

Methodology Matters

Writing for publication – a guide for new authors

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Abstract

Health care practitioners who are inexperienced in writing for publication are sometimes daunted by the publication process and fail to submit their work on quality improvement to a journal. New authors can acquire experience in writing a paper by working through a systematic thought process that includes consideration of what journal readers and editors want and if the work is ready for publication. The most important part of writing a paper is to think through the key ideas and messages for readers and then to organize the ideas into a logical structure. Writing clear answers to 10 key questions may be one way to start the process.

Keywords: first-time author, publishing, writing an article, writing for publication

Why publish?

Achieving and maintaining substantial improvements in the quality of health care services remains a major challenge in health care systems throughout the world [1]. Those concerned with the provision of health care services need to work together to learn how to achieve major improvements. Traditionally, journals have published the work of researchers in their specialist subject. The aim of the journals was to communicate new knowledge to others researching and practicing in that specialist field. Published authors tended to be experienced researchers often working in academic centres.

The specialist field of quality of health care services is relatively new. Substantial research in the field has been carried out primarily over the last 30 years. A relatively small number of academic researchers have concentrated in this field. However, health care professionals throughout the world have carried out formal and informal studies of quality of care. In addition, over the last 25 years, specialist health care quality professionals have been appointed to facilitate this work in health care organizations in a number of countries. Individual clinicians, groups of clinicians and health care quality staff have acquired considerable pragmatic knowledge and experience about what does and does not work in improving quality. Much of this work remains unpublished and the lessons learned unshared with others.

Health care practitioners who measure and improve quality in their own organizations, as well as researchers who are applying ideas in new cultural settings, often fail to submit their work for publication. They may feel that it takes time to write for publication and the process itself is daunting. However, these individuals should be encouraged to become new journal authors to facilitate rapid learning about successes and failures in implementing improvements in clinical practice throughout the world.

There are specific benefits of writing for publication that usually justify the extra work involved. Such benefits can include the following:

- (i) Any lessons learned about improving practice will be useful to people working in other organizations or in other countries;
- (ii) Others can review the work and provide helpful feedback or suggestions to the author;
- (iii) The work may result in changing others' practice or at least suggest areas for further development or debate;
- (iv) A network of people who are interested in the same subjects or methods or who are doing similar work can be established.

For new authors, the experience of writing for publication is valuable for professional and career development.

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What readers and editors want

If you are a first-time author, you need to consider what it might take to get journal readers interested in a paper. Before you start to write, have your target readers in mind. Start by thinking clearly who will be primary and secondary readers of the work and how they might benefit from learning about your work. Consider the following questions:

- (i) Who are likely to be the main readers of a paper on this work?
- (ii) Who else might read the paper?
- (iii) What is likely to be the background of the main readers and other potential readers? What are the readers' jobs?
- (iv) What will interest the readers in the paper? What is the main point of interest to the likely readers?
- (v) How much experience are the readers likely to have with the subject?
- (vi) Are the readers likely to be familiar with the situation or circumstances being described in the paper?
- (vii) Why do the readers need to read the paper? From the author's point of view, what is to be learned from the paper?
- (viii) What do you want readers to do as a result of reading the paper?

Most readers will want details about an author's work. They will want to know why you carried out the work, an overview of the previous research on the subject, the approach and methods used, the findings and their interpretation and the conclusions.

An editor wants everything that readers want and more. An editor wants to publish papers that interest and excite the journal's readers, that are important to advancing knowledge in the field and that spark new ideas for work in the field. An editor also wants papers that are consistent with both the journal's aims and Instructions for Authors and that are well written. (See the Instructions for Authors in the end pages of this issue of the Journal [2].) Finally, an editor wants to publish papers that give a true and accurate picture of the work undertaken.

Is the work suitable for publication?

There are two stages at which you should consider whether your work is suitable for publication; before starting to prepare the paper and before submitting it to a journal.

Before starting to prepare a paper

First-time authors sometimes think that their work is on a 'common' subject so it won't be important to a journal. But common subjects affect many patients so new knowledge of what works to improve a routine health care service will be of interest to others. Also, sometimes practitioners think that because the work did not go 'perfectly', it will not be good enough for publication. Again, people working in other

organizations may benefit from learning about the problems experienced and how they were overcome.

Nonetheless, before taking the time to draft a paper for publication, new authors should ask certain questions about their work. Is the subject of the work important to patients? Is the subject specific and clearly enough defined that others will understand it? Are there specific, clearly defined objectives for the work that others will readily understand? Have you researched the literature on the subject and prepared a short summary? Whichever approach you have used, original research or implementation of a quality improvement method, have you carried out the work properly? Do you have findings to present, preferably before-and-after measurement data for a quality improvement approach? Have you used the right ways to analyse and interpret the findings? Has anything happened as a result of your work, that is, were any actions taken? Did you learn anything that would be of interest to people working elsewhere?

Before submitting the paper to a journal

After you have prepared the paper for submission, consider these further questions before actually submitting the paper. Is the paper prepared in accordance with the journal's instructions? Is the paper logically organized? Is the paper well written? Are statistics presented in the paper appropriate and clearly presented [3,4]? Are there any ethics, confidentiality or competing interest issues involved in the work being described in the paper and have these issues been handled appropriately?

Re-read the journal's instructions for authors and ensure that your paper complies with all the instructions. Ask a colleague who has not been involved in the work to read the paper and then to list the four or five most important points in order. If the colleague's points are not the same as yours, or if they are not in the order you intended, review the organization of the paper and make it more logical to the reader.

A paper is well written if a reader who is not involved in the work can understand every single sentence in the paper. A colleague can help a new author by marking every idea or sentence that is not entirely clear. Do not submit the paper to a journal if the ideas in it are unclear to a colleague. The journal staff may reject the paper on grounds of poor quality or may ask you to clarify the ideas before formally considering the paper for publication.

Statistics presented in the paper will depend on the nature of the work. The statistical methods used and the findings need to be clearly explained. Check at least for the following: Are the participants in the study described completely? If a sample was used, is the way the sample was constructed described? Are the dates for data collection clear? Are any comparisons between findings clear? Are main findings presented in tables or figures? Are changes or differences reported for all measures used in the study? Are confidence intervals used to report change or differences? Are all observations accounted for in the report of the findings?

Many journals now publish statements about ethics [5], confidentiality or competing interests. First-time authors

should read the statements published by relevant journals before submitting a paper. The following are general points to consider:

- (i) Does the work reproduce or make extensive use of published material? If so, be sure to obtain written permission from the publisher to reproduce the material. Be sure that previous work reviewed or made use of is properly referenced.
- (ii) Is there any way in which individual patients could be identified in the paper? If so, revise the content to protect the identity of patients.
- (iii) Was patient or practitioner consent involved in any part of the work? If so, be sure to describe briefly the consent procedure.
- (iv) Could others conclude that any findings being presented constitute negligent care by the practitioners involved? If there is any uncertainty, consult with a responsible person in the organization.
- (v) Is there any relationship between the funding source for the work being described and the author or authors? If so, write a letter to the editor explaining the relationship.
- (vi) If the work has made use of commercial products or proprietary material, check with the editor about how reference to such products or material is to be made in the paper. Usually, editors will not publish endorsements of a commercial product or proprietary material.

How to get ready to write

Think about how you tend to get ready to prepare a report or paper. Generally, when people have to write a paper, they seem to have one of two work styles: gatherer or hunter. A 'gatherer' collects all available material that might be relevant to the paper, reads all the material gathered, sifts through and uses the material to organize ideas for the paper and then begins to write. Gathering behaviour is appropriate if you are writing a review or similar publication. It is the behaviour that students learn as part of their formal education. But gathering behaviour is not appropriate for all writing. Gatherer-type writers can make serious mistakes before they even begin to write such as being vague about the target readers for the paper, being unclear about its true purpose, being unsure about the key messages to be conveyed and not paying attention to the organization of the ideas to be presented.

More experienced writers tend to use the 'hunter' style of writing. They decide why the paper is needed. They are clear about whom they are writing for. They know the specifications their writing has to meet. They devise a strategy to respond to the specifications in the form of a brief outline. They gather only the material needed according to the outline. They get their ideas down quickly and test them for clarity. They organize their ideas logically to get across key messages to the readers. They can edit their own writing.

Define the work

To develop more efficient and effective writing behaviour, first set out the exact specifications for your paper. Clarify the following: the exact length in words or pages, the main parts of the paper that are required by the journal, and tables, figures or illustrations you might include. Convert the intended length of the paper into a measure you can easily relate to. For example, if you normally write on a computer, note the number of words that will fit on a typical text page. If you are writing 3000 words, for example, you can estimate the number of text pages needed. If you normally write a paper by hand, note the number of words you write on a typical handwritten page. Also, estimate how long it takes you to write one page of text, assuming you have an outline to work to. If it takes 20 minutes to compose one page, for example, and there are about 300 words on each text page, creating the first draft of a 3000-word paper is going to take about 200 minutes or roughly three and a half hours.

Do the thinking

The most important work in preparing a paper is often the hardest: to think very clearly about exactly what you have to say. Don't start to write until you have finished thinking. Start by thinking about the answers to the key questions listed in Table 1.

Write one complete sentence, not just a short note, to answer each question. The 10 sentences you write make up the framework or outline for your paper. The sentences can become topic sentences for paragraphs or leading sentences for sections of the paper.

After you have written your 10 sentences, review each one. Check to see if the sentence is clear in its meaning. See if there are any words you can delete without losing any meaning. Consider if there is a simpler way to say the same thing. Revise your 10 sentences, if necessary, to make them as clear and understandable as possible. Add any ideas you may have left out. Finally, make a note of the single most important message you want to get across to readers.

Do the planning

When you have written 10 key sentences and have a clear understanding of your most important message, you are ready to organize your work into the main parts required by the journal and to develop a more detailed outline of the paper. The most common structure for research or improvement studies is provided in Table 2. To organize your paper, first decide where in the structure the 10 sentences you wrote will fit. Next, allocate an approximate number of words or pages to each part, making sure that the total number of words or pages will add up to the required total length. Test the flow of your ideas and your key messages. Decide where you have to further develop your ideas.

Consider where you can use tables or figures to get your key messages across to the reader. Papers that describe original research studies tend to use tables or figures to present statistical descriptions of a population or sample and

Table 1 Key questions to answer in order to identify key ideas and messages. Write a complete sentence that answers each of the questions

Why did I (or we) set out to do the work I am writing about, that is, what prompted me (or us) to do the work to begin with?

Why do I want to write about the work, that is, what do I want to achieve by writing about it?

What does available research, expert opinion or general literature say about this subject, if any research, opinion or literature is available?

What is the work setting like and what was happening in the work setting in relation to the subject I am writing about?

What work did I (or we) do, that is, what is the overall nature of the study or project?

How did I (or we) do the work, that is, what approaches or methods did I (or we) use?

What have I (or we) shown through what I (or we) did, that is, what is the major finding?

What have I (or we) learned by carrying out the work, that is, what is the most important lesson for others?

What did I (or we) do with what we learned, or what do I (or we) plan to do next?

What are the benefits of what I (or we) did for patients, practitioners, health care organizations, researchers, policy makers or others?

Table 2 Structure for a paper on a research or improvement study

Headings	Questions answered
Objective(s) and/or rationale	Why you did what you did and why you are writing about it
Background	What available research and/or expert opinion says
Context and setting	What was happening in your situation
Design and method(s)	Exactly what you did and how you did it
Findings of (initial) measurement	What you showed through what you did
Analysis (sometimes called discussion) and action	What you learned from the measurement and what you did about it, if anything
Findings of successive measurements (where appropriate)	What you showed through measuring again; how the action you took worked
Conclusion	Summary of the work including the benefits for others from what you learned

of findings. Studies that are about improving the quality of patient care can make use of other useful figures such as a process map or flow chart to show how a process of care has been modified or created, a run chart or control chart to show how variation in a process has been identified and a process has been brought into control, or a fishbone diagram to show analysis of the causes of a problem discovered through the study [6]. Prepare the tables and figures you are going to include in your paper.

Do the writing – and rewriting

Finally, use the results of your thinking and your planning to write a first draft of the paper. Use the key sentences as a guide to sections in the paper. Use the tables and figures as the focus for the text that describes your findings. There is a useful maxim for new authors: First get it down and then get it right. The speed with which you write the text is probably a reflection of how much practice you have had at writing. Writing is like any other skill. To do it fast and well, you have to practise.

There are several ways you can assess and improve the quality of the writing in your first draft. Find weighty words and phrases in your writing and replace them with simpler

words and phrases. For example, use ‘some’ not ‘a number of’, ‘now’ not ‘at the present time’ or ‘indicate’ not ‘give an indication of’. See if sentences of more than 20 words can be simplified or paragraphs of more than eight sentences can be shortened. Delete unnecessary punctuation, especially unnecessary commas, and replace jargon words. Run a check of the manuscript using the spelling and grammar checking systems in your word processing software. Use a ‘fog index’ to measure the readability of your writing. Fog indexes involve counting out a number of words in the text, say 100 words, and then calculating the average sentence length and the number of ‘hard words’ in that section of the text in order to obtain a readability score [7,8]. If your writing scores over ‘standard’ on a readability scale, simplify it.

How to prepare for the journal’s peer review process

After submitting your paper to a journal, expect the journal’s editorial staff to take some time to process your submission. During this time, they are deciding if your paper is consistent with the journal’s aims and Instructions to Authors, if it is of sufficient quality to merit publication and whether or not there are any special issues related to the paper such as

patient consent or potential competing interests and if they have been handled appropriately.

If your paper passes editorial screening on these criteria, the editor will forward the paper for peer review, i.e. for review by others working in the field who will advise the editor on its suitability for publication. Peer reviewers tend to flag parts of a paper where the structure or the meaning is not entirely clear or where the content is inconsistent with other research on the subject. The value of the peer review process is that it tends to improve the quality of papers published.

If the editor decides to invite the author to submit a revised version of the paper, the author will be asked to review and respond to the reviewers' comments and to let the Editor know what changes have been made to address these comments. The author will need to determine what was unclear or incomplete about the paper and rewrite those sections of the paper accordingly.

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