

Background paper to accompany HRB Authorship Position

Introduction

Authorship is defined as the intellectual participation in conceiving, executing or interpreting at least part of a research, scholarly or other academic output in the author's field of expertise, sufficient for the author to take public responsibility for that output.

Authorship matters because the entire research and publication process relies on trust¹. In many countries, including Ireland and the UK, research output is largely measured by authorship of peer-reviewed publications, so funding agencies and researchers should have an interest in ensuring that contributions are fairly reflected.

Health research, and clinical research in particular, is nearly always a collaborative effort. Yet not everyone who contributes to the research is necessarily a writer, so distinction starts to emerge between roles, and authorship starts to become dissociated with writing. When people have different roles, and not everyone is (or should be) involved in drafting the publication, then systems are needed to determine which roles deserve to be recognised by authorship.

Existing guidelines

A number of guidelines relating to authorship are available (See Table 1). Most have been produced by groups of journal editors. However, individual journals often do not give specific guidance and there are no universal standards for those that do not. A survey of 234 biomedical journals found that 41% gave no guidance about authorship, 29% based their instructions on the criteria of the International Committee of Medical Journal Editors (ICMJE), while 15% proposed other criteria and 15% stated only that all authors should approve the manuscript².

Table 1 Existing Authorship guidelines.

Document	Produced by	Aimed at	Available from
Uniform requirements for submission of manuscripts to biomedical journals	International Committee of Medical Journal Editors (ICMJE)	Researchers	www.icmje.org
Role of professional medical writers in developing peer-reviewed publications	European Medical Writers Association (EMWA)	Professional medical writers	www.emwa.org
What to do if you suspect ghost, guest or gift authorship	Committee On Publication Ethics (COPE)	Journal editors	www.publicationethics.org
How to handle authorship disputes	Committee On Publication Ethics (COPE)	Researchers	www.publicationethics.org
White paper on promoting integrity in scientific journal publications	Council of Science Editors (CSE)	Journal editors and researchers	www.councilscienceeditors.org

¹ Wager E. Recognition, reward and responsibility: Why the authorship of scientific papers matters. *Maturitas* 62(2009) 109-112.

² Wager E. Do medical journals provide clear and consistent guidelines on authorship? *Medscape Gen Med* 2007;9:16.

Most guidelines on the authorship of scientific papers give greater weight to creative and intellectual aspects of research than to routine or technical contributions. Almost inevitably the contributions of different individuals will vary in terms of their nature and size. The conventional list of authors tells readers nothing about the different types of roles (e.g. design, analysis or reporting), nor the relative size of each individual's contributions.

Author listing vs Contributorship

The authorship criteria proposed by the International Committee of Medical Journal Editors (ICMJE) are the most widely promoted by medical journals. Until 2001, the ICMJE guidelines stated that only people who had made significant contributions to the design of a study, or its analysis and interpretation qualified as authors³. However, the current version includes data acquisition as an activity that qualifies for authorship (but explicitly notes – unlike for the other activities – that data collection *alone* is not enough, the individual must also contribute to developing the manuscript)⁴. But the ICMJE guidelines are not universally accepted and give no guidance about how to determine the order in which authors are listed.

While most journals retain the traditional system of listing authors, some have replaced (or augmented) this with a list of each individuals' contributions to the research and/or the publication (e.g. design, analysis or reporting). Contributorship has several advantages over conventional author lists. It is more transparent and makes it easier to spot 'guests' (who did not do enough to merit being on the list) and 'ghost' roles (i.e. contributions that have not been acknowledged)⁵. Although the ICMJE encourages journals to develop a contributorship system, only around 10% of biomedical journals list contributors⁶.

Remaining issues

Despite the increased clarity that accompanies the practice of listing author contributions, many issues remain. Guidance is still needed on the order in which authors/contributors are listed. While it is generally assumed that individuals are listed in decreasing order of their contribution, this principle is virtually never explained, and importance is sometimes also attached to being the last or corresponding author.

Listing authors and their individual contributions does not prevent dishonesty. Authors who are prepared to flout conventions (for example by demanding to be guest authors although this is clearly outlawed by the ICMJE guidelines) are probably also prepared to lie when it comes to describing their contribution to a research study.

Another problem of both the traditional authorship and the contributorship systems is whether responsibility can be divided between co-authors/contributors. The ICMJE criteria state that "Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content"⁷. This suggests that authors need not be held accountable for the entire project. In a multicentre study, especially one spanning several jurisdictions, is it reasonable to blame all authors if misconduct is discovered at one centre or is committed by a single author? Some journals require that at least one contributor is named as the 'guarantor'. The ICMJE defines guarantors as people "who take responsibility for the integrity of the work as a whole, from inception to published article". Following disclosure of research fraud, co-authors have sometimes tried to

³ Huth E, Case K. The URM: twenty-five years old. *Sci Ed* 2004;27:17–21.

⁴ International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. www.icmje.org.

⁵ Wager E, Field EA, Grossman L. Good publication practice for pharmaceutical companies. *Curr Med Res Opin* 2003;19:149–54.

⁶ Wager E. Biomedical journals provide clear and consistent guidelines on authorship? *Medscape Gen Med* 2007;9:16.

⁷ International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. www.icmje.org.

distance themselves from the offence. In some cases, journal retractions have indicated that only some authors are to blame⁸. Yet in other cases, when serious misconduct has been discovered, all authors have been held culpable⁹.

Who should lead?

There is clearly a need for local knowledge of the specific research project, and who was involved in reporting it, to resolve disagreements about authorship of research publications. The ICMJE note that, "It is not the role of journal editors to make authorship/ contributorship decisions or to arbitrate conflicts related to authorship". COPE has produced guidance on what editors should do when faced with authorship disputes or requests to change the list of authors but they rely on the contributors' institutions to resolve the conflict¹⁰. It suggests that many disputes could be avoided if funding and research institutions had clear authorship policies, promoted these to all researchers and checked to ensure that the policies were followed. For multicentre projects, the listing and acknowledgement criteria should be agreed at the outset, in writing, by all researchers¹¹.

Journal editors are seen to have a role in developing transparency policy for the authorship of non-research publications such as editorials and non-systematic review articles. For example, the BMJ asks who had the idea for an article, whether the named authors received assistance in writing it, were paid to write it or have links with organisations that might benefit from its publication¹².

⁸ Anon. Retraction of Matsuyama et al., Discoidin domain receptor 1 contributes to eosinophil survival in an NF-kappa B-dependent manner in Churg–Strauss syndrome. *Blood* 2007;(January)109:22–30; *Blood* 2008;111:2537.

⁹ Dyer O. Consultant struck off for fraudulent claims. *BMJ* 1995;310:1554–5.

¹⁰ COPE flowcharts. www.publicationethics.org.

¹¹ Albert T, Wager, E. How to handle authorship disputes: a guide for new researchers. COPE Report 2003, Committee on Publication Ethics. www.publicationethics.org.

¹² BMJ. Transparency policy. <http://resources.bmj.com/bmj/authors/editorialpolicies/transparency-policy>.

APPENDICES

ICMJE: International Committee of Medical Journal Editors

Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Ethical Considerations in the Conduct and Reporting of Research: Authorship and Contributorship

An “author” is generally considered to be someone who has made substantive intellectual contributions to a published study, and biomedical authorship continues to have important academic, social, and financial implications¹. In the past, readers were rarely provided with information about contributions to studies from persons listed as authors and in Acknowledgments². Some journals now request and publish information about the contributions of each person named as having participated in a submitted study, at least for original research. Editors are strongly encouraged to develop and implement a contributorship policy, as well as a policy on identifying who is responsible for the integrity of the work as a whole.

While contributorship and guarantorship policies obviously remove much of the ambiguity surrounding contributions, they leave unresolved the question of the quantity and quality of contribution that qualify for authorship. The ICJME has recommended the following criteria for authorship; these criteria are still appropriate for journals that distinguish authors from other contributors.

Authorship credit should be based on 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3.

When a large, multicenter group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript³. These individuals should fully meet the criteria for authorship/contributorship defined above and editors will ask these individuals to complete journal-specific author and conflict-of-interest disclosure forms. When submitting a manuscript authored by a group, the corresponding author should clearly indicate the preferred citation and identify all individual authors as well as the group name. Journals generally list other members of the group in the Acknowledgments. The NLM indexes the group name and the names of individuals the group has identified as being directly responsible for the manuscript; it also lists the names of collaborators if they are listed in Acknowledgments.

Acquisition of funding, collection of data, or general supervision of the research group alone does not constitute authorship.

All persons designated as authors should qualify for authorship, and all those who qualify should be listed.

Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.

Some journals now also request that one or more authors, referred to as “guarantors,” be identified as the persons who take responsibility for the integrity of the work as a whole, from inception to published article, and publish that information.

¹ Davidoff F, for the CSE Task Force on Authorship. Who's the author? Problems with biomedical authorship, and some possible solutions. *Science Editor*. 2000 ;23:111-9.

² Yank V, Rennie D. Disclosure of researcher contributions: a study of original research articles in *The Lancet*. *Ann Intern Med*. 1999;130:661-70.

³ Flanagan A, Fontanarosa PB, DeAngelis CD. Authorship for research groups. *JAMA*. 2002;288:3166-8.

Increasingly, authorship of multicenter trials is attributed to a group. All members of the group who are named as authors should fully meet the above criteria for authorship/contributorship.

The group should jointly make decisions about contributors/authors before submitting the manuscript for publication. The corresponding author/guarantor should be prepared to explain the presence and order of these individuals. It is not the role of editors to make authorship/contributorship decisions or to arbitrate conflicts related to authorship.

Contributors Listed in Acknowledgments

All contributors who do not meet the criteria for authorship should be listed in an acknowledgments section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Editors should ask corresponding authors to declare whether they had assistance with study design, data collection, data analysis, or manuscript preparation. If such assistance was available, the authors should disclose the identity of the individuals who provided this assistance and the entity that supported it in the published article. Financial and material support should also be acknowledged.

Groups of persons who have contributed materially to the paper but whose contributions do not justify authorship may be listed under such headings as "clinical investigators" or "participating investigators," and their function or contribution should be described—for example, "served as scientific advisors," "critically reviewed the study proposal," "collected data," or "provided and cared for study patients." Because readers may infer their endorsement of the data and conclusions, these persons must give written permission to be acknowledged.

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