Well-presented scholarly research work will reduce chances of journal rebuttal

BY ROD MCNEIL

Submitting to an academic journal? Are you aware of the requirements and constraints of relevant copyright laws? **Rod McNeil** provides a guide for aspiring authors.

Getting published in peer-reviewed academic and medical journals is not easy. But careful attention to detail, awareness of widely-accepted recommendations and reporting standards, as well as an understanding of copyright laws should limit the risk of manuscript rejection. While the quality of the research denotes scientific merit, poor reporting of that research or basic flaws in formatting or submission will hamper or significantly delay publication success.

The author discusses publication issues for aspiring authors, highlighting several good sources of useful, practical advice and guidance that may assist with reporting quality, research transparency and legal compliance.

ICMJE recommendations

The International Committee of Medical Journal Editors (ICMJE) is a small working group of general medical journal editors whose participants meet annually and fund their own work on the *Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals [1]*. Currently, the editors of 14 journals are official members of the ICMJE, including *Annals of Internal Medicine, British Medical Journal, JAMA, New England Journal of Medicine* and *The Lancet*.

As many medical journals state that they follow the ICMJE Recommendations, it is important to ensure that all categories of submitted articles conform to these guidelines. ICMJE Recommendations apply equally to both print and electronic publishing. Below is an outline of several essential considerations covering responsibilities of authors together with tips on manuscript preparation and submission [1].

Criteria for authorship

Authorship is based on fulfilling three criteria:

- substantial contributions to the conception or design of the work; or the acquisition, analysis or interpretation of data for the work
- drafting the work or revising it; critically; and
- reading and final approval of the version to be published.

Moreover, all persons designated as authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The order of authorship should be decided jointly by all co-authors. The corresponding author is responsible for responding to editorial queries throughout the submission and peer-review process. When submitting a manuscript authored by a group, the corresponding author should specify the group name if one exists, and clearly identify the group members who can take credit and responsibility for the work as authors.

If an individual has made a contribution to the writing or editing of a manuscript but does not qualify as an author according the above criteria (i.e., non-author contributors), their contribution may / should be specified together with any funding that was provided for their assistance in the acknowledgement section of the paper.

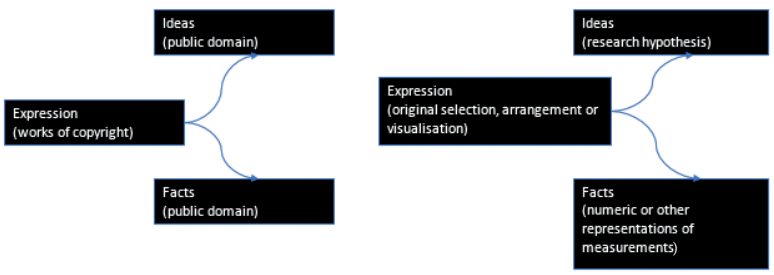
Manuscript preparation and submission

Original research articles typically follow the 'IMRAD' structure, divided into Introduction, Methods, Results And Discussion sections, with subheadings within these sections used to further organise and present content in a logical sequenced manner. Less structured formats may be appropriate for other research article types such as narrative reviews, case reports, cohort studies and meta-analyses.

Results and data on all primary and secondary outcomes identified in the Methods section should be presented in logical sequence. Where outcome data are included in tables and figures, the commentary should only be used to emphasise the most important or relevant findings and observations.

At the start of the discussion, briefly summarise the main study findings, and explore possible explanations or mechanisms for these findings. New or important aspects of the study should be emphasised and the findings should be put in the context of the relevant evidence.

Figure 1. Copyright law protects only the form of expression of ideas.



Source: Carroll MW. Mobile platforms, linked content and copyright: issues and answers. COPE North American Seminar 2014.

Study limitations should be considered, as well as the implication of the study findings for future research and current clinical practice. Conclusions should relate directly to the goals of the study but any claims restricted to those adequately supported by the data. In the references section, cite original research sources whenever possible and avoid over referencing.

The editorial policies of a specific target journal, detailed in the 'Information for Authors' or 'Instructions to Authors', need to be carefully followed. These will describe any particular formatting nuances and editorial style guide, including abstract length, referencing format, use of abbreviations as well as other presentation requirements, e.g., use of American English. Authors with questions about the processes or policies of a specific journal to which they are considering submitting their work should consult that journal directly. Pre-submission enquiries to sound out potential interest in the proposed study publication are always worthwhile.

In a cautionary note about the growing number of predatory or pseudo-journals (entities advertising themselves as 'scholarly medical journals' yet do not function as such), ICMJE Recommendations state that authors have a responsibility to evaluate the integrity, history, practices and reputation of the journals to which they submit manuscripts.

When submitting a manuscript, authors are responsible for disclosing all financial and personal relationships that might bias or be seen to bias their work. Duplicate submission (simultaneous submission to more than one journal) should be avoided. Details of any prior part publication, such as an abstract or paper presentation at a scientific meeting, should be disclosed in the letter accompanying the complete manuscript submission and paper acknowledgement. Press reports of scheduled meetings are not usually considered breaches of the prior publication rule.

Peer review and requests for revision

Editorial decisions should be based on the relevance of the paper to the journal and on the originality, quality and contribution to evidence of the manuscript content. Peer review allows for unbiased, independent, critical assessment. Constructive reviewer comments can often help authors and editors improve the quality of reporting as well as assist the editors' decision on journal

Table 1: Writing and publishing high-impact health research: examples of reporting guidelines for different study designs.

Study design	Reporting guideline	Reference and website link
Randomised trials	CONSORT	Schulz KF, Altman DG, Moher D, for the CONSORT Group. CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *BMJ* 2010;**340**:c332. http://www.consort-statement.org/downloads
Observational studies	STROBE	von Elm E, Altman DG, Egger M, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *BMJ* 2007;**335(7624)**: 806-8. http://www.strobe-statement.org/index.php?id=strobe-publications
Systematic reviews	PRISMA	Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *BMJ* 2009; **339**:b2535. http://www.prisma-statement.org/PRISMAStatement/Default.aspx
Case reports	CARE	Gagnier JJ, Kienle G, Altman DG, et al; the CARE Group. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. *BMJ Case Rep* 2013; doi: 10.1136/bcr-2013-201554. http://data.care-statement.org/wp-content/uploads/2016/08/CAREchecklist-English-2016.pdf
Qualitative research	SRQR / COREQ	SRQR O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014;**89(9)**:1245-51. https://www.ncbi.nlm.nih.gov/pubmed/24979285 COREQ Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;**19(6)**:349-57. http://intqhc.oxfordjournals.org/content/19/6/349.long
Economic evaluations	CHEERS	Husereau D, Drummond M, Petrou S, et al. Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement. *BMJ* 2013;**346**:f1049. http://www.ispor.org/workpaper/CHEERS/revised-CHEERS-Checklist-Oct13.pdf
Clinical practice guidelines	AGREE / RIGHT	AGREE Brouwers MC, Kerkvliet K, Spithoff K, AGREE Next Steps Consortium. The AGREE Reporting Checklist: a tool to improve reporting of clinical practice guidelines. *BMJ* 2016;**352**:i1152. http://www.bmj.com/content/352/bmj.i1152?etoc= RIGHT Chen Y, Yang K, Marušić A, et al; for the RIGHT (Reporting Items for Practice Guidelines in Healthcare) Working Group. A Reporting Tool for Practice Guidelines in Health Care: The RIGHT Statement. *Ann Intern Med* 2017;**166(2)**:128-32. http://annals.org/aim/article/2587367/reporting-tool-practice-guidelines-health-care-right-statement
Quality improvement studies	SQUIRE	Ogrinc G, Davies L, Goodman D, et al. SQUIRE 2.0 (Standards for QUality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process. *BMJ Qual Saf* 2015. http://www.squire-statement.org/index.cfm?fuseaction=page.viewPage&pageID=471

Source: https://www.equator-network.org

suitability.

When reading through the reviewers' comments, consider this an opportunity to improve the quality of the submission where justified. For example, a reviewer may ask the author to provide Snellen equivalents whenever visual acuity data are reported in a non-Snellen format [2]. Authors should respond completely and promptly to all comments sequentially and cite evidence from published studies to support a particular position if disagreeing with reviewers when replying.

Reporting guidelines: outlining the essential components

While not necessarily a direct measure of the quality of a research study, good reporting allows a reader to clearly assess the validity and applicability of a study's findings [3]. In preparing the manuscript, reporting guidelines or standards are available that provide useful checklists for ensuring that authors provide the minimum necessary information about their study. Available reporting guidelines can help authors ensure that their study provides sufficient detail for it to be evaluated by editors, reviewers and other researchers evaluating the medical literature.

The Enhancing the QUAlity of Transparency Of health Research (EQUATOR) Network brings together researchers, medical journal editors, peer reviewers, developers of reporting guidelines, research funding bodies and other collaborators with mutual interest in improving the quality of health research publications and of research itself. The EQUATOR website (https://www.equator-network.org) details reporting guidelines and good research reporting practices for all main study types, and contains information about reporting guidelines currently under development (Table 1).

The STROBE statement describes guidelines to improve reports of observational studies (Table 2) [4]. It was developed to assist authors when writing up analytical observational studies and to support editors and readers alike when critically appraising published studies. While detailing essential information to include in the research manuscript, authors are encouraged to use narrative elements and to make their article an interesting read [4]. CheckUp (Checklist for the Reporting of Updated Guidelines) provides a tool to evaluate the completeness of reporting and what information ought to be reported when submitting an updated clinical guideline for publication [5].

Lee and colleagues assessed compliance of systematic reviews in ophthalmology published between January 2010 and December 2015 with the PRISMA statement [6]. They identified areas of non-compliance and argued that the reporting quality of systematic reviews and meta-analyses could be significantly improved, recommending the use of the PRISMA criteria as a guideline for manuscript preparation before journal submission.

Understanding copyright protection

Protection against unauthorised use of copyright works depends on the national laws of the country in which the work is protected. The World Intellectual Property Organization (WIPO, a global forum for intellectual property information and cooperation) identifies copyright legislation as part of the wider body of law known as intellectual property which refers broadly to the creations of the human mind [7].

Copyright relates to literary and artistic

Table 2: Extract from STROBE Statement for Cohort studies: checklist of items that should be included in results and discussion [a].

Results	
Participants*	(a) Report numbers of individuals at each stage of study – e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
	(b) Give reasons for non-participation at each stage
	(c) Consider use of a flow diagram
Descriptive data*	(a) Give characteristics of study participants (e.g., demographic, clinical, social) and information on exposures and potential confounders
	(b) Indicate number of participants with missing data for each variable of interest
	(c) Summarise follow-up time (e.g. average and total amount)
Outcome data*	Report numbers of outcome events or summary measures over time
Main results	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g. 95% confidence interval). Make clear which confounders were adjusted for and why they were included
	(b) Report category boundaries when continuous variables were categorised
	(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	Report other analyses done – e.g. analyses of subgroups and interactions, and sensitivity analyses
Discussion	
Key results	Summarise key results with reference to study objectives
Limitations	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	Discuss the generalisability (external validity) of the study results
Other information	
Funding	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based

*Give information separately for exposed and unexposed groups.

[a]von Elm E, Altman DG, Egger M, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *BMJ* 2007;**335(7624)**:806-8. Further information is available from: http://www.strobe-statement.org

works, which according to Article 2 of the Berne Convention includes every production in the literary, scientific and artistic domain, whatever the mode or form of its expression. Articles on scientific topics are protected because they are literary works and not because of their scientific subject matter [7]. Copyright law and the associated concept of related or neighbouring rights protects only the form of expression of ideas, not the ideas themselves (or procedures, methods of operation or mathematical concepts as such) (Figure 1). Thus, the ideas in the created work do not need to be original, but the form of expression must be an original creation by the author.

Copyright protection confers both economic (remuneration) and moral (enforcement and control) rights. Copyright protection gives the rights owner the power to control making of copies, distributing copies, public performances, public displays, communication to the public and adaptations of copyrighted work. Copyright is also transferable.

However, there are limitations and exceptions to copyright protection that provide a defence to copyright infringement. These differ between jurisdictions and European Union (EU) member states and local copyright law advice should always be sought, e.g., the relevant piece of UK legislation is the Copyright Designs and Patents Act 1988.

Fair use or fair dealing for example carries no obligation to compensate the copyright owner for the use of the work without permission. Examples of fair dealing exceptions include: news reporting, teaching purposes, and quoting from a protected work subject to crediting the source and that the extent of the quotation is compatible with fair practice. If a scientific published paper reports trial results demonstrating that aspirin use reduced the rate of glaucoma by 5% compared with placebo control, the underlying information and facts are free to use without restriction, with the use of cited quotations from the original paper and proper paraphrasing when acknowledging the contribution of others.

For data, copyright only attaches to 'works of authorship', i.e., the author's original expression of ideas or facts, such as original selection, arrangement or visualisation. However, facts and ideas are free to copy. Many datasets, databases, figures, charts and tables for instance likely have a copyrighted layer and a public domain (factual) layer, observes Michael W. Carroll, Professor of Law and Director, Program on Information Justice and Intellectual Property, American University Washington College of Law [9]. Data presented or organised according to a general standard likely have no copyright constraints, adds Prof Carroll. However, databases may be afforded *sui generis* protection under EU regulations.

The fact that a created work is free or widely available online does not mean that it is not protected by copyright. The terms of any applicable licence for freely available material or open access publications and applicable national law should always be checked, as this may include exclusions or restrictions, e.g., commercial use.

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No permission is required generally if the author creates figures or tables using factual data from copyrighted material, but the source must always be credited (prefaced with "Adapted from").

WIPO describes public domain as the scope of those works and objects of related rights that can be used and exploited by everyone without authorisation, and without the obligation to pay remuneration to the owners of copyright and related rights concerned – as a rule because of the expiry of their term of protection, or due to the absence of an international treaty ensuring protection for them in the given country [8].

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Subscription-based journals often offer a hybrid model whereby authors can select to have their accepted paper published open access for a fee. Another option is to submit the paper to a fully open access journal where all articles are freely available (often subject to payment of an article processing fee).

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Avoidable pitfalls

The literature highlights common yet avoidable flaws explaining editorial manuscript rejection in ophthalmology and vision science journals.

An overall rejection rate of 73.6% was reported for manuscripts submitted to *Clinical and Experimental Ophthalmology* over the 12-month period to 31 December 2008 [10]. The commonest reason for rejection was 'does not add to current literature', followed by 'poor methodology', 'problematic control groups', 'poor English and grammar / poorly organised', 'needs further work / clarification', and, perhaps surprisingly, 'simultaneous submission to another journal / plagiarised'.

Manuscript rejection can be avoided if the topic is well chosen and communication is maintained with the journal editorial [11]. To avoid rejection due to poor formatting or failure to fulfil the aims and scope of the journal, authors should carefully check and follow author guidelines, e.g. if preparing a case report, check that the target journal will accept such studies.

Common errors in manuscripts submitted to medical science journals include insufficient detailed methodology, unsystematic or illogical presentation of results as well as unsupported conclusions [12]. Authors should substantiate all claims, describe how the study contributes to current knowledge in the field, taking care not to overstate the importance of the research findings, and provide some insight into relevant future considerations.

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Acknowledgement

The author thanks UK legal firm Carter-Ruck for reviewing the draft section on copyright protection and for providing expert insights and comments. Carter-Ruck has a longstanding reputation for its expertise in the field of litigation and dispute resolution.