IS THE PEER REVIEW PROCESS OBSOLETE?

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Formal scholarly peer review was first introduced by the journals Science and JAMA in the 1940s. Since then it slowly became implemented on other journals, to the point where it is now considered to be standard practice. The motivation for adhering to these practices lies in the need for editors and journals to operate a high level of quality assurance and to make fair editorial decisions that are not solely dependent on the opinion of one person. However, the peer review system is not without controversy, and there are some who argue that it may be 'broken' or even obsolete [1]. This presentation will examine the main differences between current models of peer review, and the ways in which some journals are attempting to overcome the limitations of peer review processes.

Of immediate concern is the increasing volume of new journals, and also of submissions to journals. The burden of scholarly peer review that is placed upon the research community is not insignificant, and therefore it stands to reason that the review systems are straining to meet the needs of journals and authors [2]. Conventional peer review is single-blinded (i.e. reviewers know the authors' names, but authors do not know the reviewers' names). However, given the many limitations this presents (such as lack of transparency in editorial decisions and potential for biased reviews), many journals have experimented with alternative models of peer review. Some have taken the double-blinded approach (where neither reviewers nor authors know each other's identities) [3], and others have implemented open peer review [4]. In the latter model, there are two levels: the first is where both the author and reviewer know the identity of each other (introduced by BMJ in 1999), and the second level is where the readers also become privy to this information. This is done via the freely accessible pre-publication history, which is available alongside the published article. This record includes all versions of the manuscript, the reviewers' signed reports and the authors' responses to reviewers' and editors' comments. Journals that implement this model include the *BMC*-series medical journals (around 2000)*, Trials,* and *BMJ Open* (in 2011). However, peer review remains a provocative topic in life sciences and medical publishing – mainly because there is still no evidence to show what the most effective, thorough and fair method is.

Further innovations in peer review are gaining ground again – this time outside the immediate publishers' sphere with independent services such as Peerage of Science, Axios Review and Rubriq offering authors a venue to have their research reviewed *before* submitting to a journal. Also, the open science journal F1000Research has pioneered the method of publishing the submitted version of the manuscript, which then undergoes post-publication peer review in 'full view' of everyone. Interesting times are ahead of us, as we are set to witness how these ways of 'de-coupling' the peer review process with specific journals will affect scientific and medical publishing.

However, regardless of the mode of publishing, there is another element that requires improvement – the training of peer reviewers. Reviewer reports ultimately have the potential to influence what gets published, yet many reviewers, particularly those who are less experienced, often point out they are not entirely clear what it is required from them. Also they usually receive no feedback on reviews they have conducted [5]. There have been various initiatives and proposals regarding how to address this, and one of the more recent proposals includes journal editors offering training and recognition for reviewers, and providing readers with a way of identifying the individual published articles that have been assessed by 'trained' reviewers [6].

Even if we were to achieve all this, would the peer review system work? Some argue that if current systems were as reliable and thorough as intended, then levels of retractions would not be as high as they currently are. Additionally, in recent times, journals have been experiencing a more serious concern – that of 'fake-reviewers'. In these instances, false contact details for potential reviewers have been supplied during the submission process, and some journal editors have inadvertently invited authors to review their own work. This in itself has contributed to the growing numbers of retractions across publishers [7-8].

Transparency of the peer review and therefore editorial decision-making process is key to maintaining quality and trust. The main purpose of a published article, in a medical journal in particular, should be to guide clinical decisions and further research. Therefore, readers should be able to assess for themselves if the published piece has been appropriately appraised. Peer review is not obsolete but it is, quite rightly, changing.

References:

[1] Maria Kowalczuk: ***Are journals ready to abolish peer review?***
http://blogs.biomedcentral.com/bmcblog/2014/04/11/are-journals-ready-to-abolish-peer-review-2/
[2] Martijn Arns; ***Open access is tiring out peer reviewers.*** *Nature 467;Vol 515; 27 November 2014*
[3] ***Working double blind*** *Nature* ***451****, 605-606 (7 February 2008)*
[4] Eva Amsen: ***What is open peer review?*** *http://blog.f1000research.com/2014/05/21/what-is-open-peer-review/*
[5] Fiona Russell: ***Should there be training for peer reviewers?***
http://blogs.biomedcentral.com/bmcblog/2014/05/16/should-there-be-training-for-peer-reviewers/
[6] Jigisha Patel: ***Why training and specialization is needed for peer review: a case study of peer review for randomized controlled trials.*** *BMC Med 2014,* ***12:****128*
[7] Steen RG, Casadevall A, Fang FC: ***Why Has the Number of Scientific Retractions Increased?*** *PLoS ONE 2013; 8(7)*
[8] Cat Ferguson, Adam Marcus and Ivan Oransky: ***The peer-review scam.*** *Nature, 482; Vol 515; 27 November 2014*