Style Matters

Uniform requirements for manuscripts submitted to biomedical journals

International Committee of Medical Journal Editors

In the 12 years since they were first published the "Uniform requirements for manuscripts submitted to biomedical journals" (the Vancouver style) have proved popular with both authors and editors; over 400 journals have stated that they will consider manuscripts that conform to the requirements and we know that many more do so. The fourth edition, published here, incorporates recent amendments made by the group.

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 three of the journals early in 1979. The Vancouver group evolved into the International Committee of Medical Journal Editors. Over the years the group has revised the requirements slightly; this is the fourth edition.

Over 400 journals have agreed to receive manuscripts prepared in accordance with the requirements. It is important to emphasise what these requirements imply and what they do not.

Firstly, 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.)

Secondly, if authors prepare their manuscripts in the style specified in these requirements editors of the participating journals will not return manuscripts for changes in these details of style. Even so, manuscripts may be altered by journals to conform with details of their own publication styles.

Thirdly, 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". Nevertheless 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. Inquiries and comments from Central and North America about these requirements should be sent to the Editor, New England Journal of Medicine, 10 Shattuck Street, Boston, MA 02115, USA; those from other regions should be sent to the Editor, British Medical Journal, British Medical Association, Tavistock Square, London WC1H 9JR, United Kingdom. Note that these two journals provide secretariat services for the International Committee of Medical Journal Editors; they do not handle manuscripts intended for other journals. Papers intended for other journals should be sent directly to the offices of those journals.

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 x 173 mm (5 x 7 in) but no larger than 203 x 254 mm (8 x 10 in).

Submit the required number of copies of manuscript and figures (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.

Prior and duplicate publication

Most journals do not wish to consider for publication a paper on work that has already been reported in a published paper or is described in a paper submitted or accepted for publication elsewhere. This policy does not usually preclude consideration of a paper that has been rejected by another journal or of a complete report that follows publication of a preliminary report, usually in the form of an abstract. Nor does it prevent consideration of a paper that has been presented at a scientific meeting if not published in full in a proceedings or similar publication. Press reports of the meeting 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 prior or duplicate publication of the same or very similar work. Copies of such material should be included with the submitted paper to help the editor decide how to deal with the matter.

Multiple publication—that is, the publication more than once of the same study, irrespective of whether the wording is the same—is rarely justified. Secondary publication in another language is one possible justification, provided the following conditions are met.

(1) The editors of both journals concerned are fully informed; the editor concerned with secondary publication should 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 two weeks.

(3) The paper for secondary publication is written for a different group of readers and is not simply a translated version of the primary paper; an abbreviated version will often be sufficient.

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

(5) A footnote on the title page of the secondary version informs readers, peers, and documenting agencies that the
paper was edited, and is being published, for a national audience in parallel with the same data and interpretations. A suitable footnote might read as follows: “This article is based on a study first reported in the [title of journal, with full reference].”

Multiple publication other than as defined above is not acceptable to editors. If authors violate this rule they may expect appropriate editorial action to be taken.

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, to warn the public of health hazards.

Preparation of manuscript
Type the manuscript on white bond paper, 216 x 279 mm (8 1/2 x 11 in) or ISO A4 (212 x 297 mm), with margins of at least 25 mm (1 in). Type on only one side of the paper. Use double spacing throughout, including title page, abstract, text, acknowledgments, references, tables, and legends for illustrations. Begin each of the following sections on separate pages: title page, abstract and key words, text, acknowledgments, references, individual tables, and legends. Number pages consecutively, beginning with the title page. Type 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—whether financial or by nonfinancial support such as the use of research equipment, (h) a method of running head or foot 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 collection of data does not justify authorship. General supervision of the research group is also not sufficient for authorship. Any part of an article critical to its main conclusions must be the responsibility of at least one author.

A paper with corporate (collective) authorship must specify the key persons responsible for the article; others contributing to the work should be recognized separately (see Acknowledgments).

Editors may require authors to justify the assignment of authorship.

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

Below the abstract provide, and identify as such, three to 10 key words or short phrases that will assist indexers in cross indexing the article and may be published with the abstract.

<table>
<thead>
<tr>
<th>AUTHORSHIP</th>
<th>ABSTRACT AND KEY WORDS</th>
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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 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. Summarise the rationale for the study or observation. Give only strictly pertinent references, and do not review the subject extensively. Do not include data or conclusions from the work being reported.

Methods—Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer’s name and address in parentheses), and procedures. Give 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) or with the Helsinki Declaration of 1975, as revised in 1983. Do not use patents as a basis for choosing the methods or materials.

All methods should be described in 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 randomisation. Describe the methods of analysis, 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 describing the methods in papers in which the designs or methods were originally reported. Specify any general use computer programs used. Put general descriptions of methods in the methods section. When data are summarised in the results section specify the statistical methods used to analyse 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 random sample, “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; emphasise or summarise only important observations.

Discussion—Emphasise the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail information or conclusions 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
Examples of correct forms of references

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

As an option, if a journal carries continuous pagination throughout a volume the month and issue number may be omitted.


(2) Organization as author

(3) No author given

(4) Article in a foreign language

(5) Volume with supplement

(6) Issue with supplements

(7) Volume with part

(8) Issue with part

(9) Issue with no volume

(10) No issue or volume

(11) Publication in roman numerals

(12) Type of article indicated as needed


(13) Article containing retraction

(14) Article retracted

(15) Article containing comment

(16) Article commented on

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 illustration.

Use the style of the examples below, which are based on the format used by the US 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 for more information.

Books and other monographs

(18) Personal author

(19) Ed(s), compiler as author

(20) Organization as author and publisher

(21) Chapter in a book

(22) Conference proceedings

(23) Conference paper

(24) Scientific and technical report

(25) Dissertation

(26) Patent

Other published material

(27) Newspaper article

(28) Audiovisual

(29) Computer file

(30) Legal material

(31) Map
Scotland [topographic map]. Washington: National Geographic Society (US); 1981.

(32) Book of the Bible

(33) Dictionary and similar references

(34) Classical material

Unpublished material

(35) In press
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 among 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 in the box.

**Tables**

Each table should be 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 non-standard 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 back up 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**

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, radiographs, electron micrographs, and diagrams, use material send sharp, glossy black and white photographic prints, usually 127 x 173 mm (5 x 7 in) but no larger than 203 x 254 mm (8 x 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 submit 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 colour, ascertain whether the journal requires colour negatives, positive transparencies, or colour prints. Accompanying drawings marked to indicate the region to be reproduced may be useful to the editor. Some journals publish illustrations in colour only if the author pays for the extra cost.

**Legends for illustrations**

Type 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 in metric units (metre, kilogram, litre) or their decimal multiples.

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

All haematological 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 the 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, and that the requirements for authorship as previously stated in this document have been met, and, further, 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 colour illustrations.

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

**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 the New England Journal of Medicine, or the British Medical Journal. Citations of this document should be to one of the sources listed below.


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