Keeping Peer-reviewed Publication Relevant in the Internet Age

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As this July 2012 issue reaches your desk, we have reached a new milestone at the *Journal of Refractive Surgery* (JRS). Through multiple initiatives launched over the past year, including stricter adherence to appropriate manuscript length and expanded utilization of online-only material,1 our manuscript backlog has virtually disappeared, meaning that once accepted, an article will most likely be printed in the next published issue. As evidenced in this issue, all of the articles you are about to read reached final acceptance in May 2012. In comparison, many of the highly respected ophthalmic journals currently have publication delays ranging from months to years from the point of final acceptance. We have our staff, our associate editors, reviewers, and our authors to thank for embracing and adhering to these changes.

However, the other timeframe you may notice for each article is more daunting: the time from initial submission to acceptance. This is the much longer, highly variable, review and revision period resulting in persistent delays from overall submission to publication for most articles. This timeframe is a point of contention for most (if not all) authors, who submit their work and then anxiously (read “impatiently”) wait for a decision to be made. Our readers also anxiously await the latest developments in our field so they may evaluate and potentially implement them into their practice and research.

For many, the time required for peer review seems excessive and is magnified when compared to the nearly instantaneous dissemination of information through other routes, most notably the Internet. Online opportunities for virtual “publication” have significantly expanded recently, including open access online journals, trade journals with expanded online repositories, and specific ophthalmic society-run Internet portals, and even some popular non-medical sites such as “YouTube.” This online information propagation provides access to new information in near “real-time.”

Given these online options, it seems reasonable to reexamine the peer-review process and evaluate the continued relevance of our peer-reviewed journals.

**THE PITFALLS AND POWER OF PEER REVIEW**

From whence do the delays in the peer-review process arise, and what can we do to minimize them? George O. Waring III, my predecessor at JRS, has always been a fierce advocate for the peer-review process and has examined and eloquently explained the process over the past 20 years.2-4 There are many potential sources of delay, as each critical step in the process requires precious time, including manuscript intake and processing, review, decision, probable revisions, re-review, and final decisions. Manuscript review takes the bulk of this time, and is also the most variable element in the process. Reviewers are perhaps the hardest working volunteer group in all of ophthalmology. Their work is by definition anonymous, done after hours when their regular work tasks are completed, and is much harder than anyone who has not performed a diligent, thoughtful manuscript review can imagine. Critical review is the backbone of the process; thus, adequate time must be allotted and accepted, as there is no substitute.

Sometimes everything moves smoothly, and articles are published within 3 months of submission. Other times the process can unfortunately take over 1 year. We have implemented numerous initiatives at JRS to eliminate the prolonged path to publication, and I predict a sharp decline in the overall time it takes for manuscripts submitted to JRS to reach the point of final decision in the coming months. However, even the most optimized process will continue to take a few months to complete. If this delay is inevitable, will peer-reviewed literature continue to thrive in this “instantaneous information” generation?

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Dr Randleman has no proprietary interest in the materials presented herein.

doi:10.3928/1081597X-20120620-01
INSTANTANEOUS INFORMATION DISSEMINATION: TOO NEW TO BE TRUE?

For those readers who regularly attend the major ophthalmic congresses around the globe, the first question one might ask upon leaving the meeting is “when will that new, exciting information I just heard finally be published?” When considering incorporating this information into one’s practice, some colleagues may think, “Why wait?” for the peer-reviewed articles to trickle out, when the message may already be available online.

The scientific content presented at our meetings deserves further attention. The best of these presentations certainly constitute much of the future peer-reviewed journal content; however, based on a quick evaluation comparing the number of presentations given to the number of papers published, it is clear that most of these presentations never get published.

Why? Many projects, presented in preliminary form, never reach the final stage of development necessary to make them acceptable for peer-reviewed publication. Instead, they stall out somewhere along the way, possibly from waning researcher interest, concern about the rigors of the peer-review process, or subtle flaws in either study design or data interpretation that pass by quickly in presentations but render projects ultimately unsuitable for publication. Anyone who has attended free paper sessions can attest to the wide variation in quality of the studies presented, a natural consequence of the limited oversight that anything short of in-depth peer review can provide. This is appropriate, as meetings should be the site of information exchange, the breeding ground for new ideas and collaborations, and the stimulus for future work. However, these initial concepts must be appropriately matured and vetted before becoming an enduring part of our collective knowledge.

For all scientific publications, the step beyond maximal efficiency in review is unfortunately a sacrifice in quality of that review process. Any “review” process that promises turnaround in weeks or less must unfortunately make this sacrifice. Thus, while peer-reviewed print journals will never keep up with the immediacy of some online offerings, when research projects are not vetted through peer review, the rapid information dissemination may allow for less robust science to make it to the public domain and, once there, inevitably self-perpetuate. Therefore, one must view the very latest available data with caution, as they may in fact be “too new to be true.”

INNOVATIONS AT JRS: THE NEW REVIEW ARTICLE

In addition to maximizing the efficiency of our review process, JRS is launching a variety of initiatives to provide added value to our journal. The first change this year was creating the Translational Science section,6 organizing these articles within a unified section and actively recruiting manuscripts for this important category. Our latest initiative makes its debut in this issue and represents a subtle shift in focus for a tried-and-true concept in the literature: the review paper. Our intent is to stimulate authors to modify the concept of the traditional review article to a more user-friendly information resource. These review articles should provide a unique amalgamation of our base knowledge on a topic, distilled to a concise and coherent summary, with the very latest available information, all presented in an easy to access format with comparative data tables and figures and robust reference sections to enhance further study.

Reinstein and colleagues have provided the first such “new review” in this issue,6 compiling a comprehensive review on anterior segment biometry devices, focusing on comparison of available resolution and repeatability data. Their work is especially compelling in revealing what data are not currently available to clinicians for these vital technologies. We anticipate numerous “new reviews” to follow in the coming months and look to our authors to submit their excellent work, maximizing accessible data while minimizing unnecessary girth.

THE VITALITY OF PEER-REVIEWED LITERATURE

At this time when information is more readily available than ever before, the peer-review process serves an even more important function than it has in the past. Certainly the peer-reviewed process does some things less efficiently than other, more immediate resources; however, it also does the most important things much more thoroughly. It remains the best source for the highest quality, vetted information we have available in our profession.

It is incumbent upon all who are involved with the process to maximize efficiency but maintain the level of oversight necessary to continually improve the quality of our collective knowledge base.

REFERENCES