

Chapter 21

Scholarship in Clinic



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Introduction

Scholarship is an important part of residency training, and programs are required by the Accreditation Council for Graduate Medical Education (ACGME) to support residents in scholarly activities [1]. Developing aptitude in scholarship has benefits at three different levels. At a personal level, it increases resident satisfaction by continuing to stimulate the academician in the resident as well as the faculty advisor. At a patient care level, it increases curiosity and critical thinking. It broadens the understanding of disease and improves patient care. At a professional level, it creates an opportunity to contribute to the larger medical literature.

Although many medical schools now include opportunities for early training in producing research and scholarship, even residents who have graduated from these schools require continued faculty mentorship to support their scholarly activity [2, 3]. In this chapter, we hope to provide clinic faculty with tools to guide residents to successfully perform scholarly activity.

Learning Objectives

1. To describe several types of scholarship opportunities in the ambulatory setting.
2. To develop basic skills necessary to successfully perform scholarly activity.

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3. To build skills needed to coach residents to successfully perform scholarship related to continuity clinic
4. To have a toolbox of resources and publicly available curricula to facilitate resident scholarly activity

Outline

- Define scholarship and opportunities for scholarship related to resident continuity clinic
- Resources available to develop skills needed for scholarly activity and a toolbox to support scholarship success
- Writing clinical vignettes and case reports
- Authorship concerns

What Is Scholarship?

Scholarly activity involves some skills that are similar to those needed for the care of internal medicine patients, such as having a methodical approach, attention to detail, an understanding of causal relationships, and curiosity for all possible explanations to a problem at hand. Scholarship further requires taking a holistic, global view of a problem and creating and testing hypotheses based on experience and knowledge of the existing literature [4]. Scholarly activity in medicine may occur in many forms, and peer-reviewed, published work spans case reports, abstracts, curriculum evaluation, quality improvement, and original research, among other formats.

Scholarship Opportunities Related to Continuity Clinic

Experiences in a resident clinic easily lend themselves to several different types of scholarship activities. The most straightforward are clinical vignettes or case reports, literature reviews, and quality improvement (QI) projects. In addition, the ACGME requirement to audit residents' clinical performance can be used as the basis for scholarly activity. Curricula developed for the ambulatory setting can also be studied for effectiveness or submitted to peer-reviewed publications, such as the Association of American Medical Colleges' (AAMC) MedEdPORTAL [5]. Finally, hypothesis-driven research in resident clinic may include chart reviews or prospective studies. Scholarly work may be submitted to scientific journals or to national, regional, or state meetings of professional societies. In addition, many academic medical centers hold resident research days as opportunities for residents to present their work.

Resources to Develop the Skills Needed for Successful Scholarly Activity

Most residents have little formal education in medical writing and publication. Less than 15% of medical schools provide training in writing skills [6, 7]. Medical writing curricula have been developed for residents, and at least one is available on AAMC's MedEdPORTAL [8]. The Alliance for Academic Internal Medicine (AAIM) has a "Scholarship Pearls" section on their password-protected website, which includes short presentations on survey design, poster presentations, submitting workshop proposals, and the peer review process [9]. The American College of Physicians (ACP) and Society of General Internal Medicine (SGIM) websites have guidelines for writing clinical vignettes that are quite explicit and read like instructions for authors [10, 11]. Tips for turning clinical vignettes into publishable case reports are also available through SGIM [12].

When designing posters for presentation, consider making a residency program poster template that can be given to residents to use upon acceptance of their work. To do so, consider working with your institution's marketing office so that your institution's official external logo, official color palate, and layout tips are properly included. Some institutions may have a marketing or printing office that can print posters for residents at discounted prices compared to retail copy or print companies. Scientific poster templates are also available to download in PowerPoint format for free through makesigns.com [13].

Scholarly Activity Toolbox

Resource	Description	Where available
AAIM Scholarship Pearls	Presentations about survey design, making posters, submitting a workshop proposal, the peer review process	www.im.org/p/cm/ld/fid=1291 <i>Login limited to members</i>
ACP Clinical Vignette Preparation	Instructions for writing clinical vignettes	www.acponline.org/membership/residents/competitions-awards/abstracts/preparing/vignette
SGIM Clinical Vignette Submission Information	Instructions for writing clinical vignettes	www.sgim.org/meetings/annual-meeting/call-for-abstracts-vignettes-ime-cpi/vignette-submission-info
Downer A, Swindells S. Developing case studies: A guide for teaching ATEC (AIDS Education and Training Center)	Six steps for writing an effective case study	http://www.go2itech.org/HTML/CM08/toolkit/tools/print/casebased/Developing_Clinical_Case_Studies.pdf

Resource	Description	Where available
APA Science Student Council. A Graduate Student's Guide to Determining Authorship Credit and Authorship Order. 2006	Tips for negotiating authorship	http://www.apa.org/science/leadership/students/authorship-paper.pdf
Farmakidis A, Bradford A, DeVilbiss MB, Campi J, Karlin ES, Gallo TF. Handbook for <i>Academic Medicine</i> Writing Workshop	Guidelines for writing research reports, manuscripts, abstracts, letters to the editor, and other categories of journal submissions	http://journals.lww.com/academicmedicine/Documents/Handbook%20for%20Academic%20Medicine%20Writing%20Workshop.pdf
Moore K. A medical writing curriculum for internal medicine residents: using adult learning theory to teach formal medical writing and publication of case reports	Three-part medical writing curriculum designed to be led by faculty for residents	http://dx.doi.org/10.15766/mep_2374-8265.10073 <i>Abstracts publicly available, access to materials requires creation of free account</i>

Writing Clinical Vignettes

Clinical vignettes can be thought of as bite-sized case reports that are submitted for oral or poster presentation at conferences. Composing clinical vignettes and case reports encourages learners to review the literature with an eye to its gaps, to compose learning objectives that are relevant to the field, and to meaningfully contribute to medical knowledge. These vignettes are patient cases seen by the resident or one of his/her coauthors with educational value for a larger medical audience of generalist or subspecialist physicians. Encouraging residents to proactively keep case logs or lists of potentially interesting patient cases can be useful. They can then refer back to these lists when an opportunity for submission arises. Typically, cases should be rare diseases, rare presentations of common diseases, or cases with notable learning points that are useful for a general medicine audience. JAMA Internal Medicine also publishes “Teachable Moments,” which are submissions written by students or residents that detail patient harms or near harms caused by excessive care.

Although patient consent is typically not required for clinical vignette abstract submission to conferences, as a rule, written consent is needed to submit a case for journal publication. We have found that patients are usually willing to provide consent and are glad to hear that their own medical problems can be used to teach other physicians. Some patients enjoy seeing the poster or manuscript, and we recommend offering to provide them a copy after publication.

Basic Tips for Writing Case Reports or Clinical Vignettes

The first steps are selecting a case, performing a literature review to determine if it is publication worthy, composing learning objectives, and obtaining consent from the patient. Second, select the journal or conference for submission. Remember that cases and learning objectives may appeal to a general medicine audience (e.g., conferences such as those for the Society of General Internal Medicine, American College of Physicians, Society of Hospital Medicine) even if they are not suitable for a subspecialist audience. Some medical societies accept posters for state or regional meetings in addition to national ones. Some may have regional competitions in multiple presentation categories, with winners given the opportunity to present at the society's national meeting.

Always be sure to carefully read (and reread!) the detailed instructions for authors for any journal or conference to which you wish you submit your work, as each will have different requirements. We recommend the ACP or SGIM websites or Dr. Moore's writing curriculum on MedEdPORTAL cited above for more detailed guidelines on case writing [8, 10, 11]. Some basic rules that should be emphasized are:

- Neither the patient's name nor initials should be used. Any photographs should strive to protect patient anonymity whenever possible.
- Two, or at maximum three, learning objectives should be clear to the author while writing the case. Some journals or conferences ask that these be explicitly written.
- Following a summary of the case (written in past tense), the bulk of space should be taken up by the discussion, including a review of the relevant literature. The case should be used only as a launching point for this discussion. The discussion should help the reader achieve the learning objectives.
- Refer to all medications by their generic names.
- Include standard units for measurements of laboratory results.
- When making a poster, find out if your institution already has a template that you may (or are required to) use.
- Remember that journal publications require authors to attest that their submission has not been published elsewhere nor is it concurrently under submission at any other journal. This rule generally does not apply to submissions for regional or national conferences; however, always read the instructions for authors to be sure.

Publishing Educational Materials

Involving trainees in curriculum design and guiding them to publish their work can provide important mentorship toward a career as a clinician educator and are typically recognized as part of a promotion portfolio demonstrating achievement for a faculty member in a clinician educator position. As stated above, curricula and educational materials may themselves be submitted for publication on AAMC's peer-reviewed MedEdPORTAL. Submissions typically include a facilitator guide; slides, handouts, or other educational materials; and some evidence of the curriculum's effectiveness.

Studying Curricular Innovations

Typically, when faculty design and implement new curricular innovations or teaching sessions, they perform surveys or other tests to demonstrate effectiveness at changing learners' attitudes, knowledge, or skills. In addition to using this data internally as formative feedback for teaching sessions, with proper IRB approval, this represents an opportunity for scholarship and publication. Large curricular undertakings or those with more general appeal may be studied and submitted for publication to a medical education journal, such as *Academic Medicine*, *The Journal of Graduate Medical Education*, *Teaching and Learning in Medicine*, *Medical Education*, or *The Clinical Teacher*, among others. Smaller curricular undertakings or those with a lower number of participants may be appropriate for submission as abstracts to national conferences that focus on medical education, such as AAMC, SGIM, or AAIM, or for submission to the AAIM Insights publication.

Quality Improvement

The ACGME requires that all residents participate in quality improvement (QI) projects. The longitudinal nature of continuity clinic lends itself nicely to implementing several Plan-Do-Study-Act rounds of QI activities. Quality improvement work has become increasingly recognized as scholarship by general medicine societies, and several regional and national conferences may accept QI abstracts for presentation in categories such as innovations in clinical practice, innovations in medical education, quality improvement, technology and innovation, or the like. In addition, quality improvement work may be submitted for presentation at conferences of the Institute for Healthcare Improvement or the American College of Medical Quality.

Authorship

Authorship should accurately reflect the contributions of the individuals involved in a project, including contributing meaningfully to both the work and the final written product, as well as approving it in its final version for submission [14]. The person primarily involved in conducting the study and writing the report is usually the first author; in this case, typically this is the trainee or student. The most senior author (or supervising author) is usually the final author. All authors are responsible for the accuracy of the work presented. To ensure that the negotiation of authorship is a positive experience, we recommend that trainees discuss the order and expectations of all authors up-front and transparently. Many journals have clearly defined the criteria for authorship available in their instructions for authors.

Conclusion

Supporting the scholarly activity of residents is not only required by the ACGME but can also be fulfilling for faculty members and trainees alike. Developing the skills needed to successfully perform scholarly activity may increase resident and faculty satisfaction and will serve them both throughout their academic careers. Most medical schools do not provide training in medical writing or other skills needed for success in scholarly activity. Many publicly available resources exist to help faculty and residents to develop the skills needed to perform scholarship. Activities related to continuity clinic may lend themselves to scholarship, especially clinical vignettes and case reports. We recommend that, rather than leave scholarship mentoring exclusively to subspecialists, continuity clinic preceptors embrace their role as potential mentors and consider supporting residents in scholarly pursuits related to clinic, especially publishing and presenting clinical vignettes and case reports.

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