

Style Matters

Uniform requirements for manuscripts submitted to biomedical journals

International Committee of Medical Journal Editors

In the nine years since it was first published the "Uniform requirements for manuscripts submitted to biomedical journals" (the Vancouver style) has proved popular with both authors and editors; over 300 journals have stated that they will consider manuscripts that conform to its requirements and we know that many more do so. The third edition, published here, incorporates more recent statements of the group, such as those on statistics and authorship, but otherwise includes only minor amendments.

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. At the October 1981 meeting the requirements were revised slightly and published in a second edition in 1982. Since then the group has issued several separate statements, and these have been incorporated into the main part of this, the third, edition.

Over 300 journals have agreed to receive manuscripts prepared in accordance with the initial, previously published, 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, 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 Edward J Huth, MD, *Annals of Internal Medicine*, 4200 Pine Street, Philadelphia, PA 19104, USA; those from other regions should be sent to Stephen Lock, MD, *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 127×173 mm (5×7 in) but no larger than 203×254 mm (8×10 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. 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.

Members of the committee are Edward J Huth (*Annals of Internal Medicine*), Kathleen King (*Medical Journal of Australia*), Stephen Lock (*British Medical Journal*), George D Lundberg (*Journal of the American Medical Association*), Ian Munro (*Lancet*), Magne Nylenna (*Tidsskrift for den Norske Laegeforening*), Roy Rada (*Index Medicus*), Arnold S Relman (*New England Journal of Medicine*), Povl Riis (*Journal of the Danish Medical Association, Danish Medical Bulletin*), Richard G Robinson (*New Zealand Medical Journal*), Bruce P Squires (*Canadian Medical Association Journal*), Ilkka Vartiovaara (*Finnish Medical Journal*), Malcolm S M Watts (*Western Journal of Medicine*)

Correspondence to: Dr E J Huth or Dr S P Lock.

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 a primary version based on 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, 216×279 mm (8½×11 in) or ISO A4 (212×297 mm), with margins of at least 25 mm (1 in). Type only on 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 righthand 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 footline 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. 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 recognised 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. 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. 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. 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 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) or with the Helsinki Declaration of 1975, as revised in 1983. Do not use patients' names, initials, or hospital numbers, especially in any 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 randomisation. 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 where 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 randomising 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, or both: 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 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 requirement) one or more statements should specify (a) contributions that need acknowledging but do not justify authorship, such as general support by a departmental chairman; (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," "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 illustration.

Use the style of the examples below, which are based on the formats 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 Indexed in Index Medicus*, published annually as a separate publication by the library and as a list in the January issue of *Index Medicus*; also see the list of journal titles and abbreviated titles at the end of this document.

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" (in parentheses). 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.

Journals

(1) *Standard journal article*—(List all authors when six or less; when seven or more, list only first three and add et al.)

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

(2) *Corporate author*

The Royal Marsden Hospital Bone-Marrow Transplantation Team. Failure of syngeneic bone-marrow graft without preconditioning in post-hepatitis marrow aplasia. *Lancet* 1977;ii:242-4.

(3) *No author given*

Anonymous. Coffee drinking and cancer of the pancreas [Editorial]. *Br Med J* 1981;283:628.

(4) *Journal supplement*

Mastri AR. Neuropathy of diabetic neurogenic bladder. *Ann Intern Med* 1980;92(2 Pt 2):316-8.

Frumin AM, Nussbaum J, Esposito M. Functional asplenia: demonstration of splenic activity by bone marrow scan [Abstract]. *Blood* 1979;54 (suppl 1):26a.

(5) *Journal paginated by issue*

Seaman WB. The case of the pancreatic pseudocyst. *Hosp Pract* 1981;16(Sep):24-5.

Books and other monographs

(6) *Personal author(s)*

Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response. 5th ed. New York: Harper and Row, 1974:406.

(7) *Editor, compiler, chairman as author*

Dausset J, Colombani J, eds. Histocompatibility testing 1972. Copenhagen: Munksgaard, 1973:12-8.

(8) *Chapter in a book*

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

(9) *Published proceedings paper*

DuPont B. Bone marrow transplantation in severe combined immunodeficiency with an unrelated MLC compatible donor. In: White HJ, Smith R, eds. Proceedings of the third annual meeting of the International Society for Experimental Hematology. Houston: International Society for Experimental Hematology, 1974:44-6.

(10) *Monograph in a series*

Hunninghake GW, Gadek JE, Szapiel SV, et al. The human alveolar macrophage. In: Harris CC, ed. Cultured human cells and tissues in biomedical research. New York: Academic Press, 1980:54-6. (Stoner GD, ed. Methods and perspectives in cell biology; vol 1.)

(11) *Agency publication*

Ranofsky AL. Surgical operations in short-stay hospitals: United States—1975. Hyattsville, Maryland: National Center for Health Statistics, 1978; DHEW publication no (PHS)78-1785. (Vital and health statistics; series 13; no 34.)

(12) *Dissertation or thesis*

Cairns RB. Infrared spectroscopic studies of solid oxygen [Dissertation]. Berkeley, California: University of California, 1965. 156 pp.

Other articles

(13) *Newspaper article*

Shaffer RA. Advances in chemistry are starting to unlock mysteries of the brain: discoveries could help cure alcoholism and insomnia, explain mental illness. How the messengers work. *Wall Street Journal* 1977 Aug 12:1 (col 1),10 (col 1).

(14) *Magazine article*

Rouche B. Annals of medicine: the Santa Claus culture. *The New Yorker* 1971 Sep 4:66-81.

TABLES

Type 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 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, and other material send sharp, glossy black and white photographic prints, usually 127×173 mm (5×7 in) but no larger than 203×254 mm (8×10 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 method of staining in photomicrographs.

Units of measurement

Measurements of length, height, weight, and volume should be reported 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. This must include (a) information on prior or duplicate publication or

submission elsewhere of any part of the work; (b) a statement of financial or other relationships that might lead to a conflict of interests; (c) a statement that the manuscript has been read and approved by all authors; 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

The journals listed below are those that notified the International Committee of Medical Journal Editors of their willingness to consider for publication manuscripts prepared in accordance with the guidance given in the second (1982) edition of the "Uniform requirements for the submission of manuscripts to biomedical journals." Their listing here does not imply that they endorse this present version (third) of the uniform requirements. The *Index Medicus* abbreviations for the journal titles are given in square brackets.

<i>Acta Medica Colombiana</i> [Acta Med Colomb]	<i>Archives of Ophthalmology</i> [Arch Ophthalmol]	<i>Chinese Journal of Anesthesiology</i> [Chin J Anesthesiol]
<i>Acta Orthopaedica Scandinavica</i> [Acta Orthop Scand]	<i>Archives of Otolaryngology—Head and Neck Surgery</i> [Arch Otolaryngol]	<i>Chinese Journal of Cardiovascular Disease</i> [Chin J Cardiovasc Dis]
<i>Acta Paediatrica Japonica</i> [Acta Paediatr Jpn Overseas]	<i>Archives of Pathology and Laboratory Medicine</i> [Arch Pathol Lab Med]	<i>Chinese Journal of Dermatology</i> [Chin J Dermatol]
<i>Acta Paediatrica Scandinavica</i> [Acta Paediatr Scand]	<i>Archives of Investigation Medicine</i> [Arch Invest Med [Mex]]	<i>Chinese Journal of Digestion</i> [Chin J Digestion]
<i>Acta Pharmacologica Sinica</i> [Acta Pharmacol Sin]	<i>Arizona Medicine</i> [Ariz Med]	<i>Chinese Journal of Endocrinology and Metabolism</i> [Chin J Endocrinol Metab]
<i>Actinox</i> [Actinox]	<i>Arteriosclerosis: A Journal of Vascular Biology and Thrombosis</i> [Arteriosclerosis]	<i>Chinese Journal of Epidemiology</i> [Chin J Epidemiol]
<i>AIDS: An International Bimonthly Journal</i> [AIDS]	<i>Australasian Journal of Dermatology</i> [Australas J Dermatol]	<i>Chinese Journal of Experimental Surgery</i> [Chin J Exp Surg]
<i>AJR: American Journal of Roentgenology</i> [AJR]	<i>Australian and New Zealand Journal of Medicine</i> [Aust NZ J Med]	<i>Chinese Journal of Geriatrics</i> [Chin J Geriatr]
<i>American Family Physician</i> [Am Fam Physician]	<i>Australian and New Zealand Journal of Ophthalmology</i> [Aust NZ J Ophthalmol]	<i>Chinese Journal of Hematology</i> [Chin J Hematol]
<i>American Journal of Cardiology</i> [Am J Cardiol]	<i>Australian and New Zealand Journal of Surgery</i> [Aust NZ J Surg]	<i>Chinese Journal of Hospital Administration</i> [Chin J Hosp Adm]
<i>American Journal of Clinical Nutrition</i> [Am J Clin Nutr]	<i>Australian Family Physician</i> [Aust Fam Physician]	<i>Chinese Journal of Industrial Hygiene and Occupational Disease</i> [Chin J Ind Hyg Occup Dis]
<i>American Journal of Diseases of Children</i> [Am J Dis Child]	<i>Australian Journal of Hospital Pharmacy</i> [Aust J Hosp Pharm]	<i>Chinese Journal of Infectious Diseases</i> [Chin J Infect Dis]
<i>American Journal of Emergency Medicine</i> [Am J Emerg Med]	<i>Australian Orthoptic Journal</i> [Aust Orthopt J]	<i>Chinese Journal of Internal Medicine</i> [Chin J Intern Med]
<i>American Journal of Epidemiology</i> [Am J Epidemiol]	<i>Australian Paediatric Journal</i> [Aust Paediatr J]	<i>Chinese Journal of Medical History</i> [Chin J Med Hist]
<i>American Journal of Hospital Pharmacy</i> [Am J Hosp Pharm]	<i>Bangladesh Journal of Child Health</i> [Bangladesh J Child Health]	<i>Chinese Journal of Medical Laboratory Technology</i> [Chin J Med Lab Technol]
<i>American Journal of Human Genetics</i> [Am J Hum Genet]	<i>Bibliothek für Lager</i> [Bibl Lager]	<i>Chinese Journal of Microbiology and Immunology</i> [Chin J Microbiol Immunol]
<i>American Journal of Medicine</i> [Am J Med]	<i>Boletín de la Asociación Médica de Puerto Rico</i> [Bol Asoc Med PR]	<i>Chinese Journal of Nephrology</i> [Chin J Nephrol]
<i>American Journal of Obstetrics and Gynecology</i> [Am J Obstet Gynecol]	<i>Boletín Médico del Hospital Infantil de México</i> [Bol Med Hosp Infant Mex]	<i>Chinese Journal of Neurology and Psychiatry</i> [Chin J Neurol Psychiatr]
<i>American Journal of Optometry and Physiological Optics</i> [Am J Optom Physiol Opt]	<i>Bordeaux Medical</i> [Bord Med]	<i>Chinese Journal of Neurosurgery</i> [Chin J Neurosurg]
<i>American Journal of Pathology</i> [Am J Pathol]	<i>Brain and Development</i> [Brain Dev]	<i>Chinese Journal of Nuclear Medicine</i> [Chin J Nucl Med]
<i>American Journal of Psychiatry</i> [Am J Psychiatry]	<i>British Dental Journal</i> [Br Dent J]	<i>Chinese Journal of Obstetrics and Gynecology</i> [Chin J Obstet Gynecol]
<i>American Journal of Public Health</i> [Am J Public Health]	<i>British Heart Journal</i> [Br Heart J]	<i>Chinese Journal of Oncology</i> [Chin J Oncol]
<i>American Journal of Surgery</i> [Am J Surg]	<i>British Homoeopathic Journal</i> [Br Homoeopath J]	<i>Chinese Journal of Ophthalmology</i> [Chin J Ophthalmol]
<i>American Review of Respiratory Disease</i> [Am Rev Respir Dis]	<i>British Journal of Anaesthesia</i> [Br J Anaesth]	<i>Chinese Journal of Organ Transplantation</i> [Chin J Organ Transplant]
<i>American Surgeon</i> [Am Surg]	<i>British Journal of Industrial Medicine</i> [Br J Ind Med]	<i>Chinese Journal of Orthopedics</i> [Chin J Orthop]
<i>Anaesthesia and Intensive Care</i> [Anaesth Intensive Care]	<i>British Journal of Occupational Therapy</i> [Br J Occup Ther]	<i>Chinese Journal of Otolaryngology</i> [Chin J Otolaryngol]
<i>Anesthesia and Analgesia</i> [Anesth Analg]	<i>British Journal of Ophthalmology</i> [Br J Ophthalmol]	<i>Chinese Journal of Pathology</i> [Chin J Pathol]
<i>Annals of Clinical Biochemistry</i> [Ann Clin Biochem]	<i>British Journal of Pain</i> [Br J Pain]	<i>Chinese Journal of Pediatric Surgery</i> [Chin J Pediatr Surg]
<i>Annals of Clinical and Laboratory Science</i> [Ann Clin Lab Sci]	<i>British Journal of Rheumatology</i> [Br J Rheumatol]	<i>Chinese Journal of Pediatrics</i> [Chin J Pediatr]
<i>Annals of Internal Medicine</i> [Ann Intern Med]	<i>British Journal of Surgery</i> [Br J Surg]	<i>Chinese Journal of Physical Medicine</i> [Chin J Phys Med]
<i>Annals of Otolaryngology, Rhinology and Laryngology</i> [Ann Otol Rhinol Laryngol]	<i>British Medical Bulletin</i> [Br Med Bull]	<i>Chinese Journal of Physical Therapy</i> [Chin J Phys Ther]
<i>Annals of the Rheumatic Diseases</i> [Ann Rheum Dis]	<i>British Osteopathic Journal</i> [Br Osteopath J]	<i>Chinese Journal of Plastic Surgery and Burns</i> [Chin J Plast Surg Burn]
<i>Annals of the Royal College of Physicians and Surgeons of Canada</i> [Ann R Coll Physicians Surg Can]	<i>Bulletin of the Medical Library Association</i> [Bull Med Lib Assoc]	<i>Chinese Journal of Preventive Medicine</i> [Chin J Prev Med]
<i>Annals of the Royal College of Surgeons of England</i> [Ann R Coll Surg Engl]	<i>Bulletin of the World Health Organization</i> [Bull WHO]	<i>Chinese Journal of Radiological Medicine and Protection</i> [Chin J Radiol Med]
<i>Annals of Surgery</i> [Ann Surg]	<i>Canadian Family Physician</i> [Can Fam Physician]	<i>Chinese Journal of Radiology</i> [Chin J Radiol]
<i>Annals of Thoracic Surgery</i> [Ann Thorac Surg]	<i>Canadian Journal of Anaesthesia</i> [Can J Anaesth]	<i>Chinese Journal of Stomatology</i> [Chin J Stomatol]
<i>Annals of Tropical Paediatrics</i> [Ann Trop Paediatr]	<i>Canadian Journal of Comparative Medicine</i> [Can J Comp Med]	<i>Chinese Journal of Surgery</i> [Chin J Surg]
<i>Archives of Dermatology</i> [Ann Dermatol]	<i>Canadian Journal of Public Health</i> [Can J Public Health]	<i>Chinese Journal of Tuberculosis and Respiratory Diseases</i> [Chin J Tuberc Respir Dis]
<i>Archives of Disease in Childhood</i> [Arch Dis Child]	<i>Canadian Journal of Surgery</i> [Can J Surg]	
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MATERIA NON MEDICA

Who's who

A parent and child come in to your consulting room. The relationship is obvious. A grown up daughter and an elderly parent enter. It's fairly clear what the relationship is. But what about two people of roughly the same age, be they old or young? Are they friends, brother and sister, cousins, neighbours, daughters, sons, or lovers?

Life can be difficult for the new GP. A straight inquiry as to the relationship—which would seem the obvious solution—can be seen as rude, if not stupid. Many lack the sophistication of realising that while we each of us can be very clear about who our companion is (we hope), a newcomer may not be.

After one has been in practice for some years the problems begin to resolve. The far reaching ramifications of relationships can be traced like the fading family tree of the royal succession from William the Conqueror (or was it Alfred?) to Elizabeth II on the back of my grandfather's lavatory door and you may be able to work out the connections from a chance remark about Uncle Raymond's sister in law.

On the other hand distinct distress not to say overt offence can be caused. If a doctor is expected to know a patient's diagnosis as well as his medical history how much more so should he know who people are. Especially if they're related—or not related—as the case may be.

Naturally over the years I've developed a few techniques. Rummaging through the notes as if the relevant envelope wasn't there gives you the chance to get up, go out, and hiss at the receptionist, "Who have I got?" Thankfully, she usually knows. And return with someone else's notes.

Or you can encourage them to talk a bit and thus hope to glean a hint of the relationship. But even that can be treacherous. One man in his 60s would call the poor old lady he brought in "Mother," which seemed reasonable enough. I picked up the cue and referred to her as his mother. An icy moment. She was his wife. Force of habit over the years with growing children had earned her the permanent title.

Another elderly pair I had assumed were married. She was always the

patient so I had no way of knowing until one day he asked for something for himself during her consultation. I asked for his notes over the phone, using her name. Another icy moment. After all those years of looking after her, with my intimate knowledge of her various conditions, I didn't even know this was her brother. They had both been married and since they had lost their respective spouses now lived happily together.

Mothers and daughters, sisters and sisters can be difficult, but there's less scope for disaster especially if you assume they're sisters. Such a suggestion if it's wrong can be taken as flattering.

But you need to beware of bachelor sons and mothers. Round these agricultural parts there seem to be several such pairs. I once got it dreadfully wrong. I assumed that the ruddy cheeked man (he could have been anywhere between 25 and 55) was the husband: not that unreasonable as they had the same name and showed that casual solicitude for each other of the married couple. He was awfully upset. I learnt later that the portly lady had vetoed all his attempts at courting over the years with all kinds of sanctions, including illness. Once again I was supposed to know. After all, they had seen a lot of me, particularly with those same illnesses over a long time, and I knew so much else about her. Except for that key fact.

I confess there's one family which even after ten years I haven't sorted out. They share a house and the same name. I can start from the top of the pyramid with the old grandparents but begin to get lost in the second generation and run hopelessly into the sand with the third. Lateral thinking is a literal advantage, but an interest in bloodstock, a dab of Debrett's genealogical skills, plus a combination of A L Rowse's and A Christie's talents are all called for. And don't forget the rapid recovery abilities of the comper: after all, it's a kind of dialogue and the show must go on.

Trees and pyramids: my metaphors are as mixed as are my attempts at unravelling the threads of relationships. Probably the moral is not to try to—make no assumptions at all and let it unroll itself in its own time. I think if a parent and child come into my consulting room and the relationship is obvious . . . no, there I go again.—RICHARD WESTCOTT, general practitioner, Devon.