Responsible Research and Innovation (RRI) and Research Information Systems

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Declaration of activities and relationships

University of Split School of Medicine, Split, Croatia:
Chair, Department of Research in Biomedicine and Health
Head, Center for Evidence-based Medicine

International Society of Global Health:
Co-editor in Chief, Journal of Global Health

Co-chair, Scientific Cochrane Committee
Council member, Committee on Publication Ethics (COPE)
President, The Embassy of Good Science Foundation

Funding:
Croatian Research Foundation
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Responsible Research and Innovation
Open and Responsible Research and Innovation

https://www.fosteropenscience.eu/resources
Research integrity and Research ethics

• **Research ethics** addresses the application of ethical principles or values to the various issues and fields of research. This includes ethical aspects of the design and conduct of research, the way human participants or animals within research projects are treated, whether research results may be misused for criminal purposes and it refers also on aspects of scientific misconduct.

• **Research integrity** is recognized as the attitude and habit of the researchers to conduct research according to appropriate ethical, legal and professional frameworks, obligations and standards.
Journals and open and responsible research

“Most of the allegations and findings center upon publication issues, because scientific publication documents the actions of the researcher.”

Claxton LD. Scientific authorship. 
Mutat Res 2001

If journals and their editors are placed well to detect scientific misconduct, they are also well placed to prevent misconduct and promote responsible conduct of research.
Research and publication ethics are a spectrum

Design
- Unethical research design

Analysis
- Inappropriate analysis
- Data falsification

Reporting
- Plagiarism
- Selective / non-publication

Conduct
- Lack of patient consent
- Data fabrication
- Image manipulation
- Authorship abuse
- Redundant publication
Good conduct and misconduct are a spectrum

- Technical problems
- Underpowered studies
- Salami science
  - Poor reporting
- Poor referencing
- Image manipulation
- Plagiarism
- Falsification
- Fraud
- Honest error
- Weak methods
- Inappropriate analysis
  - Missing data
- Data trimming
- Fabrication
Ethical responsibility of editors and journals?

To ensure the integrity of the published record.
From 1665 to digital publishing
Changes in peer review

Changes in peer review

Development of peer review

Single blind

Double blind

Consultative

Results free review

Open peer review

Post-publication
Development of peer review

- Single blind
- Double blind
- Consultative
- Results free review
- Open peer review
- Post-publication

Dear Sir,

We (Mr. Rosen and I) had sent you our manuscript for publication and had not authorized you to show it to specialists before it is printed. I see no reason to address the—in any case erroneous—comments of your anonymous expert. On the basis of this incident I prefer to publish the paper elsewhere.

Respectfully,

[Signature]

Physical Review, 1936
Responsible conduct of research – editor’s role

2.7 Publication and Dissemination

- Responsibility of authors for content
- Authorship
- Openness
- Acknowledging others
- Declaring interests
- Correcting published record
- Publishing negative results
- Same criteria for all publications

2.8 Reviewing, Evaluating and Editing

- Responsible refereeing, reviewing and evaluation
- Transparent and justifiable review and evaluation
- Managing conflicts of interest
- Maintaining confidentiality
- Respecting rights of authors and applicants
Responsible conduct of research – editor’s role

ICMJE, 1979

Uniform requirements for manuscripts submitted to biomedical journals

International Steering Committee of Medical Editors*

British Medical Journal, 1979, 1, 50-510

On 5 February 1979 the second meeting of the International Steering Committee of Medical Editors was held in Brussels. The committee approved the proposals for a uniform style for biomedical manuscripts contained in the original Vancouver document with some minor amendments. The revised edition is published here, and many journals will begin to introduce the system later this year.

The editors of seven journals (including the New England Journal of Medicine and Canadian Medical Association Journal) have agreed to receive manuscripts prepared and submitted in accordance with the requirements described here. Authors must also certify the information presented in the journal to which they plan to submit their manuscript. The information contained in the manuscript must be suitable for that particular journal and the types of papers that may be submitted—for example, original articles, review articles, case reports, and brief reports. In addition, the journal’s own instructions concern important information concerning acceptable languages, length of articles, approved abbreviations besides those listed in this document, number of copies of manuscripts to be submitted, and requirements of transfer of copyright.

The material in this document will be revised as necessary.

*Members of the International Steering Committee are: John B. Lucey, Jr., University of Washington Medical School, Seattle, Washington; William H. Bottomley, Virginia Commonwealth University, Richmond, Virginia; Sheela Chugh, University of Hong Kong; Stephen Lock, M.A., M.R.C.P., British Medical Journal, British Medical Association, Tavistock Square, London WC1H 9JT, United Kingdom.

Reprints of these instructions will be available to editors of biomedical journals free of charge and in return is a copy of ICMJE’s Uniform Requirements for Manuscripts Submitted to Biomedical Journals. ICMJE will make available to all participating journals, will be published this year.

Summary of requirements

Title page: double-spaced, including title page, abstract, text, acknowledgments, references, tables, and legends. Each manuscript component should begin on a new page. In this sequence: title page, abstract, text, acknowledgments, references, tables, and legends. Each manuscript page should be numbered on the top of the page, and the body should begin on page 3 of 5-7 pages. For pages larger than 20-25 pages, page numbers should be placed in the upper right-hand corner of each page.

Preparation of manuscript

Type manuscript on white bond paper, 20 lb. (80 g/m²) at 12 or 10 pt. in size. Use a 4 pt. (7 mm) rule, double-spaced throughout, including title page, abstract, text, acknowledgments, references, tables, and legends. Averaging 250 words, the page should be about 300 words, or 300 lines. Include the number of figures and tables on the title page. Type the page number in the upper right-hand corner of each page.

Manuscripts will be reviewed for possible publication with the

Manuscript Preparation and Submission

Preparing a Manuscript for Submission to a Medical Journal

Sending the Manuscript to the Journal
Editorial ethics standards

- Implementing international editorial standards
- Peer review process
- Correcting the published record
- Authorship
- Competing interest
- Financial support
- Ethics of research on humans and animals
- Ethics committee approvals
- Trial registration
- Privacy protection
- Image manipulation
- Competing interests of editors in their own journals
Journal editors: Role in responsible publishing

**Strengths**
- Authority in the scientific community
- Editorial independence
- Power to formulate and implement editorial policies

**Weaknesses**
- No mandate for legal action
- Few means of action
- Lack of training and resources

**Opportunities**
- Editorial policies
- New technologies
- Greater transparency of science

**Threats**
- Lack of legal regulation for RI
- Lack of support for editors
- Pressures on journal editors
Editorial policies

CSE's White Paper on Promoting Integrity in Scientific Journal Publications

EASE Science Editors' Handbook – Ethical issues

ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals

WAME Policy Statement on the Responsibilities of Medical Editors

COPE Code of Conduct, Ethics Flowcharts, Guidelines on Article Retraction
Committee on Publication Ethics

Core practices
Core practices are the policies and practices journals and publishers need, to reach the highest standards in publication ethics, including cases, guidance and events, to support journals and publishers.

View Core Practices

Flowcharts
Flowcharts are designed to help editors follow COPE’s Code of Conduct and implement its advice when faced with cases of suspected misconduct.

View Flowcharts

Cases
All of the cases COPE has discussed since its inception in 1997 have been entered into a searchable database. This database now contains over 500 cases together with the advice given by COPE.

View Cases

Guidelines
Access COPE’s official guidance, including the Retraction Guidelines.

View Guidelines

Discussion Documents
Discussion documents aim to stimulate discussion and debate within the academic publishing community. Comments on the documents will be used to inform future guidelines and policies.

View Documents

International standards for editors and authors
Position statements setting out international standards for responsible research publication for editors and authors.

View more
What to do if you suspect plagiarism

(a) Suspected plagiarism in a submitted manuscript

1. Reviewer informs editor about suspected plagiarism
2. Thank reviewer and say you plan to investigate
   Get full documentary evidence if not already provided
3. Check degree of copying
   - Clear plagiarism (unattributed use of large portions of text and/or data, presented as if they were by the plagiarist)
   - Minor copying of short phrases only (e.g., in discussion of research paper from non-native language speaker)
   - No misattribution of data
   - Redundancy (i.e., copying from author’s own work) – see flowcharts on redundancy
   - No problem

Note:
The instructions to authors should include a definition of plagiarism and state the journal’s policy on it.
Challenges to journals in the digital world
Challenge: Image manipulation
Image manipulation policies

Rossner M, Yamada KM. What’s in a picture? The temptation of image manipulation. *Journal of Cell Biology* 2004;166:11-15

Journal policy:

- No specific feature within an image may be enhanced, obscured, moved, removed, or introduced.

- Adjustments of brightness, contrast, or color balance are acceptable if they are applied to the whole image and as long as they do not obscure or eliminate any information present in the original. Nonlinear adjustments must be disclosed in the figure legend.
Image manipulation policies

STM Working Group, 2021
Recommendations for handling image integrity issues

- Image handling principles for editors:
  - Scope of journal integrity assessment
  - Editor responsibilities and transparency
  - Source data
  - Replicate data
  - Interactions between journals and institutions
  - Interactions between journals
  - Considering comments from third parties (readers, whistleblower)
  - Legal considerations

- Classification of image aberrations
  - 3 levels (from unintentional mistakes to intentional manipulation)
  - Examples
  - Action Pre-publication
  - Action Post-publication

STM Working Group, 2021

Recommendations for handling image integrity issues

Level 1

Image irregularities can in principle be due to inadvertent mistakes in data processing or cosmetic image processing (‘beautification’) that nonetheless potentially affects the proper interpretation of the data by the reader. There is no evidence for intent to mislead. Source data is readily available and explains the aberrations or possible aberrations.

Level 2

Significant data “beautification” or undeclared image/data manipulations, which undermine objective data presentation, which are at odds with accepted scholarly practice, and which change the scientific conclusions for key data in a research paper. Intent to mislead cannot be excluded without formal further investigation.

https://osf.io/8j3az/
Challenge: Correcting articles for honest errors
“Retraction with republication” (also referred to as “replacement”) can be considered in cases where honest error leads to a major change in the direction or significance of the results, interpretations, and conclusions. ... retraction with republication of the changed paper, with an explanation, allows full correction of the scientific literature. ...it is helpful to show the extent of the changes in supplementary material or in an appendix, for complete transparency.”
Indexing changes to a an article

**Fact Sheet: Errata, Retractions, and Other Linked Citations in PubMed, 2017;**

**Errata** – “... errors that originate in the publication process and those that result from errors of scientific logic or methodology ...”

**Expression of Concern** – “... about the integrity of a published article ... typically written by an editor using that phrase in the item title ...”

**Author Responses to Comments** – “... a published letter that NLM considers a comment will be immediately followed by a response written by the author(s) of the original article ...”

**Duplicate Publications** – „When NLM identifies an article that duplicates another article without acknowledgement, the citations for both articles are assigned the Publication Type of Duplicate Publication [PT].”

**Updated Articles** – „... article that updates a previous article must ... state that it is an updated version ... or must appear in a journal that routinely publishes such updates as its primary content.”

**Republished (Reprinted) articles** – „... republish (i.e., reprint) a significant article that was recently published in another journal.”
Indexing changes to a previously published article

Fact Sheet: Errata, Retractions, and Other Linked Citations in PubMed

2017
Corrected and Republished Articles

“... correct a previously published article by republishing the article in its entirety, often to rectify an editorial or printing error in the original article. The citation for the republished article is indexed with the additional Publication Type of Corrected and Republished Article [PT] and is linked to the citation for the original article. Citations for a republished article include the phrase “Corrected and republished from: [article title],” and citations for the original article include the phrase “Corrected and republished in: [article title].”

Added in 2018

“... Journals also may correct a previously published article that was retracted due to errors in science. The citation for the republished article is indexed with the Publication Type of Corrected and Republished Article [PT] and is linked to the citation for the retracted article. Citations for a republished article include the phrase “Retracted and republished from: [article title],” and citations for the retracted article include the phrase “Retracted and republished in: [article title].”
How well do glucose variability measures predict patient glycaemic outcomes during treatment intensification in type 2 diabetes?

Silvio E Inzucchi, Guillermo Umpierrez, Andres DiGenio, Rong Zhou, Boris Kovatchev

Affiliations + expand

PMID: 25661664 DOI: 10.1016/j.diabres.2014.12.020

Corrected and republished in

How well do glucose variability measures predict patient glycaemic outcomes during treatment intensification in type 2 diabetes?

Inzucchi SE, Umpierrez G, DiGenio A, Zhou R, Kovatchev B.


PMID: 27049155

Corrected and republished from

How well do glucose variability measures predict patient glycaemic outcomes during treatment intensification in type 2 diabetes?

Inzucchi SE, Umpierrez G, DiGenio A, Zhou R, Kovatchev B.


PMID: 25661664 Corrected and republished. Clinical Trial.
Primary prevention of cardiovascular disease with a Mediterranean diet

Ramón Estruch 1, Emilio Ros, Jordi Salas-Salvadó, Maria-Isabel Covas, Dolores Corella, Fernando Arós, Enrique Gómez-Gracia, Valentina Ruiz-Gutiérrez, Miquel Fiol, José Lapetra, Rosa Maria Lamuela-Raventos, Lluís Serra-Majem, Xavier Pintó, Josep Basora, Miguel Angel Muñoz, José V Sorlí, José Alfredo Martinez, Miguel Angel Martinez-González, PREDIMED Study Investigators

Retraction in
PMID: 29897867 Corrected and republished. No abstract available.

Corrected and republished in
Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts.
PMID: 29897866
**Corrected and republished from**

**Primary prevention of cardiovascular disease with a Mediterranean diet.**

PMID: 23432189  **Corrected and republished. Retracted.**  Clinical Trial.


PMID: 29897867  **Corrected and republished.**  No abstract available.
Another example: JAMA 2017

Retracted Article

See: Retraction Notice

Cardiac rehabilitation use among veterans with ischemic heart disease.

Schopfer DW1, Takemoto S1, Alsup K2, Hellrich CD2, Ho PM3, Forman DE5, Wholey MA6.

Author information

Retraction in:

PMID: 25335666 DOI: 10.1001/jamainternmed.2014.3441

Indexed for MEDLINE

Publication types, MeSH terms

Publication types
Research Support, U.S. Gov't, Non P.H.S.
Retracted Publication
Another example: JAMA 2018

Retracted and republished article
See the retraction notice


Cardiac rehabilitation use among veterans with ischemic heart disease

David W Schopfer 1, Steven Takemoto 1, Kelly Allsup 2, Christian D Helfrich 3, P Michael Ho 4, Daniel E Forman 5, Mary A Whooley 6

Affiliations + expand
PMID: 25133868 DOI: 10.1001/jamainternmed.2014.3441

Retracted and republished in


PMID: 27723859 No abstract available.

Retracted and republished from


PMID: 25133868 Retracted and republished. No abstract available.
Challenges for retracted and republished articles

- Journals are not consistent in presenting article changes
- Linking services do not deliver clear updates
- Indexing databases have discrepancies in differentiating and tagging these articles.

Challenge: Preprints
Challenge: Preprints

Preprint (NLM definition):

„Preprints are complete and public drafts of scientific documents, not yet certified by peer review. These documents ensure that the findings of the research community are widely disseminated, priorities of discoveries are established and they invite feedback and discussion to help improve the work.”
Comprehensive in-vivo secondary structure of the SARS-CoV-2 genome reveals novel regulatory motifs and mechanisms

Nicholas C Huston, Han Wan, Rafael de Cesaris Araujo Tavares, Craig Wilen, Anna Marie Pyle

Affiliations + expand

PMID: 32676598  PMCID: PMC7359520  DOI: 10.1101/2020.07.10.197079
Free PMC article

Update in

Comprehensive in vivo secondary structure of the SARS-CoV-2 genome reveals novel regulatory motifs and mechanisms.
Huston NC, Wan H, Strine MS, de Cesaris Araujo Tavares R, Wilen CB, Pyle AM.

PMID: 33444546  Free PMC article.
Challenge: Indexing preprints

Comprehensive in vivo secondary structure of the SARS-CoV-2 genome reveals novel regulatory motifs and mechanisms

Nicholas C Huston, Han Wan, Madison S Strine, Rafael de Cesaris Araujo Tavares, Craig B Wilen, Anna Marie Pyle

Affiliations + expand
PMID: 33444546  PMCID: PMC7775661  DOI: 10.1016/j.molcel.2020.12.041

Free PMC article

Abstract
Severe-acute-respiratory-syndrome-related coronavirus 2 (SARS-CoV-2) virus that causes coronavirus disease 2019 (COVID-19). The genome of viral RNAs in its vast potential to form RNA structures, yet as much as

Update of
Comprehensive in-vivo secondary structure of the SARS-CoV-2 genome reveals novel regulatory motifs and mechanisms.
PMID: 32676598  Free PMC article.  Updated.
Challenge: Paper mills
Paper mills

Definition (COPE): “the process by which manufactured manuscripts are submitted to a journal for a fee on behalf of researchers with the purpose of providing an easy publication for them, or to offer authorship for sale”.

Papers from paper mills are not the work of the named author and they contain fraudulent content.

Detection of articles from paper mills is difficult. Current detection tools may not show up problems.

Over 2000 articles from paper mills discovered; 26% retracted or expressions of concern published.
Paper mills

Paper mills

Exclusive: Russian site says it has brokered authorships for more than 10,000 researchers

Retraction Watch

We sell publications of finished articles in Scopus and Web of Science magazines (articles written and accepted in journals; sold in parts or in whole).
Co-authorship in Scopus, Web of Science research papers

Co-authorship provides an opportunity to become a co-author of an existing article that has been accepted for publication in Scopus, Web of Science (SCIE, SSCI, AHCI, ESCI) indexing journals.
Challenge: Predatory journals
Predatory journals

**Definition (WIKI):**
Predatory open access publishing is an exploitative open-access publishing business model that involves charging publication fees to authors without providing the editorial and publishing services associated with legitimate journals (open access or not).

Pseudo-journals
Predatory journals

- Intention to deceive
- Misuse of Gold OA
- Conflict of interest (more paper – more income)
- Manipulative spamming
- Targeting young researchers and those from smaller academic communities
- Mimicking legitimate publishers
- Fake metrics
- Highjacking legitimate journals
Predatory journals

http://thinkchecksubmit.org/

Sharing research results with the world is key to the progress of your discipline and career. But with so many publications, how can you be sure you can trust a particular journal? Follow this check list to make sure you choose trusted journals for your research.
Instead of a conclusion: Quality assurance in editing

- Guidelines
- Standards
- Editorial policies

Structure

- Process
- Outcome

End result of care: Are we getting better in responsible publishing?

- Declaring contributions and conflicts
- Verifying integrity of articles
- Handling allegations
- Correcting literature

Your platform for research integrity and ethics