

# Effective Medical Writing

Pointers to getting your article published

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## Preparing a manuscript for submission

### ABSTRACT

**Good manuscripts are sought by journals and publication marks the endpoint of a scientific research project. In preparing a manuscript for submission, the material should be organised into a structure that best showcases the author's material. The manuscript should be written in a style that transmits the author's message with clarity. The author's material should be matched to the most appropriate paper category and the target journal. Having the help of an experienced mentor is invaluable. Authors need to prepare the manuscript meticulously and exactly according to the journal's "Instructions to Authors".**

**Keywords: manuscript preparation, manuscript submission, medical writing, scientific paper**

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### INTRODUCTION

A good manuscript is one that is potentially publishable, and is able to communicate a clear and useful message to the readers of a particular journal. Ideally, this message should also be exciting and have an impact on clinical practice. From the editor's viewpoint, good manuscripts, when published, enhance the standing and reputation of a journal. From the author's viewpoint, publication marks the endpoint of a scientific project. Producing a bad manuscript will only delay or prevent publication of good scientific material. Points to consider in preparing a manuscript for submission to a scientific journal include organising the material into the appropriate scientific format, and where and how to submit the manuscript.

### ORGANISING YOUR MATERIAL

There is no substitute for good scientific material. Material that is not new, innovative, exciting or interesting is unlikely to get published in a reputable journal. Papers published in journals can almost always be classified into

one of a variety of categories. It is important for authors to be aware that each type of paper is specific in nature, serves a distinct purpose, and is hence judged by different criteria. Authors should therefore be clear about the type of paper that they are planning to write, and prepare the manuscript according to the prescribed guidelines for the specific type of paper. Authors must strive to submit the manuscript exactly according to a particular journal's "Instructions to Authors".

#### Box 1. Types of papers:

- Original article
- Review paper
- Case report
- Technical note
- Pictorial essay
- Commentary
- Editorial
- Letter to the editor
- Other categories
- Non-scientific material

Placing authors' material in a structured form facilitates communication between authors and readers. The basic structure of an original scientific paper can be summarised by the acronym, IMRAD (Box 2). Detailed instructions on how to organise the material into a formal structure may vary from journal to journal and differ among specific paper types, and can usually be found in the journal's "Instructions to Authors". For example, a review article does not follow the IMRAD structure, and typically consists of an unstructured abstract, introduction, subheadings to organise the topic in a logical manner, and a conclusion.

#### Box 2. IMRAD stands for:

- Introduction (What question was asked?)
- Methods (How was it studied?)
- Results (What was found?)
- And
- Discussion (What do the findings mean?)

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Clarity is a key characteristic of scientific writing. A good manuscript reflects the author's clear mind tackling a clearly-stated problem and producing clear conclusions. Contribution of new knowledge should be clearly highlighted. Style can be divided into house style and individual writing style. House style gives each particular journal its distinctive identity; it is recognisable from reading the journal and is defined in the journal's "Instructions to Authors". Careful attention should be paid to elements of house style such as spelling, capitalisation, units and, in particular, references.

The style of manuscript presentation (or readability) is more difficult to accomplish. Without the ability to communicate the material in an effective manner, the author's message may be lost. The reader must be able to clearly see the value of the article in relation to his clinical practice or area of research. The title needs to be attractive, the abstract concise yet informative, and the introduction brief and succinct. The methods section should be complete, specific and reproducible, the results section accurate and, if necessary, illustrated by tables and figures. The author's thoughts should be well organised so that the sentences and paragraphs are connected in a logical sequence. The reader should arrive at the same conclusions intended by the authors, during the reading of the paper.

Individual writing style is less easy to define, but there are some general principles that are worth remembering. These are: keep the manuscript short, write short sentences, use short instead of long words, avoid redundancy, avoid figures of speech, idiom or jargon, try to avoid passive sentences, take care with abbreviations, and be careful with modifying words and phrases. In summary, keep everything as short and simple as possible!

**Box 3. General principles for a good writing style in manuscript composition:**

- Keep the manuscript short.
- Write short and simple sentences.
- Use short words instead of long words.
- Avoid redundancy.
- Avoid figures of speech, idiom or jargon.
- Try to avoid passive sentences.
- Take care with abbreviations.
- Take care with modifying words and phrases.

Authors that are not proficient in the English language should get help, preferably professional help. It is always a good idea for authors to initially distance themselves from the recently-completed manuscript by either putting it aside for a period before reviewing it again or asking an experienced colleague to critique the manuscript, paying

particular attention to points he does not fully understand. All ambiguity should be rectified before the manuscript is submitted. There is no substitute for self-editing, revising, and yet repeated revising of the manuscript. A manuscript which is considered borderline in terms of material and/or impact, but is well-structured and clearly written may help tip the editor's decision towards "revision" rather than "rejection".

**WHERE TO SUBMIT**

When the manuscript is completed, the authors need to decide on where to submit the manuscript to. The aim is to get the manuscript published in the best possible journal in the shortest possible time. Many experienced authors will have a good idea of what will or will not be accepted in a particular journal. For less experienced authors, asking a mentor or adopting a systematic approach is suggested. A good mentor will be able to advise the budding author as to where and how to submit the manuscript. The mentor should ideally be an experienced author himself, with a proven track record in research and successful publications in international peer-reviewed journals, willing to supervise juniors, and is a recognised expert in his field of interest. Having a mentor will save the young author much time and hardship, shorten the learning curve, and perhaps most importantly, maintain and develop the author's interest in medical writing and publishing.

The potential target audience will read different types of periodicals including magazines, and local, regional and international journals. These journals may also cater for readers interested in paramedical topics or management, general medicine, clinical speciality or subspecialty. Generally, specialists will aim to get their best work published in peer-reviewed general speciality journals that are highly-regarded and are read by a large number of fellow specialists internationally. Speciality and subspeciality journals often have clinical, technical or research slants. Many journals do not or are reluctant to publish case reports, while some only publish invited review articles, e.g. the Clinics of North America or Seminars series. Therefore, authors need to be aware of the types of articles that are published in journals that they are targeting.

If there is an important message that needs to be transmitted to a general audience, then the specialist author may consider submission to a general medical journal. Subspecialists may also consider sending their manuscripts to journals of other clinical specialities as an alternative. The latter may be a suitable venue for transmitting information about different aspects of a specific clinical problem or disease. A regional or local journal is often a

suitable venue for the first few manuscripts prepared by a young author. This venue is also appropriate for certain types of material that are particularly pertinent to a regional or local audience. Publication of the local experience, including leading review articles and editorials, have an important role in influencing how medicine is practised in a particular community.

When first submitting his manuscript to the journal of choice, the author should consider planning ahead and consider the “fall-back” plan, taking into consideration the possibility that the initial submission may not be accepted. One should bear in mind that certain journals may use the same pool of reviewers, particularly for certain specialised topics.

### HOW TO SUBMIT

After the audience is identified, the author should familiarise himself with the target journal. Look through several recent issues of the journal. Pay attention to the type of articles, and try to get a “feel” for the overall style and philosophy. Read the mission statement of the journal carefully. If the journal is affiliated to a society, information about the journal may appear in the annual report, which may provide useful information about acceptance rates and manuscript processing times. Background checks may be made about the journal’s impact factor, and whether or not it is listed in Index Medicus. The author’s institution may have a certain criteria to fulfil or a list of recognised journals.

Knowledge about the review process is helpful prior to and during manuscript preparation. The authors should try to understand the role of the reviewer, the various steps during the review process, and the components of a manuscript review. Manuscript deficiencies may be prospectively corrected if the author is aware of how the reviewer will assess the manuscript. Before manuscript submission, the author should try to have it looked through again with “fresh” eyes, in a critical manner by an expert colleague if possible. Most journals will not reconsider resubmission of manuscripts that have been previously rejected. There is no substitution for repeated revisions. In general, shorter is better. It is particularly important for the author to know what the editor looks for on receipt of a manuscript. The manuscript should be prepared meticulously, in exact

accordance with a particular journal’s “Instructions to Authors”. Although there is a standard way of assembling a manuscript, numerous variations exist among different journals. Particular care should be paid to the manuscript layout, references and illustrations. Attention to detail is vital and cannot be emphasised enough.

The author should retain a complete copy of the submitted manuscript. All data and records of individual patients, especially the images, should be carefully kept as it may be necessary to re-analyse the original data and obtain additional images during manuscript revision. For hard copy submissions, the manuscript and prints should be packaged to minimise damage and sent to the journal by a reliable means such as registered post or courier; if an acknowledgement is not received within one month of submission, the author should follow up with the journal office. With the advent of online manuscript submission systems employed by many journals nowadays, submitting and processing a manuscript, and tracking its progress, have become less tedious and more speedy.

### SUMMARY

A well-prepared manuscript conveys the authors’ research findings in a logical manner such that the reader arrives at the same conclusions as the author. It should be constructed in the format that best showcases the authors’ material and written in a style that transmits the message with clarity. A systematic approach of matching the author’s material and type of manuscript to the audience (readers and journal) is advocated. Having the help of an experienced mentor is invaluable in deciding where and how to submit a manuscript. Meticulous detail to manuscript preparation is emphasised.

#### Box 4. Take home points:

1. Structure your material into a scientific format.
2. Organise your material according to the appropriate article category.
3. Aim for clarity in transmitting your message to the audience.
4. Match your material to the audience (i.e. journal).
5. Follow exactly the journal’s “Introductions to Authors”.

#### Further reading:

- Peh WCG, Ng KH. Basic structure and types of scientific papers. Singapore Med J 2008; 49:522-5.
- Peh WCG, Ng KH. Writing the introduction. Singapore Med J 2008; 49:756-8.
- Ng KH, Peh WCG. Writing the materials and methods. Singapore Med J 2008; 49:856-9.
- Ng KH, Peh WCG. Writing the results. Singapore Med J 2008; 49:967-9.
- Ng KH, Peh WCG. Writing the discussion. Singapore Med J 2009; 50:458-61.

**SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME**  
**Multiple Choice Questions (Code SMJ 200908A)**

- |  | True                     | False                    |
|--|--------------------------|--------------------------|
| <b>Question 1.</b> Regarding the structure of a manuscript:                                    |                          |                          |
| 1. In writing a scientific paper, adhering to a formal structure is optional.                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. The IMRAD structure is recommended for original papers.                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The IMRAD structure is recommended for review articles.                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. The journal's "Instructions to Authors" provide useful information.                         | <input type="checkbox"/> | <input type="checkbox"/> |
| <br>   |                          |                          |
| <b>Question 2.</b> The following statements about style are true:                              |                          |                          |
| 1. The journal house style is the same as the individual writing style.                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Where possible, long sentences should be used.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. It is better to use long words rather than short words.                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Jargon should be avoided.   | <input type="checkbox"/> | <input type="checkbox"/> |
| <br>   |                          |                          |
| <b>Question 3.</b> Regarding manuscript preparation:   |                          |                          |
| 1. Authors who are not proficient in English should get help from a professional writer.       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. It is unacceptable to ask an experienced colleague to critique your manuscript.             | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Repeated self-editing and revisions of the manuscript are recommended.                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. It is good practice to rectify all ambiguity before manuscript submission.                  | <input type="checkbox"/> | <input type="checkbox"/> |
| <br>   |                          |                          |
| <b>Question 4.</b> The following statements about manuscript submission to journals are true:  |                          |                          |
| 1. The authors should aim to match their material to the most appropriate journal.             | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Certain journals publish only review articles.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Specialists should not submit to general medical journals.                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. In the modern world, there is no role for regional journals.                                | <input type="checkbox"/> | <input type="checkbox"/> |
| <br>   |                          |                          |
| <b>Question 5.</b> The following statements regarding manuscript submission are true:          |                          |                          |
| 1. Knowing the peer review process is useful.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Authors should keep a complete set of the submitted manuscript.                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Authors should not expect an acknowledgement of manuscript receipt from the journal office. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Online manuscript submission systems are increasingly being employed by medical journals.   | <input type="checkbox"/> | <input type="checkbox"/> |

**Doctor's particulars:**

Name in full: \_\_\_\_\_

MCR number: \_\_\_\_\_ Specialty: \_\_\_\_\_

Email address: \_\_\_\_\_

**SUBMISSION INSTRUCTIONS:**

(1) Log on at the SMJ website: <http://www.sma.org.sg/cme/smj> and select the appropriate set of questions. (2) Select your answers and provide your name, email address and MCR number. Click on "Submit answers" to submit.

**RESULTS:**

(1) Answers will be published in the SMJ September 2009 issue. (2) The MCR numbers of successful candidates will be posted online at [www.sma.org.sg/cme/smj](http://www.sma.org.sg/cme/smj) by 15 October 2009. (3) All online submissions will receive an automatic email acknowledgment. (4) Passing mark is 60%. No mark will be deducted for incorrect answers. (5) The SMJ editorial office will submit the list of successful candidates to the Singapore Medical Council.

**Deadline for submission: (August 2009 SMJ 3B CME programme): 12 noon, 7 October 2009.**