

**Uniform  
Requirements  
for Manuscripts  
Submitted to  
Biomedical  
Journals**

*and supplemental  
statements from the  
International Committee  
of Medical Journal Editors*

Printed in the U.S.A.



1994

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## **Preface**

A small group of editors of general medical journals met informally in Vancouver, British Columbia, in 1978 to establish guidelines for the format of manuscripts submitted to their journals. The group, now expanded and known as the International Committee of Medical Journal Editors (also known as the Vancouver Group), has met annually since then and its concerns have broadened.

The committee has produced four editions of the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals*; the fourth edition was revised slightly in January and in September 1993. (The revised text is footnoted.) In the process of discussing manuscript requirements, questions have been raised about other issues surrounding publication, especially ethics. Some of these concerns are now covered in the *Uniform Requirements*; others are addressed in separate statements issued by the committee. The *Uniform Requirements* and the committee statements are reproduced in this booklet. Each statement initially was published in a scientific journal, and citations to the original publications are included here. The total content of this booklet may be reproduced for educational, not-for-profit purposes without regard for copyright; the committee encourages distribution of the material, which we hope you will find useful.

Journals that agree to use the *Uniform Requirements* are asked to cite the document in their Instructions to Authors. Over 500 journals now participate in this agreement.

Inquiries and comments should be sent to the secretariat office listed on the following page.

**International Committee of Medical  
Journal Editors**

## **Publications Represented on the International Committee—1994**

Annals of Internal Medicine  
 British Medical Journal  
 Canadian Medical Association Journal  
 Journal of the American Medical Association  
 The Lancet  
 The Medical Journal of Australia  
 The New England Journal of Medicine  
 New Zealand Medical Journal  
 Tidsskrift for Den Norske Laegeforening  
 The Western Journal of Medicine  
 and  
 Index Medicus

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## ***Uniform Requirements for Manuscripts Submitted to Biomedical Journals***

In January 1978 a group of editors from some major biomedical journals published in English met in Vancouver, British Columbia, and decided on uniform technical requirements for manuscripts to be submitted to their journals. These requirements, including formats for bibliographic references developed for the Vancouver group by the National Library of Medicine, were published in 1979. The Vancouver group evolved into the International Committee of Medical Journal Editors. Over the years, the group has revised the requirements; this is the fourth edition.

Close to 500 journals have agreed to receive manuscripts prepared in accordance with the requirements. It is important to emphasize what these requirements imply and what they do not.

First, the requirements are instructions to authors on how to prepare manuscripts, not to editors on publication style. (But many journals have drawn on these requirements for elements of their publication styles.)

Second, if authors prepare their manuscripts in the style specified in these requirements, editors of the participating journals will not return manuscripts for changes in style before considering them for publication. Even so, in the publishing process journals may alter accepted manuscripts to conform with details of the journal's publication style.

Third, authors sending manuscripts to a participating journal should not try to prepare them in accordance with the publication style of that journal but should follow the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals*.

Authors must also follow the instructions to authors in the journal as to what topics are suitable for that journal and the types of papers that may be submitted—for example, original articles, reviews, or case reports. In addition, the

journal's instructions are likely to contain other requirements unique to that journal, such as number of copies of manuscripts, acceptable languages, length of articles, and approved abbreviations.

Participating journals are expected to state in their instructions to authors that their requirements are in accordance with the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* and to cite a published version. This document will be revised at intervals.

### **SUMMARY OF REQUIREMENTS**

Type the manuscript double-spaced, including title page, abstract, text, acknowledgments, references, tables, and legends.

Each manuscript component should begin on a new page, in the following sequence: title page, abstract and key words, text, acknowledgments, references, tables (each table complete with title and footnotes on a separate page), and legends for illustrations.

Illustrations must be good-quality, unmounted glossy prints, usually 127 × 173 mm (5 × 7 in.), but no larger than 203 × 254 mm (8 × 10 in.).

Submit the required number of copies of manuscripts and illustrations (see journal's instructions) in a heavy-paper envelope. The submitted manuscript should be accompanied by a covering letter, as described under Submission of Manuscripts, and permissions to reproduce previously published material or to use illustrations that may identify human subjects.

Follow the journal's instructions for transfer of copyright. Authors should keep copies of everything submitted.

### **REDUNDANT OR DUPLICATE PUBLICATION\***

Redundant publication is publication of a paper that overlaps substantially with one al-

ready published.

Readers of primary source periodicals deserve to be able to trust that what they are reading is original, unless it is clearly stated that the article is being republished by choice of the author and editor. The bases of this position are international copyright laws, ethical conduct, and cost-effective use of resources.

Most journals do not wish to receive papers on work that has already been reported in large part in a published article or is contained in another paper that has been submitted or accepted for publication elsewhere, in print or in electronic media. This policy does not preclude consideration of a paper that has been rejected by another journal or of a complete report that follows publication of a preliminary report, such as an abstract or poster displayed for colleagues at a professional meeting. Nor does it prevent consideration of a paper that has been presented at a scientific meeting but not published in full, or is under consideration for publication in a proceedings or similar format. Press reports of scheduled meetings will not usually be considered as breaches of this rule, but such reports should not be amplified by additional data or copies of tables and illustrations.

When submitting a paper, an author should always make a full statement to the editor about all submissions and previous reports that might be regarded as redundant publication of the same or very similar work. The author should alert the editor if the work includes subjects about whom a previous report has been published. Any such work should be referred to and referenced in the new paper. Copies of such material should be included with the submitted paper to help the editor decide how to deal with the matter.

If redundant publication occurs, authors should expect editorial action to be taken. At the least, prompt rejection of the manuscript should be expected; if, because the editor was not aware of the violations, the article has already been

\*Section revised slightly in September 1993 and June 1994.

published, then a notice of redundant publication will probably be published with or without an author's explanation or approval.

Preliminary release, usually to public media, of scientific information described in a paper that has been accepted but not yet published is a violation of the policies of many journals. In a few cases, and only by arrangement with the editor, preliminary release of data may be acceptable—for example, if there is a public health emergency.

### **ACCEPTABLE SECONDARY PUBLICATION**

Secondary publication in the same or other language, especially in other countries, is justifiable, and can be beneficial, providing all of the following conditions are met.

1) The authors have received approval from the editors of both journals; the editor concerned with secondary publication must have a photocopy, reprint, or manuscript of the primary version.

2) The priority of the primary publication is respected by a publication interval of at least 1 week (unless specifically negotiated otherwise by both editors).

3) The paper for secondary publication is intended for a different group of readers; an abbreviated version could be sufficient.

4) The secondary version reflects faithfully the data and interpretations of the primary version.

5) A footnote of the title page of the secondary version informs readers, peers, and documenting agencies that the paper has been published in whole or in part and states the primary reference. A suitable footnote might read as follows: "This article is based on a study first reported in the [title of journal, with full reference]."

Permission for such secondary publication should be free of charge.

### **PREPARATION OF MANUSCRIPT**

Type or print out the manuscript on white bond paper, 216 × 279 mm (8 1/2 × 11 in.), or

ISO A4 (212 × 297 mm), with margins of at least 25 mm (1 in.). Type or print on only one side of the paper. Use double-spacing throughout, including title page, abstract, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Put the page number in the upper or lower right-hand corner of each page.

### **Title Page**

The title page should carry a) the title of the article, which should be concise but informative; b) first name, middle initial, and last name of each author, with highest academic degree(s) and institutional affiliation; c) name of department(s) and institution(s) to which the work should be attributed; d) disclaimers, if any; e) name and address of author responsible for correspondence about the manuscript; f) name and address of author to whom requests for reprints should be addressed or statement that reprints will not be available from the author; g) source(s) of support in the form of grants, equipment, drugs, or all of these; and h) a short running head or foot line of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified.

### **Authorship**

All persons designated as authors should qualify for authorship. The order of authorship should be a joint decision of the coauthors. Each author should have participated sufficiently in the work to take public responsibility for the content.

Authorship credit should be based only on substantial contributions to a) conception and design, or analysis and interpretation of data; and to b) drafting the article or revising it critically for important intellectual content; and on c) final approval of the version to be published. Conditions a), b), and c) must all be met. Participation solely in the acquisition of funding or the collec-

tion of data does not justify authorship. General supervision of the research group is not sufficient for authorship. Any part of an article critical to its main conclusions must be the responsibility of at least one author.

Editors may require authors to justify the assignment of authorship.

Increasingly, multicenter trials are attributed to a corporate author. All members of the group who are named as authors, either in the authorship position below the title or in a footnote, should fully meet the criteria for authorship as defined in the *Uniform Requirements*. Group members who do not meet these criteria should be listed, with their permission, under Acknowledgments or in an appendix (see Acknowledgments).

### **Abstract and Key Words**

The second page should carry an abstract (of no more than 150 words for unstructured abstracts or 250 words for structured abstracts). The abstract should state the purposes of the study or investigation, basic procedures (selection of study subjects or laboratory animals; observational and analytical methods), main findings (give specific data and their statistical significance, if possible), and the principal conclusions. Emphasize new and important aspects of the study or observations.

Below the abstract provide, and identify as such, 3 to 10 key words or short phrases that will assist indexers in cross-indexing the article and may be published with the abstract. Use terms from the medical subject headings (MeSH) list of *Index Medicus*; if suitable MeSH terms are not yet available for recently introduced terms, present terms may be used.

### **Text**

The text of observational and experimental articles is usually—but not necessarily—divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to

clarify their content, especially the Results and Discussion sections. Other types of articles such as case reports, reviews, and editorials are likely to need other formats. Authors should consult individual journals for further guidance.

### **Introduction**

State the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references, and do not review the article extensively. Do not include data or conclusions from the work being reported.

### **Methods**

Describe your selection of the observational or experimental subjects (patients or laboratory animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods (see below); provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration.

### **Ethics**

When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 1983. Do not use patient's names, initials, or hospital numbers, especially in illustrative material. When reporting experiments on animals, indicate whether the institution's or the National Research Council's guide for, or any national law on, the care and use of laboratory animals was followed.

### **Statistics**

Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). Avoid sole reliance on statistical hypothesis testing, such as the use of P values, which fails to convey important quantitative information. Discuss eligibility of experimental subjects. Give details about randomization. Describe the methods for and success of any blinding of observations. Report treatment complications. Give numbers of observations. Report losses to observation (such as dropouts from a clinical trial). References for study design and statistical methods should be to standard works (with pages stated) when possible rather than to papers in which the designs or methods were originally reported. Specify any general-use computer programs used.

Put a general description of methods in the Methods section. When data are summarized in the Results section, specify the statistical methods used to analyze them. Restrict tables and figures to those needed to explain the argument of the paper and to assess its support. Use graphs as an alternative to tables with many entries; do not duplicate data in graphs and tables. Avoid non-technical uses of technical terms in statistics, such as “random” (which implies a randomizing device), “normal,” “significant,” “correlations,” and “sample.” Define statistical terms, abbreviations, and most symbols.

### **Results**

Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations.

### **Discussion**

Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail data or other material given in the Introduction or the Results section. Include in the Discussion section the implications of the findings and their limitations, including implications for future research. Relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

### **Acknowledgments**

At an appropriate place in the article (title-page footnote or appendix to the text; see the journal’s requirements) one or more statements should specify a) contributions that need acknowledging but do not justify authorship, such as general support by a departmental chair; b) acknowledgments of technical help; c) acknowledgments of financial and material support, specifying the nature of the support; d) financial relationships that may pose a conflict of interest.

Persons who have contributed intellectually to the paper but whose contributions do not justify authorship may be named and their function or contribution described—for example, “scientific adviser,” “critical review of study proposal,” “data collection,” or “participation in clinical trial.” Such persons must have given their permission to be named. Authors are responsible for obtaining written permission from persons acknowledged by name, because readers may infer their endorsement of the data and conclusions.

Technical help should be acknowledged in a paragraph separate from those acknowledging other contributions.



## References

Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in parentheses. References cited only in tables or in legends to figures should be numbered in accordance with a sequence established by the first identification in the text of the particular table or figure.

Use the style of the examples below, which are based with slight modifications on the formats used by the U.S. National Library of Medicine in *Index Medicus*. The titles of journals should be abbreviated according to the style used in *Index Medicus*. Consult *List of Journals Indexed in Index Medicus*, published annually as a separate publication by the library and as a list in the January issue of *Index Medicus*.

Try to avoid using abstracts as references; "unpublished observations" and "personal communications" may not be used as references, although references to written, not oral, communications may be inserted (in parentheses) in the text. Include in the references papers accepted but not yet published; designate the journal and add "In press." Information from manuscripts submitted but not yet accepted should be cited in the text as "unpublished observations" (in parentheses).

The references must be verified by the author(s) against the original documents.

Examples of correct forms of references are given below.

### Articles in Journals

1) *Standard journal article* (List all authors, but if the number exceeds six, give six followed by et al.)

You CH, Lee KY, Chey RY, Menguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. *Gastroenterology* 1980 Aug;79(2):311-4.

As an option, if a journal carries continuous pagination throughout a volume, the month and

issue number may be omitted.

You CH, Lee KY, Chey RY, Menguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. *Gastroenterology* 1980;79:311-4.

Goate AM, Haynes AR, Owen MJ, Farrall M, James LA, Lai LY, et al. Predisposing locus for Alzheimer's disease on chromosome 21. *Lancet* 1989;1:352-5.

### 2) *Organization as author*

The Royal Marsden Hospital Bone-Marrow Transplantation Team. Failure of syngeneic bone-marrow graft without preconditioning in post-hepatitis marrow aplasia. *Lancet* 1977;2:742-4.

### 3) *No author given*

Coffee drinking and cancer of the pancreas [editorial]. *BMJ* 1981;283:628.

### 4) *Article not in English*

Massone L, Borghi S, Pestarino A, Piccini R, Gambini C. Localisations palmaires purpuriques de la dermatite herpétiforme. *Ann Dermatol Venereol* 1987;114:1545-7.

### 5) *Volume with supplement*

Magni F, Rossoni G, Berti F. BN-52021 protects guinea-pig from heart anaphylaxis. *Pharmacol Res Commun* 1988;20 Suppl 5:75-8.

### 6) *Issue with supplement*

Gardos G, Cole JO, Haskell D, Marby D, Paine SS, Moore P. The natural history of tardive dyskinesia. *J Clin Psychopharmacol* 1988;8(4 Suppl):31S-37S.

### 7) *Volume with part*

Hanly C. Metaphysics and innateness: a psychoanalytic perspective. *Int J Psychoanal* 1988;69(Pt 3):389-99.

### 8) *Issue with part*

Edwards L, Meyskens F, Levine N. Effect of oral isotretinoin on dysplastic nevi. *J Am Acad Dermatol*

1989;20(2 Pt 1):257-60.

9) *Issue with no volume*

Baumeister AA. Origins and control of stereotyped movements. Monogr Am Assoc Ment Defic 1978;(3): 353-84.

10) *No issue or volume*

Danoek K. Skiing in and through the history of medicine. Nord Medicinhist Arsb 1982:86-100.

11) *Pagination in Roman numerals*

Ronne Y. Ansvarsfall. Blodtransfusion till fel patient. Vardfacket 1989;13:XXVI-XXVII.

12) *Type of article indicated as needed*

Spargo PM, Manners JM. DDAVP and open heart surgery [letter]. Anaesthesia 1989;44:363-4.

Fuhrman SA, Joiner KA. Binding of the third component of complement C3 by *Toxoplasma gondii* [abstract]. Clin Res 1987;35:475A.

13) *Article containing retraction*

Shishido A. Retraction notice: Effect of platinum compounds on murine lymphocyte mitogenesis [Retraction of Alsabti EA, Ghalib ON, Salem MH. In: Jpn J Med Sci Biol 1979;32:53-65]. Jpn J Med Sci Biol 1980;33:235-7.

14) *Article retracted*

Alsabti EA, Ghalib ON, Salem MH. Effect of platinum compounds on murine lymphocyte mitogenesis [Retracted by Shishido A. In: Jpn J Med Sci Biol 1980;33:235-7]. Jpn J Med Sci Biol 1979;32:53-65.

15) *Article containing comment*

Piccoli A, Bossatti A. Early steroid therapy in IgA neuropathy: still an open question [comment]. Nephron 1989;51:289-91. Comment on: Nephron 1988;48:12-7.

16) *Article commented on*

Kobayashi Y, Fujii K, Hiki Y, Tateno S, Kurokawa

A, Kamiyama M. Steroid therapy in IgA nephropathy: a retrospective study in heavy proteinuric cases [see comments]. Nephron 1988;48:12-7. Comment in: Nephron 1989;51:289-91.

17) *Article with published erratum*

Schofield A. The CAGE questionnaire and psychological health [published erratum appears in Br J Addict 1989;84:701]. Br J Addict 1988;83:761-4.

**Books and Other Monographs**

18) *Personal author(s)*

Colson JH, Armour WJ. Sports injuries and their treatment. 2nd rev. ed. London: S. Paul, 1986.

19) *Editor(s), compiler as author*

Diener HC, Wilkinson M, editors. Drug-induced headache. New York: Springer-Verlag, 1988.

20) *Organization as author and publisher*

Virginia Law Foundation. The medical and legal implications of AIDS. Charlottesville: The Foundation, 1987.

21) *Chapters in a book*

Weinstein L, Swartz MN. Pathologic properties of invading microorganisms. In: Sodeman WA Jr, Sodeman WA, editors. Pathologic physiology: mechanisms of disease. Philadelphia: Saunders, 1974:457-72.

22) *Conference proceedings*

Vivian VL, editor. Child abuse and neglect: a medical community response. Proceedings of the First AMA National Conference on Child Abuse and Neglect; 1984 Mar 30-31; Chicago. Chicago: American Medical Association, 1985.

23) *Conference paper*

Harley NH. Comparing radon daughter dosimetric and risk models. In: Gammage RB, Kaye SV, editors. Indoor air and human health. Proceedings of the Seventh Life Sciences Symposium; 1984 Oct 29-31; Knoxville (TN). Chelsea (MI): Lewis, 1985:69-78.

24) *Scientific or technical report*

Akutsu T. Total heart replacement device. Bethesda (MD): National Institutes of Health, National Heart and Lung Institute; 1974 Apr. Report No.: NIH-NHLI-69-2185-4.

25) *Dissertation*

Youssef NM. School adjustment of children with congenital heart disease [dissertation]. Pittsburgh (PA): Univ. of Pittsburgh, 1988.

26) *Patent*

Harred JF, Knight AR, McIntyre JS, inventors. Dow Chemical Company, assignee. Epoxidation process. US patent 3,654,317. 1972 Apr 4.

**Other Published Material**27) *Newspaper article*

Rensberger B, Specter B. CFCs may be destroyed by natural process. The Washington Post 1989 Aug 7; Sect. A:2 (col. 5).

28) *Audiovisual*

AIDS epidemic: the physician's role [videorecording]. Cleveland (OH): Academy of Medicine of Cleveland, 1987.

29) *Computer file*

Renal system [computer program]. MS-DOS version. Edwardsville (KS): MediSim, 1988.

30) *Legal material*

Toxic Substances Control Act: Hearing on S. 776 Before the Subcomm. on the Environment of the Senate Comm. on Commerce. 94th Cong., 1st Sess. 343 (1975).

31) *Map*

Scotland [topographic map]. Washington: National Geographic Society (US), 1981.

32) *Book of the Bible*

Ruth 3:1-18. The Holy Bible. Authorized King

James version. New York: Oxford Univ. Press, 1972.

33) *Dictionary and similar references*

Ectasia. Dorland's illustrated medical dictionary. 27th ed. Philadelphia: Saunders, 1988:527.

34) *Classical material*

The Winter's Tale: act 5, scene 1, lines 13-16. The complete works of William Shakespeare. London: Rex, 1973.

**Unpublished Material**35) *In press*

Lillywhite HD, Donald JA. Pulmonary blood flow regulation in an aquatic snake. Science. In press.

**Tables**

Type or print out each table double-spaced on a separate sheet. Do not submit tables as photographs. Number tables consecutively in the order of their first citation in the text and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Explain in footnotes all nonstandard abbreviations that are used in each table. For footnotes use the following symbols, in this sequence: \*, †, ‡, §, ||, ¶, \*\*, ††, ‡‡, . . . .

Identify statistical measures of variations such as standard deviation and standard error of the mean.

Do not use internal horizontal and vertical rules.

Be sure that each table is cited in the text.

If you use data from another published or unpublished source, obtain permission and acknowledge fully.

The use of too many tables in relation to the length of the text may produce difficulties in the layout of pages. Examine issues of the journal to which you plan to submit your paper to estimate how many tables can be used per 1000 words of text.

The editor, on accepting a paper, may recommend that additional tables containing important backup data too extensive to publish be deposited with an archival service, such as the National Auxiliary Publication Service in the United States, or made available by the authors. In that event an appropriate statement will be added to the text. Submit such tables for consideration with the paper.

### ***Illustrations (Figures)***

Submit the required number of complete sets of figures. Figures should be professionally drawn and photographed; freehand or typewritten lettering is unacceptable. Instead of original drawings, roentgenograms, and other material, send sharp, glossy, black-and-white photographic prints, usually  $127 \times 173$  mm ( $5 \times 7$  in.), but no larger than  $203 \times 254$  mm ( $8 \times 10$  in.). Letters, numbers, and symbols should be clear and even throughout and of sufficient size that when reduced for publication each item will still be legible. Titles and detailed explanations belong in the legends for illustrations, not on the illustrations themselves.

Each figure should have a label pasted on its back indicating the number of the figure, author's name, and top of the figure. Do not write on the back of figures or scratch or mar them by using paper clips. Do not bend figures or mount them on cardboard.

Photomicrographs must have internal scale markers. Symbols, arrows, or letters used in the photomicrographs should contrast with the background.

If photographs of persons are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to use the photograph.

Figures should be numbered consecutively according to the order in which they have been first cited in the text. If a figure has been published, acknowledge the original source and sub-

mit written permission from the copyright holder to reproduce the material. Permission is required irrespective of authorship or publisher, except for documents in the public domain.

For illustrations in color, ascertain whether the journal requires color negatives, positive transparencies, or color prints. Accompanying drawings marked to indicate the region to be reproduced may be useful to the editor. Some journals publish illustrations in color only if the author pays for the extra cost.

### ***Legends for Illustrations***

Type or print out legends for illustrations double-spaced, starting on a separate page, with Arabic numerals corresponding to the illustrations. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. Explain the internal scale and identify the method of staining in photomicrographs.

### ***UNITS OF MEASUREMENT***

Measurements of length, height, weight, and volume should be reported in metric units (meter, kilogram, or liter) or their decimal multiples.

Temperatures should be given in degrees Celsius. Blood pressures should be given in millimeters of mercury.

All hematologic and clinical chemistry measurements should be reported in the metric system in terms of the International System of Units (SI). Editors may request that alternative or non-SI units be added by the authors before publication.

### ***ABBREVIATIONS AND SYMBOLS***

Use only standard abbreviations. Avoid abbreviations in the title and abstract. The full term for which an abbreviation stands should precede its first use in the text unless it is a standard unit of measurement.

## **SUBMISSION OF MANUSCRIPTS**

Mail the required number of manuscript copies in a heavy-paper envelope, enclosing the manuscript copies and figures in cardboard, if necessary, to prevent bending of photographs during mail handling. Place photographs and transparencies in a separate heavy-paper envelope.

Manuscripts must be accompanied by a covering letter signed by all coauthors. This must include a) information on prior or duplicate publication or submission elsewhere of any part of the work as defined earlier in this document; b) a statement of financial or other relationships that might lead to a conflict of interest; c) a statement that the manuscript has been read and approved by all authors, that the requirements for authorship as previously stated in this document have been met, and furthermore, that each coauthor believes that the manuscript represents honest work; and d) the name, address, and telephone number of the corresponding author, who is responsible for communicating with the other authors about revisions and final approval of the proofs. The letter should give any additional information that may be helpful to the editor, such as the type of article in the particular journal the manuscript represents and whether the author(s) will be willing to meet the cost of reproducing color illustrations.

The manuscript must be accompanied by copies of any permissions to reproduce published material, to use illustrations or report sensitive personal information about identifiable persons, or to name persons for their contributions.

### ***Manuscripts on Diskettes***

For papers that are close to final acceptance, some journals require authors to provide manuscripts in electronic form (on diskettes) and may accept a variety of word-processing formats or text (ASCII) files.

When submitting diskettes, authors should:

1) Be certain to include a print-out of the

manuscript version on the diskette;

2) Put only the latest version of the manuscript on the diskette;

3) Name the file clearly;

4) Label the diskette with the file format and the file name;

5) Provide information on hardware and software used.

Authors should consult the journal's Information for Authors for acceptable formats, file- and diskette-naming conventions, number of copies to be submitted, and other details.

## **PARTICIPATING JOURNALS**

Journals that have notified the International Committee of Medical Journal Editors of their willingness to consider for publication manuscripts prepared in accordance with earlier versions of the committee's uniform requirements identify themselves as such in their information for authors. A full list is available on request from *Annals of Internal Medicine*.

***Additional Statements  
from the  
International Committee  
of Medical Journal  
Editors***

## ***Retraction of Research Findings***

Editors must assume initially that authors are reporting work based on honest observations. Nevertheless, two types of difficulty may arise.

First, errors may be noted in published articles that require the publication of a correction or erratum of a part of the work. It is conceivable that an error could be so serious as to vitiate the entire body of the work, but this is unlikely and should be handled by editors and authors on an individual basis. Such an error should not be confused with inadequacies exposed by the emergence of new scientific information in the normal course of research. The latter require no corrections or withdrawals.

The second type of difficulty is scientific fraud. If substantial doubts arise about the honesty of a work, either submitted or published, it is the editor's responsibility to ensure that the question is appropriately pursued (including possible consultation with the authors). However, it is not the task of editors to conduct a full investigation or to make a determination; that responsibility lies with the institution where the work has been done or with the funding agency. The editor should be promptly informed of the final decision, and, if a fraudulent paper has been published, the journal must print a retraction.

The retraction, so labeled, should appear in a prominent section of the journal, be listed in the contents page, and include in its heading the title of the original article. It should not simply be a letter to the editor. Ideally, the first author should be the same in the retraction as in the article, although under certain circumstances the editor may accept retractions by other responsible persons. The text of the retraction should explain why the article is being retracted and include a bibliographic reference to it.

The validity of previous work by the author of a fraudulent paper cannot be assumed. Editors may ask the author's institution to assure them of

the validity of earlier work published in their journals or to retract it. If this is not done they may choose to publish an announcement to the effect that the validity of previously published work is not assured. (*Approved 1987*)

### ***Editorial Freedom and Integrity***

Medical journal owners and editors have a common endeavor, the publishing of a reliable and readable journal, produced with due respect for the stated aims of the journal and for costs. The functions of owners and editors, however, are different. Owners have the right to appoint and dismiss editors and to make important business decisions, in which editors should be involved to the fullest extent possible. Editors must have full authority for determining the editorial content of the journal. This concept of editorial freedom should be resolutely defended by editors even to the extent of placing their positions at stake. To secure this freedom in practice, the editor should have direct access to the highest level of ownership, not only to a delegated manager.

Medical journal editors should have a contract that clearly states the editor's rights and duties in addition to the general terms of the appointment and defines mechanisms for resolving conflict.

An independent editorial advisory board may be useful in helping the editor establish and maintain editorial policy.

All editors and editors' organizations have the obligation to support the concept of editorial freedom and to draw major transgressions of such freedom to the attention of the international medical community. (*Approved 1988*)

### ***Confidentiality***

Manuscripts should be reviewed with due respect for authors' confidentiality. In submitting their manuscripts for review, authors entrust editors with the results of their scientific labor and creative effort, upon which their reputation and career may depend. Authors' rights may be violated by disclosure or by revelation of the confidential details of the review of their manuscript. Reviewers also have rights to confidentiality, which must be respected by the editor. Confidentiality may have to be breached if there are allegations of dishonesty or fraud but otherwise must be honored.

Editors should not disclose information about manuscripts, including their receipt, their content, their status in the reviewing process, their criticism by reviewers, or their ultimate fate. Such information should be provided only to authors themselves and reviewers.

Editors should make clear to their reviewers that manuscripts sent for review are privileged communications and are the private property of the authors. Therefore, reviewers and members of the editorial staff should respect the authors' rights by not publicly discussing the authors' work or appropriating their ideas before the manuscript is published. Reviewers should not be allowed to make copies of the manuscript for their files and should be prohibited from sharing it with others, except with the permission of the editor. Editors should not keep copies of rejected manuscripts.

Opinions differ on the anonymity of reviewers. Some editors of biomedical journals require their reviewers to sign the comments returned to authors, but most either request that reviewer's comments not be signed or leave that choice to the reviewer. When comments are not signed the reviewers' identity must not be revealed to the author or anyone else.



Some journals publish reviewers' comments with the manuscript. No such procedure should be adopted without the consent of the authors and reviewers. However, reviewers' comments may be sent to other reviewers of the same manuscript, and reviewers may be notified of the editor's decision. (*Approved 1989*)

## **The Role of the Correspondence Column**

All biomedical journals should have a section carrying comments, questions, or criticisms about articles they have published and where the original authors can respond. Usually, but not necessarily, this may take the form of a correspondence column. The lack of such a section denies readers the possibility of responding to articles in the same journal that published the original work. (*Approved 1989*)

## **Competing Manuscripts Based on the Same Study**

Editors may receive manuscripts from different authors offering competing interpretations of the same study. They have to decide whether to review competing manuscripts submitted to them more or less simultaneously by different groups or authors, or they may be asked to consider one such manuscript while a competing manuscript has been or will be submitted to another journal. Setting aside the unresolved question of ownership of data, we discuss here what editors ought to do when confronted with the submission of competing manuscripts based on the same study.

Two kinds of multiple submissions are considered: a) submissions by coworkers who disagree on the analysis and interpretation of their study; b) submissions by coworkers who dis-

agree on what the facts are and which data should be reported.

The following general observations may help editors and others dealing with this problem.

### ***Differences in Analysis or Interpretation***

Journals would not normally wish to publish separate articles by contending members of a research team who have differing analyses and interpretations of the data, and submission of such manuscripts should be discouraged. If coworkers cannot resolve their differences in interpretation before submitting a manuscript, they should consider submitting one manuscript containing multiple interpretations and calling their dispute to the attention of the editor so that reviewers can focus on the problem. One of the important functions of peer review is to evaluate the authors' analysis and interpretation and suggest appropriate changes in the conclusions before publication. Alternatively, after the disputed version is published, editors may wish to consider a letter to the editor or a second manuscript from the dissenting authors.

Multiple submissions present editors with a dilemma. Publication of contending manuscripts to air authors' disputes may waste journal space and confuse the reader. On the other hand, if editors knowingly publish a manuscript written by only some of the collaborating team they could be denying the rest of the team their legitimate coauthorship rights.

### ***Differences in Reported Methods or Results***

Workers sometimes differ in their opinions about what was actually done or observed and which data ought to be reported. Peer review cannot be expected to resolve this problem. Editors should decline further consideration of such multiple submissions until the problem is settled. Furthermore, if there are allegations of dishonesty or fraud, editors should inform appropriate authorities.

The cases described above should be distinguished from instances in which independent, noncollaborating authors submit separate manuscripts based on different analyses of publicly available data. In this circumstance editorial consideration of multiple submissions may be justified, and there may even be a good reason for publication of more than one manuscript because different analytical approaches may be complementary and equally valid. (*Approved 1991*)

## **Order of Authorship**

The order of authorship is determined by the authors. All authors should meet the basic criteria for authorship (as stated in the *Uniform Requirements*). Because order of authorship is assigned in different ways, its meaning cannot be inferred accurately unless it is stated by the authors. Authors may wish to add an explanation of the order of authorship in a footnote. In deciding on order, authors should be aware that many journals limit the number of authors listed in the table of contents and that the National Library of Medicine lists in MEDLINE only the first 10 authors. (*Approved 1991*)

## **Guidelines for the Protection of Patients' Right to Anonymity**

Detailed descriptions or photographs of individual patients, whether of their whole bodies or of body sections (including physiognomies), are sometimes central documentation in medical journal articles. Use of such material may lead to disclosure of patients' identity, sometimes even indirectly by combination of seemingly innocent information.

Patients (and relatives) have a right to anonymity in published clinical documentation. Details that might identify patients should be avoided

unless essential for scientific purposes. Masking of the eye region in photographs of patients may be inadequate protection of anonymity.

If publication of identifying information is essential, informed consent should be obtained.

Changing data on patients should not be used as a way of securing anonymity.

Medical journals ought to publish their editorial rules for accepting publication of detailed description of individual patients and photographs. When informed consent has been obtained by authors, this should be clearly stated in the article. (*Approved 1991*)

## **Definition of a Peer-Reviewed Journal**

A peer-reviewed journal is one that has submitted most of its published articles for review by experts who are not part of the editorial staff. The numbers and kinds of manuscripts sent for review, the number of reviewers, the reviewing procedures, and the use made of the reviewers' opinions may vary, and therefore each journal should publicly disclose its policies in the Instructions to Authors for the benefit of readers and potential authors. (*Approved 1992*)

## **Medical Journals and the Popular Media**

The public's interest in news of medical research has led the popular media to compete vigorously to get information about research as soon as possible. Researchers and institutions sometimes encourage the reporting of research in the popular media before full publication in a scientific journal by holding a press conference or giving interviews.

The public is entitled to important medical information without unreasonable delay, and

editors have a responsibility to do their part in this process. Doctors need to have reports available in full detail, however, before they can advise their patients about the conclusions. In addition, media reports of scientific research before the work has been peer reviewed and fully published may lead to the dissemination of inaccurate or premature conclusions.

Editors may find the following recommendations useful as they seek to establish policies on these issues.

1) Editors can foster the orderly transmission of medical information from researchers, through peer-reviewed journals, to the public. This can be accomplished by an agreement with authors that they will not publicize their work while their manuscript is under consideration or awaiting publication, and an agreement with the media that they will not release their stories before publication in the journal, in return for which the journal will cooperate with them in preparing accurate stories (see below).

2) Very little medical research has such clear and urgently important clinical implications for the public's health that the news must be released before full publication in a journal. In such exceptional circumstances, however, appropriate authorities responsible for public health should make the decision and should be responsible for the advance dissemination of information to physicians and the media. If the author and the appropriate authorities wish to have a manuscript considered by a particular journal, the editor should be consulted before any public release. If editors accept the need for immediate release, they should waive their policies limiting pre-publication publicity.

3) Policies designed to limit prepublication publicity should not apply to accounts in the media of presentations at scientific meetings or to the abstracts from these meetings (see *Prior and Duplicate Publication*). Researchers who present their work at a scientific meeting should feel free

to discuss their presentations with reporters, but they should be discouraged from offering more detail about their study than was presented in their talk.

4) When an article is soon to be published, editors may wish to help the media prepare accurate reports by providing news releases, answering questions, supplying advance copies of the journal, or referring reporters to the appropriate experts. This assistance should be contingent upon the cooperation of the media in timing their release of stories to coincide with the publication of the article. (*Approved 1993*)

## ***Conflict of Interest***

Conflict of interest for a given manuscript exists when a participant in the peer review and publication process—author, reviewer, and editor—has ties to activities that could inappropriately influence his or her judgment, whether or not judgment is in fact affected. Financial relationships with industry (for example, employment, consultancies, stock ownership, honoraria, expert testimony), either directly or through immediate family, are usually considered the most important conflicts of interest. However, conflicts can occur for other reasons, such as personal relationships, academic competition, and intellectual passion.

Public trust in the peer review process and the credibility of published articles depend in part on how well conflict of interest is handled during writing, peer review, and editorial decision making. Bias can often be identified and eliminated by careful attention to the scientific methods and conclusions of the work. Financial relationships and their effects are less easily detected than other conflicts of interest. Participants in peer review and publication should disclose their conflicting interests, and the information should be made available so that others can judge their effects for

themselves. Because readers may be less able to detect bias in review articles and editorials than in reports of original research, some journals do not accept reviews and editorials from authors with a conflict of interest.

### ***Authors***

When they submit a manuscript, whether an article or letter, authors are responsible for recognizing and disclosing financial and other conflicts of interest that might bias their work. They should acknowledge in the manuscript all financial support for the work and other financial or personal connections to the work.

### ***Reviewers***

External peer reviewers should disclose to editors any conflicts of interest that could bias their opinions of the manuscript, and they should disqualify themselves from reviewing specific manuscripts if they believe it appropriate. The editors must be made aware of reviewers' conflicts of interest to interpret the reviews and judge for themselves whether the reviewer should be disqualified. Reviewers should not use knowledge of the work, before its publication, to further their own interests.

### ***Editors and Staff***

Editors who make final decisions about manuscripts should have no personal financial involvement in any of the issues they might judge. Other members of the editorial staff, if they participate in editorial decisions, should provide editors with a current description of their financial interests, as they might relate to editorial judgments, and disqualify themselves from any decisions where they have a conflict of interest. Published articles and letters should include a description of all financial support and any conflict of interest that, in the editors' judgment, readers should know about.

Editorial staff should not use for private gain the information gained through working with manuscripts. (*Approved 1993*)

## ***Advertising***

Most medical journals carry advertising, which generates income for their publishers, but advertising must not be allowed to influence editorial decisions. Editors must have full responsibility for advertising policy. Readers should be able to distinguish readily between advertising and editorial material. Juxtaposition of editorial and advertising material on the same products or subjects should be avoided, and advertising should not be sold on the condition that it will appear in the same issue as a particular article.

A journal should not be dominated by advertising, but editors should be careful about publishing advertisements from only one or two advertisers as readers may perceive that the editor has been influenced by these advertisers.

Journals should not carry advertisements for products that have proved to be seriously harmful to health—for example, tobacco. Editors should ensure that existing standards for advertisements are enforced or develop their own standards. Finally, editors should consider for publication

all criticisms of advertisements. (*Approved 1994*)

## Supplements

Supplements are collections of papers that deal with related issues or topics, are published as a separate issue of the journal or as a second part of a regular issue, and are usually funded by sources other than the journal publisher. Supplements can serve useful purposes: education, exchange of research information, ease of access to focused content, and improved cooperation between academic and corporate entities. Because of the funding sources, the content of supplements can reflect biases in choice of topics and viewpoints. Editors should therefore consider the following principles:

1. The journal editor must take full responsibility for policies, practices, and content of supplements. The journal editor must approve the appointment of any supplement editor and retain the authority to reject papers.
2. The sources of funding for the research, meeting, and publication should be clearly stated and prominently located in the supplement, preferable on each page. Whenever possible, funding should come from more than one sponsor.
3. Advertising in supplements should follow the same policies as the rest of the journal.
4. Editors should enable readers to distinguish readily between ordinary editorial pages and supplement pages.
5. Editing by the funding organization should not be permitted.
6. Journal editors and supplement editors should not accept personal favors or excessive compensation from sponsors of supplements.
7. Secondary publication in supplements should be clearly identified by citing the original paper. Redundant publication should be avoided. (*Approved 1994*)

## Selected Citations

### Current Edition of Uniform Requirements

Uniform requirements for manuscripts submitted to biomedical journals. International Committee of Medical Journal Editors. JAMA 1993 May 5;269:2282-6.

### Comments on Editions

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