The Uniform Requirements for Manuscripts Submitted to Biomedical Journals Recommended by the International Committee of Medical Journal Editors*

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Key words: format; medical journals; uniform requirements; writing

Abbreviations: ICMJE = International Committee of Medical Journal Editors; UR = Uniform Requirements

Background Information: From the Author’s Perspective

The Uniform Requirements (UR) have become the most important and widely accepted (by > 500 biomedical journals) guide to writing, publishing, and editing in international biomedical publications. UR are a compact, convenient, and essential tool for any would-be author in the field of medicine. This does not detract in any way from the importance of several mainstream reference works on medical writing, which are generally geared to providing information on specific points for authors or editors.

In 1978, the initial goal of the first meeting, in Vancouver, of the group that produced the UR was the establishment of guidelines for the development of formats for manuscripts for journal submission. The Vancouver group later evolved into the International Committee of Medical Journal Editors (ICMJE) and issued a number of editorial policy statements concerning publication-related ethical principles. The various ethical issue-related statements and the guidelines for manuscript submission were incorporated into a single text in the 2003 version of the UR, which are also named the Vancouver Style, after the city of their conception.

Initially, the main advantages, at least from the point of view of the author, have included the perception that since the UR format for an original research article is uniform and widely accepted, if an original research paper were totally rejected by one journal, it would need only a minimum of reworking before resubmission were possible to another journal. While this is in general true, it must also be stressed that over the years the UR have come to increasingly emphasize the concomitant importance of the instructions to authors of individual journals. Each journal has its own preferences in format and style that may follow the UR in spirit, but the UR allow each journal to customize various aspects of an article. For example, see the specific requirements for CHEST authors in the posted instructions (www.chestjournal.org).

While later episodes in this series will deal with some of the ethical considerations of publication, including overlapping or secondary publication, here we concentrate on the section on manuscript preparation and submission (section IV) of the new UR, with regard to how it can benefit potential authors. The following is an outline for convenient desktop use and reference. More details can be obtained from the total document, which can be accessed at www.icmje.org/.

Main Points to Consider

Format

The format encouraged for original research articles is Introduction, Materials and Methods, Results,
and Discussion. However, this format does not include several other important and integral parts of the article, including the Title Page, Abstract, Acknowledgments, and artwork (Figures and Tables, and their legends) and References.

**Individual Sections**

**Title Page:** The title page includes a concise, relevant title; authors’ full names, institutional affiliations, and highest degrees (final format up to journal); departments and institutions deserving recognition; disclaimers; corresponding authors; information concerning reprints; sources of support; running head; word counts (for main text only and for the abstract); and the number of Figures and Tables.

**Abstract and Key Words:** In this section, are the background for the study; purposes; procedures; main findings; and conclusions. Please remember the obvious fact that data in the abstract must be exactly the same as in the main text. For key words, which are used for cross-indexing, use terms from the medical subject headings list of Index Medicus. The May 2006 issue of *CHEST* will be publishing an article on abstract composition.

**Introduction:** The introduction is a brief, logical lead-in to the subject, hypothesis, and objectives.

**Methods:** In this section, we only include information available at the time of establishment of the study plan or protocol. Information obtained during the study should be placed in the Results section. Be sure to describe participants in detail, clearly indicating why and how the study was done. All technical information should be given in sufficient detail to allow third-party reproduction. For statistical analysis, it is important to allow referees and readers to check on the validity of instruments and outcomes; therefore, in addition to statistical outcomes, quantified data are also important.

**Results:** By making a logical combination of text, Tables, and Figures, present data understandably without repetition. Use appendices, especially in electronic formats, for substantial extra or supplementary material that, while important, may interrupt the flow of the message of the main text.

**Discussion:** State what is new and important in the study; in other words, the reason why the journal should publish your article. State limitations of the study and examine the implications of its results. Unless the article concentrates on medicoeconomic aspects, it is probably better to avoid general comments on cost-effectiveness.

**References:** The UR style is based largely on the ANSI style of the National Library of Medicine and recommends citation in the order of appearance in the text, with abbreviation of titles according to the style in Index Medicus. A later edition of *CHEST* will carry a fuller description of how to select, use, and cite references.

**Explication**

The unstated philosophy running through the UR is “the maximum amount of understandable information and viable scientific contribution in the minimum space.” A good way of alienating reviewers is to be verbose or repetitive or, worst of all, both. When looking at each of the sections described in the UR, one can see a recipe for economy of writing, yet overall ease of understanding, if done properly.

**Take-Home Lesson**

The UR constitute the input of some of the best medical editors in the world for more than a quarter century. When the ICMJE first met, word processors were unheard of and the burden of rewriting manuscripts by manual or electric typewriters was indeed heavy. Now the flow of information to recognized academic nodes that will confer some degree of authenticity on the article is increasing exponentially, and the guidelines generated by the ICMJE are all the more important in the submission and review of biomedical manuscripts. I hope this thumbnail outline of the background and essential needs for original research articles to be submitted to biomedical journals will be of help; all authors are encouraged to check the full text of the UR at www.icmje.org/.