Defining Scholarly Activity in Graduate Medical Education

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Abstract

Background Scholarly activity is a requirement for accreditation by the Accreditation Council for Graduate Medical Education. There is currently no uniform definition used by all Residency Review Committees (RRCs). A total of 6 of the 27 RRCs currently have a rubric or draft of a rubric to evaluate scholarly activity.

Objective To develop a definition of scholarly activity and a set of rubrics to be used in program accreditation to reduce subjectivity of the evaluation of scholarly activity at the level of individual residency programs and across RRCs.

Methods We performed a review of the pertinent literature and selected faculty promotion criteria across the United States to develop a structure for a proposed rubric of *scholarly activity*, drawing on work on scholarship by experts to create a definition of scholarly activity and rubrics for its assessment.

Results The literature review showed that academic institutions in the United States place emphasis on all 4 major components of Boyer's definition of scholarship: discovery, integration, application, and teaching. We feel that the assessment of scholarly activity should mirror these findings as set forth in our proposed rubric. Our proposed rubric is intended to ensure a more objective evaluation of these components of scholarship in accreditation reviews, and to address both expectations for scholarly pursuits for core teaching faculty and those for resident and fellow physicians.

Conclusion The aim of our proposed rubric is to ensure a more objective evaluation of these components of scholarship in accreditation reviews, and to address expectations for scholarly pursuits for core teaching faculty as well as those for resident and fellow physicians.

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Introduction

Attempting to define *scholarly activity* so that it is relevant to graduate medical education across specialties and institutions—from the large academic center to a rural teaching environment—is akin to finding the Holy Grail.

Scholarly activity is a common program requirement for accreditation by the Accreditation Council for Graduate Medical Education (ACGME) for all specialties.^{1,2} Last year alone across specialties and subspecialties, Residency Review Committees (RRCs) issued 402 citations (6.5% of all citations) for scholarly activity.³ At the same time there is no uniform way to assess scholarly activity of faculty and residents. Although some RRCs have developed rubrics that help them ensure that scholarly activity is being performed to their specifications, other RRCs do not have a similar mechanism. In an effort to streamline the review

process and ameliorate subjectivity, the Council of Review Committee Residents (CRCR) and its education subcommittee recognized the need for a minimum or base-level requirement that faculty and residents from all specialties in all academic settings would be expected to meet with regard to scholarly activity. The objective is to make a useful and accessible definition with a proposed rubric to enable a more objective evaluation of all residency programs.

Medical educators, particularly Boyer,⁴ Fincher et al,⁵ Simpson et al,⁶ Glassick et al,⁷⁻⁹ Irby et al,¹⁰ and Simpson and Fincher,¹¹ have written extensively on the topic of scholarly activity. Boyer sought to “move beyond the tired old ‘teaching versus research’ debate and give a familiar and honourable [sic] term ‘scholarship’ a broader, more capacious meaning, one that brings legitimacy to the full scope of academic work.”⁴ This is applicable to the development of a definition of scholarly activity in graduate medical education. Boyer’s pivotal work lays out the 4 components of scholarship: discovery, integration, application, and teaching.⁴ Many other works have asserted that these aspects of scholarship are important for consideration, especially teaching.^{5,9,10,11} Other works have provided insight about how scholarly activity may be assessed.⁶⁻⁸ We will draw on these themes in our definition of scholarly activity and its rubrics.

Methods

In an effort to make an inclusive definition, we surveyed faculty promotion criteria for a diverse sample of academic institutions. Our sample was nonrandom; it was obtained by both a convenience sample of the institutions of Council of Review Committee Residents members and other sites that had faculty promotion criteria readily available on their website. Because we wanted our overall definition to be accessible to a wide variety of institutions, an effort was made to include both major academic centers and rural sites. We divided the United States into the following regions: Midwest, Northeast, Southeast, Southwest, and West. Alaska and Hawaii were included in the West region. We then surveyed 6 institutions from each region for a total sample of 30 institutions.

We obtained faculty promotion criteria through a search of the institution’s website, or formally requested the criteria if they were not available online. The promotion criteria were then assessed for the presence of the 4 major components of scholarship set forth by Boyer: discovery, integration, application, and teaching.⁴ We interpreted discovery to be equivalent to advancing knowledge, integration to mean synthesizing knowledge, application to mean applying existing knowledge, and teaching to mean dissemination of existing knowledge.

We also collected and compared the rubrics and drafts of rubrics for evaluating scholarly activity from the 6 RRCs (of the total 27 RRCs) that used criteria or rubrics or had developed drafts.

Results

The existing RRC rubrics vary widely in their definition of scholarly activity (TABLE 1). Two RRCs defined scholarship to mean solely the scholarship of discovery, whereas other RRCs drew directly from Boyer’s work. Still others held the program director to a higher standard compared with other teaching faculty because “The program director sets the tone for the scholarly environment of the residency program. In order to be effective in this capacity, the program director must be recognized and respected by faculty members and residents as having demonstrated success in scholarship.” Additionally, some RRCs required higher standards for some subspecialties (TABLE 1). By and large, RRCs with more definitive standards appeared to place a high value on more recent peer-reviewed publications.

Based on these results, we constructed a rubric to reflect the widely embraced definitions of scholarship (TABLE 2). We suggest that this rubric could be used as a minimum requirement across specialties but understand that many specialties may place a higher value on research or one of the other components of scholarly activity. With this realization, each RRC may choose to make its definition more specific in one or more of these definitional areas as needed, so long as an objective tool is used for evaluation in the context of accreditation. The more novel criteria of scholarship that we identified are not included in this definition.

The proposed rubric (TABLE 2) addressed scholarly contributions for faculty and residents. To avoid placing undue pressure on individual attending faculty members, we propose that the 4 components of scholarship be assessed at the level of the aggregated contributions of the core faculty members within a given program. The rubric indicates that each resident should be exposed to all 4 components of scholarship during her or his residency. We feel that perhaps this is the best time to explore all of the components of scholarship to not only better understand the topics studied, but also to have a more clear grasp of how she or he might want to proceed with career choice and potential for continued involvement in professional societies.

Review of the faculty promotion criteria for institutions from all 4 geographic regions showed that all institutions incorporated the 4 components of Boyer’s definition of scholarship: discovery, integration, application, and teaching.

A total of 16 of the 30 institutions surveyed (53%) favored a mechanism that allowed the pursuit of one or

TABLE 1	EXISTING RESIDENCY REVIEW COMMITTEE (RRC) RUBRICS, SOME IN DRAFT FORM ^a				
RRC	Discovery	Integration	Application	Teaching	Other
1	X	X	X	X	Higher standards for subspecialties
2	X	X	X	X	
3	X (at least 50% of residents and faculty)				Higher standards for some subspecialties
(3)	X				
4	X	X	X		Higher standards for program director
(4)	X	X	X		Higher standards for program director
5	X	X	X	X	Point-based system
6	X				
7–27					No current objective measure

^a Subspecialties are in parentheses.

two of these components of scholarship while ensuring that all 4 of Boyer’s components of scholarship would be pursued by the overall institution. Generally, this was accomplished by creating multiple tracks or pathways, such as the *physician-scientist* or *clinician-teacher* pathways. Other commonly accepted forms of scholarship across the institutions surveyed included different forms of public service, professionalism, length of time at the institution, ability to acquire grants for research endeavors, peer recognition, and involvement in specialty organizations. A total of 13 of the 30 institutions surveyed (43%) had some form of additional or novel criteria. Specific additional metrics for the assessment of scholarly activity used by some institutions in our sample are shown in TABLE 3.

Discussion

Our survey showed that faculty promotion in all regions of the United States emphasizes all 4 components of Boyer’s

definition of scholarship: discovery, integration, application, and teaching. This is in stark contrast to the prior survey of promotion committee chairpersons in the United States and Canada performed in 1997¹² and suggests a shift over the past decade toward recognition of the importance of teaching and the necessity for availability of educational resources. This shift is now also present in the Canadian Federation of Post-Secondary Educators white paper on scholarly activity,¹³ standards for medical teaching in the United Kingdom,¹⁴ and standards for chiropractic education.¹⁵ The rubric for assessment of scholarly activity we are proposing for use across RRCs is designed to mirror this shift and is intended to ensure objectivity in the assessment of scholarly activity.

Our study has several limitations, including the fact that we used a nonrandom sample of institutions. This was due to our intent to include major academic institutions as well as institutions in rural areas to help make a broad and accessible definition for all residency programs.

TABLE 2	PROPOSED BASELINE RUBRIC FOR ALL ACCREDITATION COUNCIL FOR GRADUATE MEDICAL EDUCATION (ACGME) RESIDENCY REVIEW COMMITTEES (RRCs)	
Component of Scholarship	Examples	Assessment Criteria
Discovery = advancing knowledge	Published paper Work resulting in abstract	All 4 components of scholarship should be present when looking at the sum of the <u>core faculty</u> members’ work Each <u>resident</u> should be exposed to each of the 4 components of scholarship and should complete at least one scholarly activity during the residency training period More stringent requirements may be instituted by the specialty-specific RRC as needed
Integration = synthesizing knowledge	Case studies or reports Patient education projects	
Application = applying existing knowledge	Participation in national guideline panels Participation in professional societies	
Teaching = disseminating current medical knowledge	Preparing and delivering lecture(s) Curriculum development Development of web-based modules, etc.	

TABLE 3 NOVEL METRICS OF SURVEYED INSTITUTIONS BY REGION

Region	Metric
At least one institution in all regions	External funding
At least one institution in all regions	Professional service in department, institution, community, region, country, or world; service to professional societies
At least one institution in all regions	Length of time at institution
At least one institution in all regions	Preparation of an educator portfolio
Midwest, Southwest	Clinical care recognition
Northeast	Peer-recognized outstanding physician
Southwest	Personal characteristics (eg, professionalism, integrity)
West	Avoidance of professional service to the extent that it does not detract from scholarship of discovery

The scholarship of discovery and integration are relatively easy to assess given their tangibility. In contrast, the scholarship of application may be more difficult to quantify, but it offers a way to recognize the importance of clinical excellence,¹⁶ which may be additionally relevant to excellence in clinical education. It is important for academic medicine to not only have excellent physician scientists/researchers, but also excellent clinicians. The Johns Hopkins Bayview Medical Center has developed a metric to assess clinical excellence.¹⁷ This represents a relatively rare but useful example of Boyer's scholarship of application.

Because the meaning of physician or doctor has origins in the Latin verb *docere*, meaning "to teach,"¹⁸ we believe that Boyer's scholarship of teaching is an integral part of being a physician, especially an academic physician. There is a responsibility to not only teach and inform patients, but also to shape the growth of developing medical students, residents, and fellows. Although assessment of teaching is more subjective, medical educators cited in the literature have emphasized that the quality of teaching is directly proportional to the wealth of knowledge gained by the trainee or patient and should not be overlooked,^{4,5,8-11,13-15} and we agree.

Conclusions

Based on the findings of this study, it is clear that the institutions surveyed in the United States put emphasis on all 4 major components of Boyer's definition of scholarship: discovery, integration, application, and teaching. We feel that the assessment of scholarly activity should mirror these findings as set forth in our proposed rubric.

We propose our rubric (TABLE 2) as a means to ensure that the components of scholarship are more objectively accounted for in accreditation reviews, and it addresses both expectations for core teaching faculty and those for residents and fellows.

References

- 1 Accreditation Council for Graduate Medical Education. ACGME Common Program Requirements, effective July 1, 2011. http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramResources/Common_Program_Requirements_07012011%5B1%5D.pdf. Accessed September 25, 2012.
- 2 Wallack MK, Reilly L, Whalen T, Columbani P, Malangoni M, O'Leary P, et al. Scholarly activity. *J Surg Educ*. 2009;66(5):292-295.
- 3 Accreditation Council for Graduate Medical Education. ACGME Data Systems. <http://www.acgme.org/acgmeweb/tabid/159/DataCollectionSystems/AccreditationDataSystem.aspx>. Accessed September 25, 2012.
- 4 Boyer EL. *Scholarship Reconsidered: Priorities of the Professorate*. Princeton, NJ: Princeton University Press; 1990.
- 5 Fincher RM, Simpson D, Mennin SP, Rosenfeld GS, Rothman A, McGrew MC, et al. Scholarship in teaching: an imperative for the 21st century. *Acad Med*. 2000;75:887-894.
- 6 Simpson D, Fincher RM, Hafner JP, Irby DM, Richards BF, Rosenfeld GC, et al. Advancing educators and education by defining the components and evidence associated with educational scholarship. *Med Educ*. 2007;41:1002-1009.
- 7 Glassick CE, Huber MR, Maeroff GI. *Scholarship Assessed—Evaluation of the Professorate*. San Francisco, CA: Jossey-Bass; 1997.
- 8 Glassick CE. Boyer's expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching. *Acad Med*. 2000;75:877-880.
- 9 Glassick CE. Reconsidering scholarship. *J Public Health Manag Pract*. 2000;6:4-9.
- 10 Irby DM, Cooke M, Lowenstein D, Richards B. The academy movement: a structural approach reinvigorating the educational mission. *Acad Med*. 2004;79:729-736.
- 11 Simpson DE, Fincher RM. Making a case for the teaching scholar. *Acad Med*. 1999;74:1296-1299.
- 12 Beasley BW, Wright SM, Confrancesco J, Babbott SF, Thomas PA, Bass EB. Promotion criteria for clinician-educators in the United States and Canada: a survey of promotion committee chairpersons. *JAMA*. 1997;278:723-728.
- 13 Federation of Post-Secondary Educators. White paper on scholarly activity. April 2009. http://www.fpse.ca/files/uploads/pdfs/Scholarly_Activity_White_Paper_090430.pdf. Accessed September 25, 2012.
- 14 Purcell N, Lloyd-Jones G. Standards for medical educators. *Med Educ*. 2003;37:149-154.
- 15 Ward RW. Assessment of unpublished scholarly activity: an informal rubric for evaluating faculty performance. *J Chiropr Educ*. 2008;22(1):17-22.
- 16 Yusuf SW. The decline of academic medicine. *Lancet*. 2006;367(9523):1698-1701.
- 17 Wright SM, Kravet S, Christmas C, Burkhart K, Durso SC. Creating an academy of clinical excellence at Johns Hopkins Bayview Medical Center: a 3-year experience. *Acad Med*. 2010;85:1833-1839.
- 18 Merriam-Webster online dictionary. 2012. <http://www.merriam-webster.com/dictionary/doctor>. Accessed November 14, 2011.