

The Role of Residency Accreditation Program Requirements on Scholarly Activity in Family Medicine

Grant S. Hoekzema, MD, FAAFP (corresponding author)

Past-Chair, ACGME Review Committee for Family Medicine

Chairman, Department of Family Medicine, Mercy Hospital and Residency Program

St. Louis, MO 63141

Warren Newton, MD MPH

President and CEO, The American Board of Family Medicine

Lexington, KY

Wendy Barr, MD

Stephen Stacey, DO

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Abstract

Residency program requirements in Family Medicine have long required scholarship of both faculty and residents as part of instilling a culture of discovery and inquiry. The role of program requirements in meeting this objective was evaluated by analyzing the scholarly activity of residency faculty over the years 2016-2021 as well as the number of citations around scholarship and comparing the data to the rigor of the wording of the program requirements that pertain to scholarly activity. The overall production of scholarly activity increased in all domains over the time studied, and this increase appears to be out of proportion to the growth in the number of programs and faculty. The influence of more rigorous program requirements over the same time period may be a factor in promoting a growth in scholarly activity in family medicine residency programs.

Introduction

Scholarship in Family Medicine is at a crossroads, with the challenge to craft a national strategy around research capacity. The natural focus of any research strategy will lean heavily on academic institutions, and Family Medicine residency programs will have a key impact in the efforts of unfolding such a strategy and in training future family physicians in key research skills. A key question is to what extent can and should residency requirements contribute to that effort?

Residency programs are undergoing a generational shift towards competency-based education with the release of new program requirements, including the need to model lifelong learning and self-reflection.

(1) These skills form the bedrock of scholarship. The accreditation requirements regarding scholarship which target the development of research skills will, to a large degree, direct the formation of future Family Medicine researchers and scholars. Residency faculty scholarship is required of all programs and can serve as a major influence in the formative process of an environment of inquiry. There is evidence that there is evidence of imprinting in residency with respect to cost-effectiveness and complications of

procedures. (2) Accreditation requirements can serve as a tool in the imprinting of critical appraisal and research skills for residents as they embark on their careers. This paper, as part of a larger effort, will explore the role of accreditation requirements in Family Medicine residency and the influence they play in the scholarship of Family Medicine as a discipline.

Background

The Accreditation Council for Graduate Medical Education (ACGME) and the Review Committee for Family Medicine (RCFM) have published program requirements (PRs) for scholarship for decades, these have changed over the years to be more specific about scholarship expectations and the forms of scholarship that are acceptable. (Table 1) On one hand, these requirements inspire scholarship in all residencies, helping foster a culture of inquiry and master adaptive learning. However, minimum requirements intended to be the floor can become the ceiling for many programs who aspire to avoid citations but not necessarily advance scholarship.

Prior to 2016 the guiding principle in the PR's for scholarly activity the last 20+ years has been that the responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included. To clarify what was meant by scholarship the PRs listed all forms of Boyer's definition of scholarship (discovery, integration, application, teaching) as options to fulfill the requirements. However, programs also needed to provide opportunity for residents to participate in research or other scholarly activities, as well as quality improvement activities (which was unique to Family Medicine for some time). This was complimented by instruction in the critical evaluation of medical literature, including assessing study validity and the applicability of studies to the residents' patients. The participation of each resident in an active research program was to be encouraged as preparation for a lifetime of self-education after the completion of formal training, but research by residents was not required. (3)

Between 2011 and 2016 the FM PR's only required evidence of faculty scholarship in a single domain, (see table 2) and these requirements differed from other specialties. (4) In 2013 with the adoption of the Common Program Requirements (CPRs) as part of the Next Accreditation System the PRs had to be classified as core or detail requirements. (5) Core requirements are citable and must be met by all programs, while detail requirements can be cited in certain circumstances, programs on continued accreditation in good standing are free to innovate around these requirements. These seemingly subtle differences shift the emphasis from something broader and more general to more proscriptive – the shift from PRs being classified as detail to core requirements is the most notable recent change. It is important to understand that detail requirements allow programs to innovate around if the program is in good standing, so this would allow less faculty to be held accountable for scholarship in less domains in 2016 than 2019.

In After 2016, family medicine residency scholarship requirements changed to include a minimum of three domains of scholarship by faculty in residencies, including peer-reviewed publications. This was reinforced in 2019 by the RCFM, with the intention of promoting the skills needed to maintain a culture of scholarship throughout the FM GME community. (6) In its recent major revision, the RCFM maintained its expectations for scholarship as one tool to foster the development of master adaptive learners. Current program requirements for faculty state: Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains (table 2).

<p>Scholarship Domains (table 2):</p> <ul style="list-style-type: none">Research in basic science, translational science, patient care, or population healthPeer-reviewed reportsQuality improvement and/or patient safety initiativesSystematic reviews, meta-analysis, review articles, chapters in medical textbooks, or case reportsCreation of curricula, evaluation tools, didactic educational activities, or electronic educational materialsContributions to professional committees, educational organizations, or editorial boardsInnovations in education

The background and intent of the current requirements state: “For the purposes of education, metrics of scholarly activity represent one of the surrogates for the program’s effectiveness in the creation of an environment of inquiry that advances the residents’ scholarly approach to patient care. The Review Committee evaluates the dissemination of scholarship for the program as a whole, not for individual faculty members, for a five-year interval, for both core and non-core faculty members, with the goal of assessing the effectiveness of the creation of such an environment. The ACGME recognizes that there may be differences in scholarship requirements between different specialties and between residencies and fellowships in the same specialty.” (7) Given this underlying goal, residency research requirements should not only require the generation of faculty scholarship, but also help motivate ongoing development of a research culture.

Methods

To better understand the impact of PRs and scholarship, the authors reviewed a summary of scholarly activity by program for current Family Medicine faculty as reported for the last 5 academic years. The ACGME Web-based Accreditation Data System (Web ADS) is a central accreditation data collection

system that all programs must update annually with both common and specialty specific data, including faculty scholarly activity. Data was based on information for 18594 total faculty in 706 currently accredited programs.—This data was obtained from ACGME staff based on Web ADS data submitted annually by all accredited programs. While all forms of scholarship were reviewed, we have chosen to focus on the three largest domains (peer reviewed publications, conference presentations and non-peer reviewed/other publications. The ratios of each of these domains to the number of faculty and programs was then calculated. (Table 3) It should be noted that in 2018 the ACGME first asked for “other/non-peer reviewed presentations” to be listed to allow for non-PMID publications to be counted as a separate category. The authors also analyzed the program requirements for scholarship in family medicine for the corresponding years. (Table 1)

The authors also reviewed scholarly activity citation data for the ten years prior to the pandemic. Data on citations was based on information from ACGME collected and summarized by RC-FM leadership for the Starfield Summit IV in preparation for the Shaping GME: Future of Family Medicine major program requirement revision process. (8).

Results

The trends in scholarship for FM show that as the number of programs has expanded and to a lesser extent the number of faculty, all forms of scholarship increased. (Table 3 and Figure 1) However, non-peer reviewed, and other publications outnumber peer-reviewed publications, suggesting that publishing avenues that are not indexed on the NLM (such as FPIN) are preferred by residency faculty. Conference and other presentations far exceed all other forms of scholarship, and grant leadership has slowly grown but remains one of the lowest categories.

For citations, the data show that there were relatively few citations around scholarship up until the pandemic. (Figure 2) However, based on citation data, it appears the definition of scholarship was

interpreted loosely, and peer-reviewed original research was not the expectation, nor was having the majority of core faculty participating in scholarship. As long as some faculty participated in one of the Boyer's domains, the program likely did not receive a citation.

Data on citations and AFI's for 2020-2022 is still embargoed – the information presented here is based on public presentations one of the authors (GH) gave in his role as former chair of the RCFM. The number of programs that were flagged for inadequate scholarship and subsequently given a citation of AFI dramatically increased from 2020 to 2022. This likely reflects the lack of opportunity for conference and other presentations during the pandemic, which had leveled off after a rapid increase in the previous 3 years.

Discussion

Analysis of the five years of scholarship data collected in Web ADS revealed that conference and other presentations made up the majority of scholarship in most programs. Peer reviewed publications did increase after the 2019 decision to continue to require scholarly activity in this domain, but still lag behind other non-peer reviewed publications (those not indexed on PMID) indicating a possible reliance on "FPIN" like publications. However, there was an increase in overall scholarship per program and per faculty between 2016 and 2019 that is not explained solely by growth in the number of either, suggesting that the changes in the PRs that mandated participation in more than one scholarship domain had a positive influence on scholarly activity. Prior to 2016, scholarly activity requirements were classified as "detail" but since then, the requirement for programs to demonstrate scholarship in three of the five domains, was changed to a "core" requirement. This means that all programs must demonstrate compliance with the requirement and are not free to innovate, even when in good standing. This

increased emphasis on scholarship in residency may mirror similar changes seen in other specialties when scholarship PRs are made more rigorous. (9)

Citations for scholarship remained relatively low until the pandemic, when those skyrocketed, most likely due to lack of opportunity to travel to present at conferences and also due to prioritizing acute patient care needs and practice redesign over scholarship. What is not represented in the citation data is whether or not a program received an Area for Improvement (AFI) regarding scholarly activity. AFIs are given when a program is deemed by the RCFM to have an area of the program requirements that does not meet the criteria for a citation, but still warrants attention by the program to avoid devolving into a citation in the future. AFIs for scholarly activity are usually given based on the peer judgement of the reviewers and are likely much more frequent than citations.

Based on the experience of one of the authors (GH), citations for scholarship most often fall into two groups: new programs who are applying or in initial accreditation phase, where a culture of scholarship has not yet matured; and then in those programs with multiple citations whose overall struggles and challenges are also evident in a lack of scholarship. Since the process of assigning citations and AFIs is one of peer judgement from the RCFM in consideration of the program through holistic review, there will also be variability in the application of accreditation decisions. However, having a common understanding of what constitutes substantial compliance around scholarship in residency will have a more consistent impact. For example, is giving a presentation to residents as part of a regular didactic program adequate to count as fulfilling one of the domains of scholarly activity as a faculty member, or should only presentations given to a wider audience outside the program count? Should residencies be held to different standards depending on their resources? Such as a rural training track versus a university-based program.

This analysis has several weaknesses. The data analyzed was collated from Web ADS data submitted by programs online for accreditation purposes. This may not represent the total scholarship output of faculty and residents in family medicine, or it may also be overinflated to satisfy accreditation requirements. The data was limited to five years and does not speak to resident involvement or the impact of scholarship on future research in the specialty or the impact of imprinting competency in the critical evaluation of medical literature, including assessing study validity and the applicability of studies to the residents' patients. The data were also de-identified and summarized, so there can be no conclusions made about individual programs or groups of programs with regard to scholarly activity.

Data from ACGME on scholarship is not granular enough to draw conclusions about the culture and commitment in individual programs, but it does indicate the influence of accreditation standards as a tool to promote scholarship as one piece of lifelong learning. The background and intent around several new requirements have explicitly stated that educational collaboration between programs is a means to meet the requirements and is strongly encouraged. It remains to be seen if this will come to fruition.

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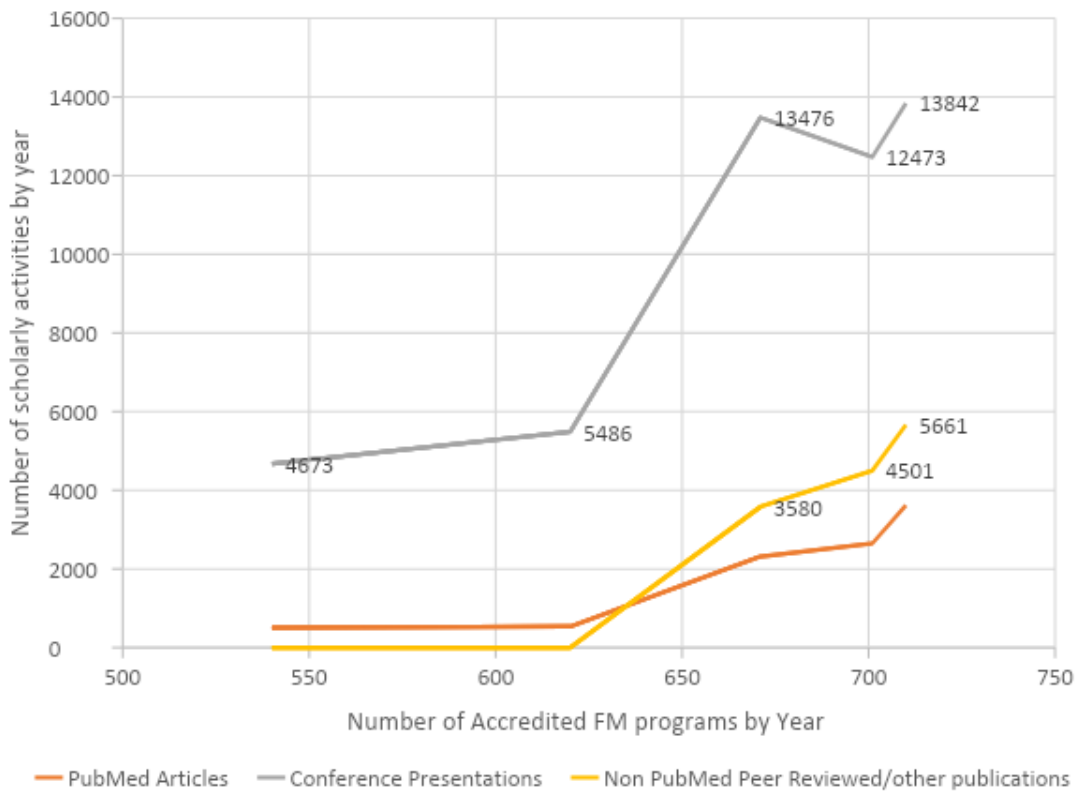
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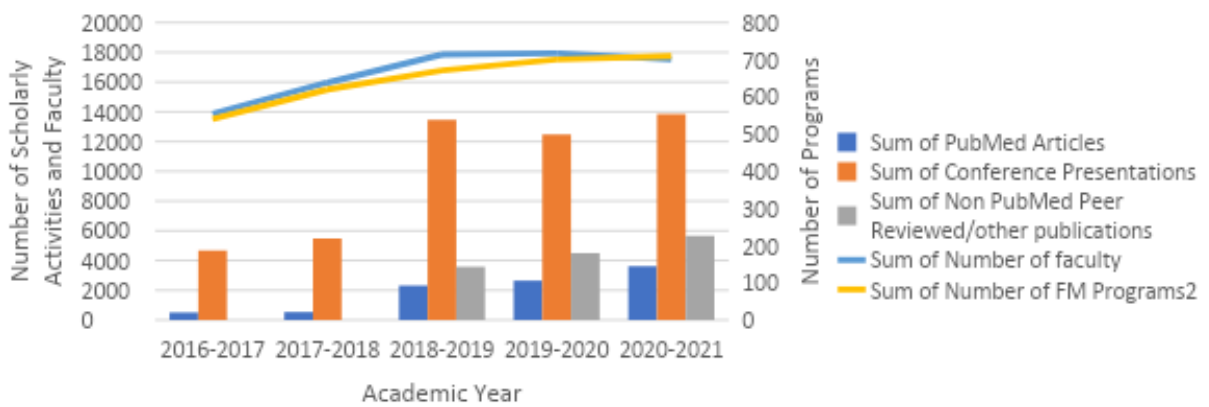
Table 3. Summary of Faculty Scholarship in FM residencies by Academic Year

Year	Number of FM Programs	Number of faculty	PubMed Articles	Conference Presentations	Non PubMed Peer Reviewed/ other publications	Ratio of PMID/programs	Ratio of PMID/faculty	Ratio of conf present/programs	Ratio of conf present/faculty
2016-2017	540	13861	505	4673	0	0.93	0.03	8.65	0.34
2017-2018	620	15959	535	5486	0	0.86	0.03	8.84	0.34
2018-2019	671	17855	2315	13476	3580	3.45	0.13	20.1	0.75
2019-2020	701	17936	2647	12473	4501	3.77	0.15	17.8	0.70
2020-2021	710	17546	3617	13842	5661	5.09	0.21	19.5	0.79

Figure 1: Scholarship trends in FM Residencies 2016-2021



Trends in Scholarship Domains by Year



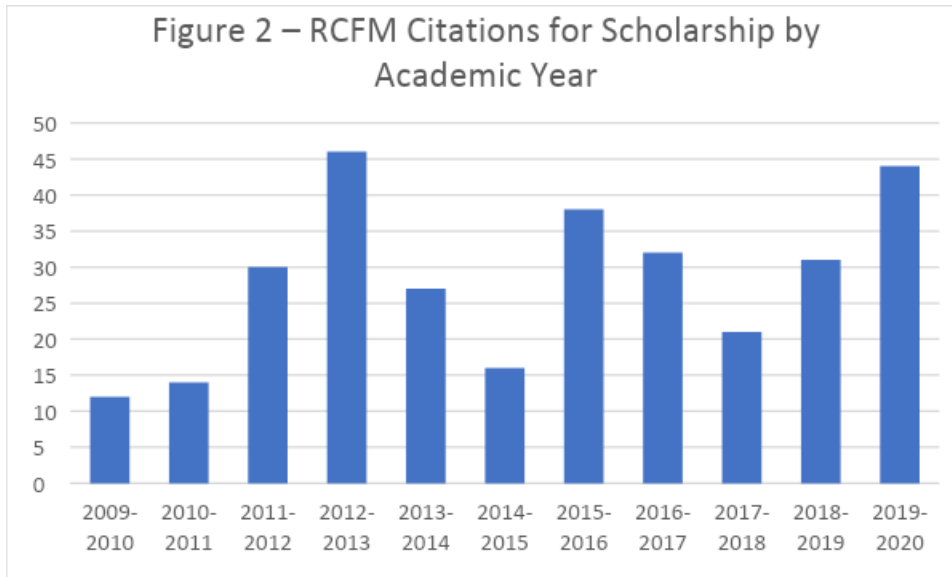


Table 1. Summary of FM Scholarly Activity Program Requirements from 2001-2023:

2001

Faculty Research and Scholarly Activity

While not all members of a teaching staff must be investigators, the staff as a whole must demonstrate broad involvement in scholarly activity. This activity should include

1. Active participation in clinical discussions, rounds, and conferences in a manner that promotes a spirit of inquiry and scholarship.
2. Active participation in regional or national professional and scientific societies, particularly through presentations at the organizations' meetings and publications in their journals.
3. Participation in research, particularly in projects that are funded following peer review and/or result in publications or presentations at regional and national scientific

meetings.

4. Provision of guidance and technical support (e.g., research design, statistical analysis)

to residents involved in research.

Resident Research and Scholarly Activity

Each program must provide opportunity for residents to participate in research or other

scholarly activities. Instruction in the critical evaluation of medical literature, including

assessing study validity and the applicability of studies to the residents' patients, must

be provided...

2006

The responsibility for establishing and maintaining an environment of

inquiry and scholarship rests with the faculty, and an active research

component must be included in each program.

Scholarship is defined

as the following:

a) The scholarship of discovery, as evidenced by peer-reviewed

funding or by publication of original research in a peer reviewed

journal;

b) The scholarship of dissemination, as evidenced by review

articles or chapters in textbooks;

c) The scholarship of application, as evidenced by the publication

or presentation of, for example, case reports or clinical series
at local, regional, or national professional and scientific society
meetings.

Complementary to the above scholarship is the regular participation
of the teaching staff in clinical discussions, rounds, journal clubs, and
research conferences in a manner that promotes a spirit of inquiry
and scholarship; and the provision of support for residents' participation, as appropriate,
in scholarly activities.

Residents Scholarly Activities

Each program must provide an opportunity for residents to participate in
research or other scholarly activities, and residents must participate actively
in such scholarly activities....

2007-2011

The faculty must establish and maintain an environment of inquiry and
scholarship with an active research component...

Some members of the faculty should also demonstrate scholarship by one
or more of the following:

- (1) peer-reviewed funding;
- (2) publication of original research or review articles in peer-reviewed
journals, or chapters in textbooks;
- (3) publication or presentation of case reports or clinical series at local,
regional, or national professional and scientific society meetings; or,

(4) participation in national committees or educational organizations.

c) Faculty should encourage and support residents in scholarly activities.

Residents' Scholarly Activities

1. The curriculum must advance residents' knowledge of the basic principles of

research, including how research is conducted, evaluated, explained to

patients, and applied to patient care.

2. Residents should participate in scholarly activity.

a) Each program must provide supervised experiences for all residents in scholarly

activities such as research, presentations at national, regional, state, or local

professional meetings, or presentation and/or publication of review articles and

case presentations...

IV. B. 3. The sponsoring institution and program should allocate adequate educational resources to facilitate resident involvement in scholarly activities.

FM Program Requirement for Scholarship by year

2013-2016:

II.B.5. The faculty must establish and maintain an environment of inquiry and scholarship with an active research component. (Core)

II.B.5.a) The faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. (Detail)

II.B.5.b) Some members of the faculty should also demonstrate scholarship by one or more of the following:

II.B.5.b).(1) peer-reviewed funding; (Detail)

II.B.5.b).(2) publication of original research or review articles in peer reviewed journals, or chapters in textbooks; (Detail)

II.B.5.b).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, (Detail)

II.B.5.b).(4) participation in national committees or educational organizations. (Detail)

II.B.5.c) Faculty should encourage and support residents in scholarly activities. (Core)

2019-2023:

IV.D. Scholarship

IV.D.1. Program Responsibilities

IV.D.1.a) The program must demonstrate evidence of scholarly activities consistent with its mission(s) and aims. (Core)

IV.D.1.b) The program, in partnership with its Sponsoring Institution, must allocate adequate resources to facilitate resident and faculty involvement in scholarly activities. (Core)

IV.D.1.c) The program must advance residents' knowledge and practice of the scholarly approach to evidence-based patient care. (Core)

IV.D.2. Faculty Scholarly Activity

Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains: (Core)

- Research in basic science, education, translational science, patient care, or population health
- Peer-reviewed grants
- Quality improvement and/or patient safety initiatives
- Systematic reviews, meta-analyses, review articles, chapters in medical textbooks, or case reports
- Creation of curricula, evaluation tools, didactic educational activities, or electronic educational materials
- Contribution to professional committees, educational organizations, or editorial boards
- Innovations in education

IV.D.2.b) The program must demonstrate dissemination of scholarly activity within and external to the program by the following methods:

IV.D.2.b).(1) faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, grant leadership, non-peer-reviewed print/electronic resources, articles or publications, book chapters, textbooks, webinars, service on professional committees, or serving as a journal reviewer, journal editorial board member, or editor; (Outcome)

IV.D.2.b).(2) peer-reviewed publication. (Outcome)

IV.D.3. Resident Scholarly Activity

IV.D.3.a) Residents must participate in scholarship. (Core)

IV.D.3.b) Residents should complete two scholarly activities, at least one of which should be a quality improvement project. (Detail)

IV.D.3.c) Residents should work in teams to complete scholarship, partnering with interdisciplinary colleagues, faculty members, and peers. (Detail)

IV.D.3.d) Residents should disseminate scholarly activity through presentation

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