

CORR Insights

CORR Insights®: A Dedicated Research Program Increases the Quantity and Quality of Orthopaedic Resident Publications

Julius A. Bishop MD

Where Are We Now?

Research participation is an important part of residency training. Residents can dive deep into their chosen research topic as well as acquire skills in study design, data collection, analysis, and scientific writing. A record of successful publi-

This CORR Insights® is a commentary on the article “A Dedicated Research Program Increases the Quantity and Quality of Orthopaedic Resident Publications” by Torres and colleagues available at: DOI: [10.1007/s11999-014-4080-1](https://doi.org/10.1007/s11999-014-4080-1).

The author certifies that he, or a member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or the Association of Bone and Joint Surgeons®.

This *CORR Insights*® comment refers to the article available at DOI: [10.1007/s11999-014-4080-1](https://doi.org/10.1007/s11999-014-4080-1).

cations may enhance the chances of obtaining a choice fellowship position or job after graduation. Those who do pursue careers as clinician-scientists may derive pleasure from the intellectual stimulation of research and can help advance the field. Even those who choose not to pursue research beyond residency or fellowship benefit from an enhanced ability to critically assess the scientific literature and apply it to their patients. Recently, there has been increasing interest in systems-based approaches to encouraging resident research. Described interventions have included the provision of appropriate resources and protected time for research as well as the creation of dedicated research programs [2]. However, the impact of these interventions remains uncertain, as there is no single metric by which success can be measured. Should we be most interested in quality and quantity of

scholarly output, evidence-based patient care, intellectual development and skill acquisition, or perhaps ongoing research activity beyond residency and fellowship?

Where Do We Need To Go?

The authors describe the formation of a dedicated resident research program, which established a number of policies and standards for resident research and created a committee of faculty members to provide support and monitor compliance. As compared to residents trained before the establishment of the program, those trained after its inception authored more publications in higher impact journals. It is important to note, however, that this effect did not persist after graduation from residency. In the absence of postresidency scholarly efforts amongst trainees, the longer-term implications of the dedicated research program are unclear. A cynical interpretation of these results is that the residents responded to the demands of the program only out of obligation, and therefore did not

J. A. Bishop MD (✉)
Department of Orthopaedic Surgery,
Stanford University Medical Center,
450 Broadway Street MC 6342,
Redwood City, CA 94063, USA
e-mail: jabishop@stanford.edu

sustain their enhanced productivity. While more residents pursued fellowships after the establishment of the dedicated resident research program, there is no evidence that more pursued academic careers. Whether or not the program improved proficiency in critical assessment of the literature or increased adherence to evidence-based medicine guidelines was not evaluated. Future studies should address these questions.

How Do We Get There?

While Torres et al. provided valuable information about the implementation and short-term impact of a dedicated resident research program, publication quantity and quality are fairly limited markers of success. Residents should be provided with clear research-related learning objectives and their progress towards achieving these objectives should be measured. Just as the

Accreditation Council for Graduate Medical Education has introduced milestones for medical knowledge and patient care [1], milestones for research should also be created. In the short-term, these could be established by individual residency programs, while the long-term goal should be the creation of standardized and centralized milestones like those created for clinical care. We also need more sophisticated measures of competency. The lack of a validated assessment instrument for measuring physician competency in research methodology has already been recognized [3], but no such tool is available. Although such an instrument need not be specific to orthopaedics, orthopaedic educators should proactively support its development. Though increased publication quantity and quality are worthy goals, we should aspire to graduate residents whose understanding of research methodology is deep enough to allow them to assess critically the papers

they read, and to know when a paper is good enough to guide treatment. Once learning objectives are in place and more-robust instruments for measuring proficiency are available, the impact of commendable programs such as the dedicated resident research program studied here should be reassessed more comprehensively.

References

1. Accreditation Council for Graduate Medical Education. The orthopaedic surgery milestone project. Available at: <http://acgme.org/acgmeweb/Portals/0/PDFs/Milestones/OrthopaedicSurgeryMilestones.pdf>. Accessed December 2, 2014.
2. Balch Samora J, Bashook P, Jones A, Milbrandt T, Mazzocca AD, Quinn RH. Orthopaedic graduate medical education: A changing paradigm. *JBJS Reviews*. 2014;2(11):e1.
3. Enders F. Evaluating mastery of biostatistics for medical researchers: Need for a new assessment tool. *Clin Transl Sci*. 2011;6:448–454.