BRIEF
REPORTS

A Point System as Catalyst to Increase Resident Scholarship: An MPCRN Study

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INTRODUCTION: Encouraging resident scholarly activity has been a long-standing challenge for medical educators. The Accreditation Council for Graduate Medical Education (ACGME) has been increasing its emphasis on scholarly activity, forcing programs to evaluate their existing processes. This study sought to evaluate the impact of a scholarly activity point system on the resident scholarly productivity at multiple programs.

METHODS: Five military family medicine residencies evaluated resident outcomes 2 years before and 2 years after the introduction of a scholarly activity point system. Outcome measures included peer-reviewed publications with a resident as first author, peer-reviewed publications with a resident as any author, resident presentation of scholarship at a regional, national, and international conference, IRB-approved protocols with a resident as principal investigator, and IRB-approved protocols with a resident in any role.

RESULTS: Four of the five programs experienced substantial increases in nearly every outcome. The fifth program, which had a more robust culture of inquiry at baseline, did not experience an increase in resident scholarly productivity.

CONCLUSIONS: A scholarly activity point system was associated with an increase in resident scholarly production in family medicine programs. It appears to work best in programs that start from a lower level of scholarly productivity at baseline. A point system appears to be a useful addition to scholarly activity curricula.

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Encouraging resident scholarly activity is an ongoing challenge for medical educators.[1-3] For many years, family medicine leaders have called for an increase in the amount, quality, and scope of scholarship within the specialty.[4] The ACGME's increased emphasis on resident and faculty scholarly activity means that now, more than ever, this perennial problem has generated a substantial amount of discussion within residency education programs.[5]

Similar concerns and similar barriers to resident scholarship have been reported in other specialties.[6-8] Compounding the difficulties is the fact that the language of the ACGME requirements for resident scholarly activity are rather ambiguous. This ambiguity itself leads to further difficulties because individual specialties, programs, and residents may each have their own interpretation of the requirements.[9]

There is general agreement in the literature that the presence of certain resources, and the implementation of certain practices, is associated with increased quality and quantity of resident scholarship. These include protected time, access to mentors, a formal curriculum, availability of technical assistance for residents, a venue to present scholarship, and available funding to support projects.[2]

In 2009, Seehusen et al introduced a point system to encourage resident scholarly activity.[10] The system was developed to reduce the anxiety many residents felt about required scholarly activity by legitimizing and incentivizing a wide variety of scholarship types. Since that publication, several additional military programs

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have implemented similar point systems. Each of these programs had different levels of resident scholarly activity at baseline, dissimilar resources available to them, and diverse amounts of faculty experience with which to offer mentorship. This offers an opportunity to evaluate the impact of a point system across a variety of resident settings.

Methods

After gaining approval from each local Institutional Review Board, five military family medicine residency programs that now utilize a scholarly activity point system reviewed the impact of this change. These five programs are all part of The Military Primary Care Research Network (MPCRN). Outcome measures included peer-reviewed publications with a resident as first author, peer-reviewed publications with a resident as any author, resident presentation of scholarship at a regional, national, or international conference, IRB-approved protocols with a resident as principle investigator, and IRB-approved protocols with a resident in any role.

The point system itself is described in detail elsewhere.[10] To evaluate outcomes, resident files were reviewed for documented scholarly activity. PubMed and Google Scholar were searched to identify qualifying resident publications. Faculty mentors were queried about projects and, in some cases, residents were contacted directly. Scholarly outcomes were evaluated for the two academic years preceding the implementation and the first 2 academic years after implementation. Outcomes of interest were resident authorship on Pubmed index journal articles or book chapter, resident participation in region, national or international presentations, and residents acting as an investigator on an IRB-approved research project.

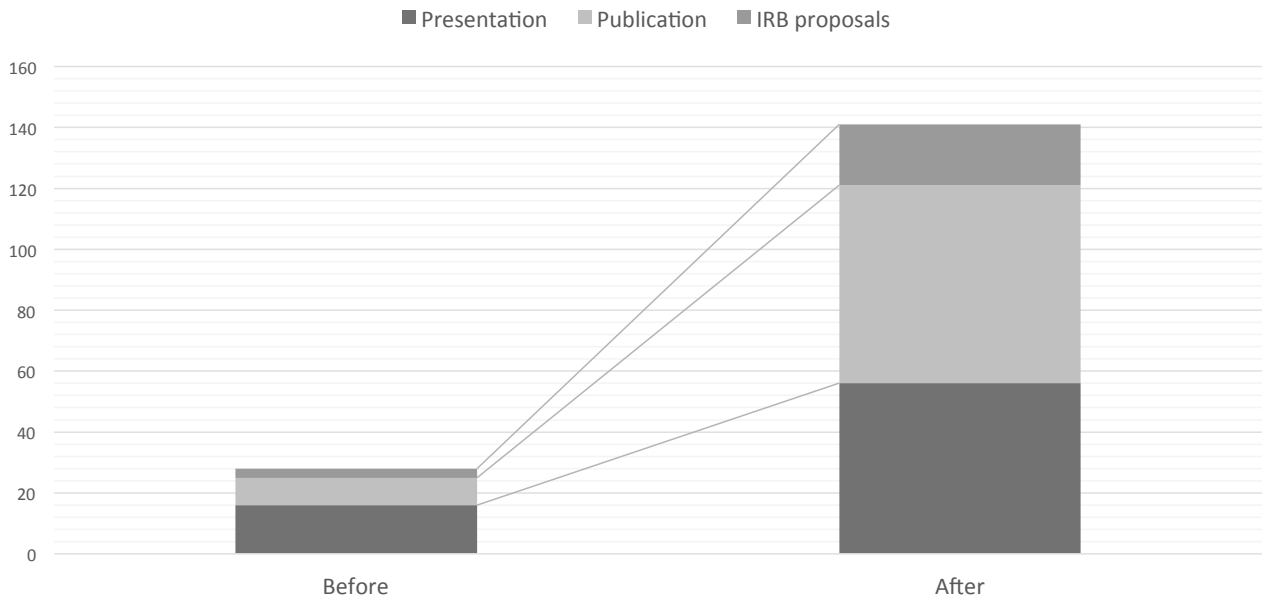
The programs implemented the point system at varying times, ranging from 2008 to 2011. No resident identifying characteristics were recorded. Descriptive statics were used to evaluate the impact in each program as the overall number of programs evaluated and a paired *t* test was used to evaluate pre- and post-implementation scholarly production.

Results

Figure 1 displays the overall resident scholarly activity for all five residency programs during the 2 years totals before and the 2 years after implementation. Combining all five programs, the total resident scholarly production increased by greater than two-fold in the post-implementation period for each individual outcome measured. When combined, there was a statistically significant increase in average resident scholarly production (7.0 versus 27.2; *P* value=.032). On average there was a nearly four-fold increase in overall resident scholarship, defined as a combination of publications, presentations and IRB approved protocols.

When each residency is looked at separately, Programs 1 through 4 each experienced large increases in resident scholarly production in nearly every category. Resident publication, in particular, increased substantially in all four of these programs. Program 5, however, showed a decrease in overall resident scholarly productivity (17 projects before and seven after).

Figure 1: Resident Scholarship Activity Before and After Point System Implementation



Discussion

The introduction of a scholarly activity point system was associated with a statistically significant increase in overall resident scholarly production. Actual increases were only seen in four of the five programs. It may be that this incentivizing system works best in programs that are starting from a lower level of scholarly productivity at baseline. This makes sense given the theoretical basis of the point system. The system is believed to work because it allows residents to attempt scholarship they feel comfortable with rather than demanding a certain product from all residents. This tends to grow comfort and confidence in residents, which progressively leads to a positive spiral of achievement.[10]

The outcome for Program 5 was clearly much different than for the other four programs. The authors believe this is because Program 5 already had a strong foundation for research prior to the time frame of this study. Additionally, this program was the only one of the five situated within a large academic tertiary care medical center. The program had a fairly robust scholarly culture at baseline, therefore may not have needed a catalyst to push residents toward scholarship. Lastly, the medical center had a local annual resident scholarship program to which most residents tended to submit to meet their research graduation requirement both before and after the point system implementation. Local scholarship presentations were not captured in this study because it was too difficult to extract that data from existing sources.

There are several weaknesses of the current study that must be acknowledged. First, only five residencies, and all of them military, were included. The data were examined only retrospectively, and no control group data is available. Additionally, it must be acknowledged that the introduction of a point system was only one part of larger curricula in each of these residencies. When these program directors implemented the point system, they were sending the message that this was an expectation, thereby influencing the culture of the program.[3] These factors make it impossible to attribute causation solely to the point system.

Lastly, it is possible that the overall trend toward more resident scholarly actively might have driven the increased amount of scholarship collectively noted in this study. The authors feel this is unlikely since the implementation dates back as far as 2008, and all five programs implemented the point system prior to the 2014 change in ACGME requirements for family medicine.

Further studies should be conducted to evaluate a scholarly activity point system within civilian residencies to determine if such an approach works equally well in that environment. There is no clear reason why it would not. Also, future studies should evaluate whether or not a point system is a useful tool in specialties other than family medicine. Since encouraging resident scholarship appears to be a ubiquitous problem in graduate medical education, it seems likely that other specialties may also benefit. Lastly, the system could be further modified and refined to find nuances that might further encourage resident productivity. For instance, even in a residency such as the fifth residency in this study, could the point system be modified to weight national presentations higher and encourage residents to push themselves beyond local presentation?

Residency programs wanting to increase their resident scholarly production should consider implementing a scholarly activity point system as one element of their scholarly active curriculum. This system is most likely to be beneficial in programs that currently have lower levels of scholarly output by residents.

DISCLAIMER: The views expressed in this article are those of the authors and do not reflect the official policy or position of the United States Government, Department of the Army, or the Department of Defense.

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