

Publishing Medical Research: A Marketplace on the Commons

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Biomedical research has grown into a competitive global enterprise that influences patient care, population health, public policy, corporate profits, and the global economy. The keys to this treasury have historically been held by the editors of prominent medical journals. The journey to publication is often a long and tortuous path for authors and reviewers, let alone for the public and patients.

The marketplace of medical information is essential, not only to those who produce it—the researchers, authors, editors, reviewers, publishers, and funders—but also to the consumers, practitioners, patients, and policy makers, who need to trust that published research is sound science, reported accurately and clearly.

The pace of producing and publishing biomedical science is picking up and the stakes are rising. The popular press reads journals more regularly than most clinicians. Medical journalists and bloggers eagerly await each day's medical news. New findings are front-page headlines. As a result, physicians often hear about the newest research from patients before they are able to read it themselves. Online publishing has accelerated the process. Thus, the choice of what to publish can have economic and political effects that extend far beyond the laboratory and examination room.

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Everything today must be evidence based, from preventive services to public relations. That evidence comes largely from the peer-reviewed literature, so the peer-review process must be, like Caesar's wife, above suspicion.

The public's faith in the biomedical-industrial complex is threatened by the specter of misconduct, including conflict of interest. The pressure on investigators to have their research published in high-impact journals has led to abuses that threaten not only science but also the relationship between science and public funding.¹ As the stakes get higher, the temptation to influence publication decisions grows. Just as investigators and authors must adhere to strict conflict-of-interest guidelines,^{2,3} so should grant reviewers⁴ and journal editors.⁵

The traditional process of blinded peer review endures as the trusted mechanism for assuring quality and objectivity (despite a dearth of evidence to keep the faith). An extensive study of rejected publications shows that reports rejected from high-impact journals and later published in second-choice journals are more frequently cited than those that were accepted in the first journal.⁶ This finding suggests that the process of review, rejection, and revision helps improve the quality of the reports and the accessibility of the science. (For all of us who have experienced rejection, these findings might reassure us that the journal which eventually accepts our manuscript might be the better fit for our work.)

Cals and associates suggest streamlining the process for rejected manuscripts by including the initial reviews when resubmitting the revised manuscript to another journal.⁷ They reason that including previous reviews would speed the process and decrease the burden on peer reviewers of all journals. Of the medical editors that responded to their survey, a small number

currently accepted previous reviews and about one-half indicated an interest in the idea.

How, exactly, submission of previous reviews would shorten the often lengthy process of peer review is not clear. It seems unlikely that many editors would be willing to base their decisions on previous reviews from unnamed and unknown experts chosen by another journal. Perhaps editors would add reviewers from their journal to assess both the paper and the previous reviews, but so doing would add a layer of complexity and delay. Cals et al report that some editors were concerned the proposed process might create lazy reviewers, who would simply report, "agree with previous reviews." Reviewer fatigue is real and threatens the current process, even without adding an extra layer of reviews to read along with the manuscript. Before we adopt such a process, we need evidence that it would create real benefits by streamlining the review process and expediting publication.

Generalist journals, such as the *Annals of Family Medicine*, face special challenges. The range of topics submitted by authors, much like the range of problems brought by patients in general practice, is broad and deep. Thus, we need a diverse group of reviewers: topic experts, researchers, and clinicians. We also encourage participation of patients and community members. This multihued palette of reviewers is an essential part of our *Annals* team. We might welcome the input and expertise from previous reviews, but it would not likely be sufficient to meet our needs for varied and broader perspectives.

Editors select reviewers who they believe will help answer their own questions about each manuscript. Thus, the submitted manuscripts, the editor's questions, and the reviewers' comments, all are influenced by the focus and history of a journal. If a journal wants to develop a fresh voice, using trusted reviewers with different perspectives may be better than adding additional reviews from unknown sources.

On the long road of review and re-review, manuscripts evolve. Papers that are simply retreads of rejected work often roll right along to another rejection. Smart authors revise their rejected paper to take full advantage of the recommendations from the first set of reviewers and editors. Wise authors reconsider the framing and presentation of their work when submitting it to a new journal that serves a different readership with particular interests. The first set of reviews addresses an early version of the paper, probably long gone from the new version.

Authors invest a tremendous amount of work in considering and responding to reviewer comments when re-crafting their revised manuscript. When they submit the new version to a new journal, their work

deserves a fresh look by reviewers chosen to represent the special needs of its readership.

The marketplace of biomedical publication is open every day of the week on the commons of the global village. Each journal should offer some distinct added value to its customers—the authors and readers. Our *Annals of Family Medicine* editorial team works to create this value with the help of reviewers who contribute expertise in varied topics and methods, the critical eye of the scientist, and the practical experience of the clinician.

This quaint and curious marketplace is sustained by a gracious sense of professional obligation to the community of scholars. Much of the work contributed by reviewers and editors goes on behind the scenes, unrecognized and unpaid. What has changed is that this commons now serves larger and broader audiences, a global village, so both the values and the costs can be much greater. Perhaps we can no longer rely upon the unpaid work of reviewers. Certainly, the growing number of journals that charge authors publication fees should consider paying reviewers for their valuable expertise and essential work. Journals should experiment with other ways to reward reviewers. Still the greatest reward reviewers receive will always be that of seeing research to which they made an essential but anonymous contribution be published to help advance understanding, improve care, and advance health.

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