CME Article

Effective Medical Writing

Pointers to getting your article published

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Writing a technical note

ABSTRACT

A technical note is a short article giving a brief description of a specific development, technique or procedure, or it may describe a modification of an existing technique, procedure or device applicable to medicine. The technique, procedure or device described should have practical value and should contribute to clinical diagnosis or management. It could also present a software tool, or an experimental or computational method. Technical notes are variously referred to as technical innovations or technical developments. The main criteria for publication will be the novelty of concepts involved, the validity of the technique and its potential for clinical applications.

Keywords: medical writing, scientific paper, technical development, technical innovation, technical note

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INTRODUCTION

A technical note is a short article which briefly describes a specific development, technique or procedure. It may also refer to the modification of a technique, procedure or device applicable to medicine. Technical notes could also present a software tool, or an experimental or computational method. The technique or method described may either be completely new, or may offer an improved version of an existing technique. It should describe a demonstrable advancement on what is currently available. The technique should be well-tested and should preferably provide a solution to a clinical problem and have some demonstrable practical values.

As a technical note is one of the many types of papers that are published in medical journals, authors need to be aware of the specific requirements for submitting this article type. Not all journals publish this category of article. Whether technical notes are published in a particular journal will depend on the mission of that journal and the vision of its editor. Similar to all other manuscript types, the submitted manuscript for a technical note should also be constructed exactly according to the prescribed guidelines set by the target journal, which can usually be found in the journal's Instructions to Authors.[1] Authors should note that the main criteria for publication are the novelty of concepts involved, the validity of the technique and its potential for clinical applications.

Various journals have different names for technical notes. Some journals may refer to them as technical innovations or technical developments. For example, in some opthalmology journals, technical notes are known as innovations, where manuscripts submitted in this category should describe innovative techniques in any field of ophthalmology, including ophthalmic surgery, drugs, optics and devices. Any relevant preclinical and clinical data should be included.

In some imaging journals, technical notes are known as technical developments. This is a brief description of new imaging techniques, procedures or equipment. These studies are commonly exploratory feasibility studies.

STRUCTURE OF A TECHNICAL NOTE

The structure of a technical note generally follows that of a generic scientific paper. Technical notes should consist of the following headings: short abstract (structured or unstructured), brief introduction, methods, results and discussion. The methods and results sections may be combined under the heading of "technique". The maximum number of words, as well as figures and tables, are usually specified in the target journal's Instructions to Authors.

Box 1. Structure of a technical note:

- Abstract (structured or unstructured)
- Introduction
- Methods and results (separate or combined)
- Discussion
- Acknowledgements (optional)
- References

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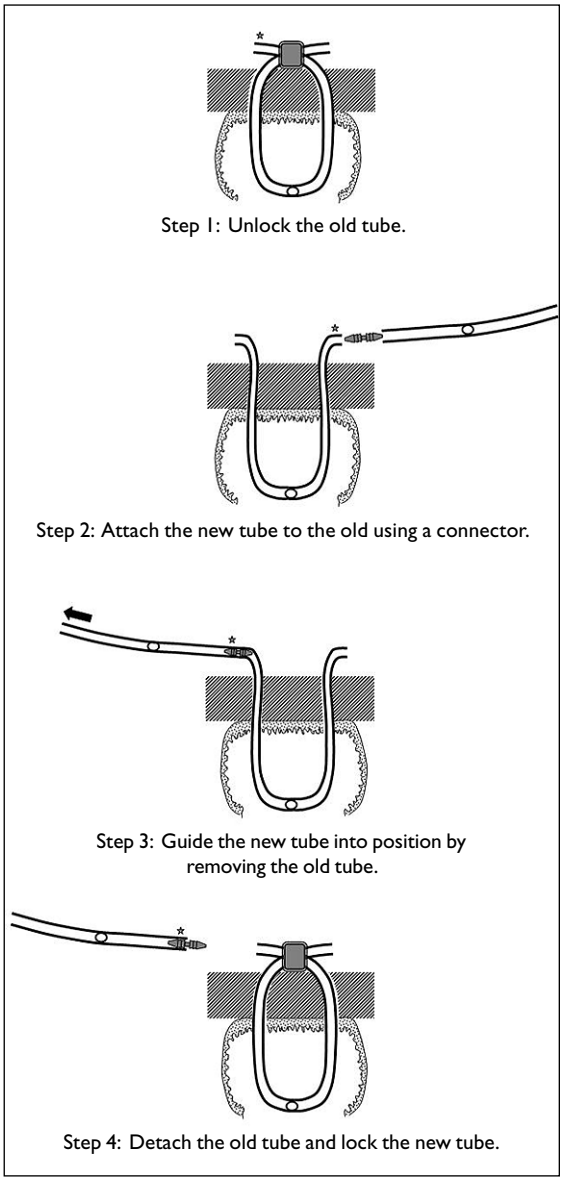
The title should accurately and succinctly describe the innovation, and be sufficiently informative to arouse the interest of the readers. Some examples of technical note titles are:

- Improving accuracy of total knee component cementation: description of a simple technique
- Z-suture: a new knotless technique for transscleral suture fixation of intraocular implants
- Treatment of chronic lateral ankle instability: a modified broström technique using three suture anchors
- Development of a randomised contrast detail digital phantom for observer detectability study
- Stapled haemorrhoidectomy or Longo's procedure? Two totally different concepts
- A new feeding tube which is secure and easy to change

The abstract can be either structured or unstructured. Abstracts for technical notes are generally shorter than that for original research articles. Each journal will usually specify the maximum number of words required, and these may range from 100 to 250 words.

The introduction section should be brief, and provide the background information leading to the innovation or development. If the paper is about a new piece of equipment, a brief explanation of the features, function and performance should be provided. If it is about a modification of an equipment, the reasons for the enhancement and the demonstrated advantage produced over the original version of the equipment should be provided.

The methods section should contain all the technical details necessary to allow others to replicate the technique or procedure. It should systematically describe what was done, how it was done, how the data was collected, and how it was tested. The methods, instrumentation (trade names, manufacturer's name and location in parenthesis), and procedures should be provided in sufficient detail to allow other workers to reproduce the study. It should state the manner in which the technique or procedure was evaluated, provide specific descriptions of experimental materials and methods, as well as make references to established methods, and where applicable, provide current information on the availability of materials. Some materials may not be commercially available, e.g. materials distributed by the author or some other non-commercial sources, such as a research laboratory. Details on the equipment used (with specifications, if appropriate) and the supplier(s) should be identified, including detailed descriptions on any modifications made to the equipment or any equipment that was constructed specifically for the study. Ilustrations, such as block diagrams, schematics, photographs and line drawings, are commonly included. An example of how diagrams effectively illustrate a procedure is given below.



Reproduced from the technical note, "A new feeding tube which is secure and easy to change". Singapore Med J 2009; 50(7): 740-742.

The results section should report on the experimental findings, and the preliminary or partial research results. It is recommended that the findings be summarised in the text, and if appropriate, illustrated with figures and tables. Authors should present the data in the best possible mode which will clearly demonstrate the results obtained, either in the form of a table or figure (such as graphs). Appropriate statistical analysis may be necessary in some studies and should be reported here.

The discussion section in a technical note is more limited than that in an original research article. It serves to explain the function and performance of the technique. It should be short and confined to the specific message. In this section, any limitations or shortcomings of the innovation or technique should be stated. The value and contribution of the technique to clinical diagnosis or management should also be highlighted.

An acknowledgement section is optional, and includes items such as help received from technicians who do not justify authorship, or sources of funding. Authorship should be restricted to those who have made substantial intellectual contribution to the manuscript and/or those who have participated sufficiently in the design, construction and testing of the procedure or equipment to take public responsibility. A statement of consent from the patient/s, or an anonymous acknowledgement of the patient/s on whom the technique or equipment was tested, may be placed in this section. The number of references should be limited, depending on the requirements of the target journal, but these tend to be limited to only those that are directly relevant.

Box 2. Common problems with technical notes:

- Excessively long manuscript.
- Too many details given.
- Too many references.
- No demonstrable advantage or advancement on techniques or devices already available.
- No proof of practical value.

SUMMARY

A technical note is a type of article that describes a specific technique or procedure, a modification of an existing technique, or a new equipment applicable to medicine. This type of article also covers technical innovations and developments. The technique should be well-tested and should preferably have some practical value in the clinical setting. Most importantly, a technical note should be written concisely and clearly.

Box 3. Take home points:

1. A technical note should be concise and clear.
2. The paper should describe an innovation or new development applicable to medicine.
3. The technique, procedure or device described should have practical value and contribute to clinical diagnosis or management.

REFERENCE

1. Peh WCG, Ng KH. Basic structure and types of scientific papers. Singapore Med J 2008; 49:522-5.

SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME
Multiple Choice Questions (Code SMJ 201002A)

	True	False
Question 1. A technical note describes:		
(a) A specific technique.	☐	☐
(b) A modification of an existing technique.	☐	☐
(c) A development of a new device.	☐	☐
(d) A clinical trial using the technique developed.	☐	☐
Question 2. The structure of a technical note includes:		
(a) A lengthy introduction.	☐	☐
(b) A discussion section.	☐	☐
(c) A succinct title.	☐	☐
(d) Numerous tables and graphs.	☐	☐
Question 3. The following statements about technical notes are correct:		
(a) They should be concise and clear.	☐	☐
(b) They are found in every medical journal.	☐	☐
(c) They provide a history of the evolution of the technique.	☐	☐
(d) The manuscript should be constructed exactly according to the target journal's Instructions to Authors.	☐	☐
Question 4. The following are common problems with technical notes:		
(a) An excessively long manuscript.	☐	☐
(b) There is no proof of the practical value of the technique.	☐	☐
(c) A short list of relevant references is provided.	☐	☐
(d) No demonstrable advantage over an existing technique.	☐	☐
Question 5. The main criteria for publication of technical notes include:		
(a) The novelty of the concepts involved.	☐	☐
(b) The validity of the technique.	☐	☐
(c) The number of cases reported.	☐	☐
(d) The potential for clinical applications.	☐	☐

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 April 2010 issue. (2) The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj by 7 May 2010. (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: (February 2010 SMJ 3B CME programme): 12 noon, 30 April 2010.