

12: How to peer review a manuscript

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Peer review is an activity central to increasing the quality of communication in the health sciences, but almost no formal or standardised training for peer reviewers exists. In this chapter we provide a series of practical tips on how to peer review a manuscript and write the report based on the evidence from published research that is summarised elsewhere in this book, and on our combined experience of reviewing for approximately 30 journals. Overall, we believe that the best way to increase the quality of peer reviewing would be to conduct such reviews based on up to date evidence – an approach we call *evidence-based peer review*.

In theory, the peer review process exists to provide feedback to authors and editors of journals, and to ensure that readers find in journals information that will help them make better decisions. In practice, however, peer review is a poorly understood process that is becoming the focus of intense scrutiny and controversy. The controversy around peer review has intensified recently with the speed with which the internet is developing and the challenges that this new powerful medium is creating for the traditional paper-based peer review system.^{1,2} The peer reviewer, the person who assesses the merits of a manuscript submitted for publication in a journal, is at the heart of the controversy.

In this chapter, we will focus on how to peer review a submitted manuscript. The chapter is divided into two sections. In the first section, we will describe some generic practical tips that a novice peer reviewer should consider while evaluating an article for publication in a journal. The second section will highlight some basic aspects of the “code of conduct” that peer reviewers should follow when submitting a review to journal editors and authors. Our target audience is particularly those peer reviewers who have limited experience in reviewing manuscripts for publication in biomedical journals, or individuals who are thinking of becoming peer reviewers. Many of the points discussed could also be relevant to others involved in the peer review process (authors and editors).

How to peer review a manuscript: practical tips

As shown elsewhere in this book, there is little evidence to guide peer reviewers on how to peer review an article. Therefore, most of the tips described below are the result of our combined experience as peer reviewers for some 30 journals. We do not pretend in this to be comprehensive, but aim to share our experience, hoping that the strategies that work for us will also benefit others. Our main tips are the following.

Do not rush to accept an invitation to peer review a manuscript

Typically, if a journal considers you as a prospective peer reviewer, someone from the editorial office will contact you by telephone, fax, or email. The person will ask whether you would be prepared to review a manuscript for them and whether it could be completed within a specified period, usually three weeks to a month. You ask the editorial office of the journal to send additional information, ideally including the abstract of the manuscript, and to allow you a couple of days to make a decision. In other cases, you may simply receive the whole manuscript with a cover letter from the journal editor or an editorial assistant, asking the same question.

In most cases, the journal editors want you to make a decision quickly. For a novice reviewer, this is likely to be a very tempting opportunity that may appear impossible to reject. We recommend that at this point you judge whether you have the time to deliver the review. Similarly, you should ask yourself whether you are familiar enough with the content area or the methods described in the manuscript to produce a good review. If there is some hesitation at this point, we recommend that your answer be no, regardless of how difficult it may be to reject the opportunity. Another important issue is potential conflicts of interest. If there is any doubt about this, we recommend that you contact the journal editor to discuss the specific details and obtain advice.

Protect enough time to ensure that the deadline is met

If you accept to review the manuscript, we recommend that you protect enough time to ensure that the deadline is met. Peer reviewers' work takes time. Yankauer³ surveyed 276 reviewers of the *American Journal of Public Health* by questionnaire, obtaining replies with usable information from 85% ($n = 234$). Reviewers reviewed for 3.6 journals (median) and spent 2.4 hours (weighted median) completing a review, on average. Donated time amounted to a total of 3360 hours for all respondents. We expect that a novice peer reviewer

would take, on average, 8–12 hours to review a manuscript and produce a report for the journal.

Remember that your only source of information will be the report you receive from the journal

The only way that you, and any peer reviewer, can gauge any aspect of a biomedical study is by examining its written report, that is to say, the submitted manuscript. You will have no opportunity to solicit additional information from the authors. This has some intrinsic problems. It is possible that a study with many biases can be well reported. Conversely, it is also possible that a well designed and executed study is poorly reported. The only evidence that exists on this comes from examining reports of randomised controlled trials of breast cancer; it suggests that only minimal differences can be found between the events that occurred during the trial and what appears in the report.⁴

Follow a systematic process to review the manuscript

There are no validated instruments, or at least widely accepted ones, that could help you do a comprehensive review of a manuscript. Most journals include forms or instructions with the manuscript to guide the reviewer during the review process, but these vary widely from journal to journal. In our experience, most of these forms include, to a greater or lesser extent, issues that refer to the importance of the research question, the originality of the work, its strengths and weaknesses (content, methodological, ethical), the presentation/clarity of the paper, the interpretation of results, future directions, and suitability for publication. Some of these issues are easier to address than others. Judging the importance of the research question as well as the presentation/quality of the paper, for instance, is usually very subjective.

Although you could follow a subjective approach to assess the originality of the work, its strengths and weaknesses, and the interpretation of the results, you should strive to make the process as objective as possible. There are several tools that could help you achieve this goal. For instance, you could improve your assessment of the originality of a piece of work by searching for systematic reviews on the same topic. If the manuscript refers to healthcare interventions, the Cochrane Library is an ideal resource.⁵ To assess the general quality of a report, you could use a 34-item instrument that was developed specifically to assess “medical research reports”.⁶ The items in this instrument are grouped following the typical format of a report and include 5-point scales to score them. You could also use tools that have been developed to assess specific types of manuscripts. For instance, if the manuscript describes a randomised controlled trial, you may find

the CONSORT statement⁷ very useful (see Chapter 13). Similarly, if the manuscript describes a systematic review, you could use a validated index to judge its methodological rigour.⁸ Similar tools are likely to emerge to assess other types of studies. In sum, you should make every effort to follow a systematic process to reach your conclusions, trying to support them with the best available evidence. This conscientious, explicit, and systematic approach, using evidence to guide the peer review process, could be called *evidence-based peer review*, as it is analogous to evidence-based decision making.⁹

Communicating your comments to editors and authors: writing your report

Once you have completed your review, the next task should be to write a report that summarises your comments about the manuscript. The report should be aimed at helping editors to judge what to do with the manuscript and helping authors to improve their work. The following is a series of practical steps that may help you achieve this goal.

Follow the instructions of the journal

Most journals will include forms with some questions about the adequacy of the manuscript and its suitability for publication. You should try to answer them clearly in your report, even though you may disagree with their relevance or importance. If you do, you should share your concerns with the editor.

Most journals include one page for you to write general and specific comments for the editors and one or more pages to describe, separately, your comments to the authors. Separating your comments into general and specific is usually very helpful. Setting out the comments following the sections of the manuscript, labelling them by page, paragraph, and line, usually helps editors and authors locate the target for your comments easily. Make sure that you use clear, easy to understand language, and if necessary, examples to clarify points. We strongly encourage you to refrain from submitting handwritten notes as part of your review. These comments make reviews difficult to read and often result in important comments never reaching and/or being understood by authors.

Summarise the manuscript in a short paragraph before you detail your comments

As we described above, there is evidence¹⁰ that authors of manuscripts accepted for publication pending revisions disagree with

reviewer comments about a quarter of the time. Perhaps this is due, in part, to the fact that reviewers have not understood the manuscript they are reviewing. By providing a short summary of the work, you will not only help the editor remember the essence of the work you reviewed, but also provide the elements for editors and authors to judge whether you understood it or not.

Always provide constructive criticism

We encourage you to be constructive in any feedback you provide to authors. Remember that the majority of authors spend considerable time drafting a manuscript and then revising it many times before it is submitted for publication. There is little to be gained by providing destructive criticism. If you are reviewing a manuscript for a journal with an international authorship, you should be sensitive to those authors whose first language is not the language in which the report was written. You should reserve comments about language, grammar, and spelling to be made in your comments to the editor, not directly to the authors.

Do not use your review as an opportunity for revenge

An effective peer review is one in which the reviewer's comments are focused solely on the manuscript and not on the individuals who wrote it. The majority of reviewers associated with biomedical journals do not receive masked copies of the manuscripts they review. This means that you will know whose work you are reviewing, but the authors will not know that you reviewed their work, unless you tell them by signing your review. You should not take advantage of this situation to make disparaging comments about the authors of the manuscript. Such comments are inappropriate and discouraged by everybody involved in peer review. Editors keep a vigilant eye out for these comments to ensure they are not communicated to the authors.

Describe any conflict of interest

Even if you have communicated your concerns to the editor about potential conflict of interest and received "clearance", you should mention this in your comments to the editor.

Acknowledge any help received during the reviewing process

You should report whether you completed the review alone or asked someone else for help (for example, a graduate student or a colleague). The names of anyone who has contributed to the review should be listed.

Do not go out of your depth

In most circumstances you will be asked to review a manuscript because the corresponding editor perceives you as having expert knowledge in a particular area, such as content, methodology, or statistics. Be sure that you understand the type of advice the editor needs from you and do not feel that you need to cover all possible aspects of the work. Going beyond the boundaries of your knowledge or expertise could do more harm than good, not only to the recipients of your report, but also to your own reputation and credibility.

Label the source of each of your comments explicitly

You should be very explicit in your report, labelling your comments either as reflecting your own opinion or as being supported by data.

Decide whether to sign the review or not

We are closer to being able to make an evidenced-based decision about signing your peer review. As we mentioned, earlier in the chapter, there appears to be almost no difference in the quality of peer reviews, and the time taken to complete them, whether they are open or anonymous. Importantly, recommendations about the merits of publication are similar, regardless of whether peer reviewers are identified to authors or not. Van Rooyen and colleagues found that open reviewers, compared to those reviewers whose identity was unknown to the authors, opted for a similar rate of rejection (40% v 48%).¹¹ Similar results have been reported elsewhere.¹² In addition fewer than 10% of reviewers refused to sign their reports, suggesting that more openness is now feasible.

In a new move the *British Medical Journal* has decided to implement open peer review.¹³ Among the reasons given for this move were the need to promote academic credit for completing peer reviews and the accountability of the peer reviewer. We are encouraged by this move and hope that other journals will follow this lead.

Send your comments within the deadline given by the journal

There is nothing more discouraging for authors than to wait, often anxiously, for months to receive written feedback from editors and peer reviewers. Recent evidence from an examination of over 1000 peer reviews¹⁴ indicates that the average time to complete a peer review was 24 days (95% CI: 23.5 to 25.1). As we said above, if you know that you cannot complete a review within the time period requested, you should decline the invitation to review it.

Alternatively, if you have already agreed to complete the review but circumstances suggest that you will require additional time, you should communicate this information to the journal immediately.

Journals could facilitate more efficient peer review if they called reviewers to ascertain their interest and time availability to complete a review rather than simply mailing the manuscript, automatically expecting an affirmative answer. This suggestion is likely to be easier for the larger journals that have full time editorial staff and appropriate financial resources.

Keep the content of the manuscript confidential

You should maintain the same ethical standards you would like others to abide by when reviewing your own work. You should never disclose or use, in any way, directly or otherwise, the contents of the manuscript you are reviewing. On the other hand, you should be aware of the potential for “subliminal integration”, that is, subconsciously using information contained in a manuscript you have reviewed. Although this is not the same as plagiarism, which is inappropriate under any circumstance, it often can be very close. Reviewing manuscripts is likely to stimulate thoughts in the minds of many reviewers. To what extent these ideas stimulate your own is an uncertain issue. Many journals, in their covering letter, remind peer reviewers that they have received a privileged communication. You should not try to contact the authors of the manuscript for any reason while the manuscript is still under review. If you have doubts, contact the editorial office of the journal, where you will usually get helpful advice.

Ask for feedback from the journal

Some journals will send you the comments made by other peer reviewers about the same manuscript you have reviewed. By comparing your comments with those by others you could, indirectly, assess your own performance. However, this is not the same as receiving direct feedback about the quality of your own review. We would encourage you to ask the journal editor for feedback about your work. If you receive it, you should accept the comments regardless of their nature, and act upon them. That will only make you better next time.

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