This issue can be argued from many angles. To go directly to the point: good research cannot be conducted without support and federal funding increasingly goes to bench research, leaving a gap at the clinical investigation level. Industry, as well as special interest groups (clinical disorder societies for example) can and do fill this gap to an important extent. There is good reason for

caution in the case of targeted research funding and peer-reviewed journal editors are well aware of this. However, as Dr. Hudson explains in the instance under discussion, the research in question is not targeted, i.e., the funding is not tied to any particular line of investigation. On the contrary, the funding is put in a pool and then, from this, is available to any applicant who successfully competes for an award. There is no link between the funding source, and the individual project and its parent department. This contrasts so clearly with the problems that may arise in the case of clinical trials of a new pharmaceutical product, where the relationship is quite different and all sides then benefit only after close scrutiny as to possible bias.

One can only conjecture as to motive on the part of companies responsible to their shareholders for funding research not tied in any way to their products. I would argue that it is reasonable for industry to participate in this funding because the maintenance of a viable national clinical research environment of high quality is a necessary part of their Research and Development picture. They have nowhere else to turn for this and, in the case of our specialty, the Canadian Anesthesia Research Foundation is therefore fulfilling a mutual interest in an admirable way. I do not recommend holding one’s breath pending increased federal funding for clinical research.

Dr. Hudson’s explanation exonerates university departments. The policy of the *Journal* as to the extent and manner in which it advertises its relationship to industry is, I believe, a separate and small part of a larger and more worrisome picture: industry product-promotion practices and the professional purchase choices of individual society members. It would be nice to see this confined to the paid advertisement pages in the case of the *Journal*.

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Reference

- 1 Vandewater SL. Shocked and appalled (Letter). *Can J Anesth* 2006; 53: 322.

Potential pitfalls of interim analysis

To the Editor:

In the evaluation of medical treatments, randomized trials are the current gold standard. According to the Mayo Clinic Clinical Trials glossary,¹ randomization