

The art and skill of medical writing

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Not too long ago, when I was a junior medical officer (JMO), my fellow at the time assigned a case report for me to write. It was about a patient with a rare complication [post-liver transplant](#). I diligently returned my first draft to him and we sat down one afternoon in the doctor's office to go through it. I can still remember my waning enthusiasm (and rising frustration) as the afternoon went on. By the end, there were more tracked changes on the document than my original text. Although no words were exchanged as such, I was thinking: "What is the difference in expressing things your way rather than mine? Didn't we both just make the same point more or less?" After two further rounds of editing we sent the (now fourth) draft to the senior author, a well-published consultant whom the patient belonged to. The feedback given to me was "You have done a fantastic job. Where did you learn to write so well?" It was at that moment when I realised that medical writing was a learned skill.

Why is medical writing important?

The market for post-residency jobs is becoming increasingly competitive. Consequently, a growing number of JMOs are conducting [research projects](#) and writing publications in the form of conference abstracts, case reports, original papers or review articles. What many do not realise is that medical writing is a specific skill which is not taught (well) in university or in post-vocational training. Unfortunately, the English used in your high school or university essays to get those high marks is not the same as that needed for scientific writing.

It would certainly be disappointing if your well-conducted research project and its interesting results are not equally well communicated to the rest of the scientific community. Although a well-written article may contain the same content as a mediocre one, it can be the difference between an accepted or rejected article by a journal. Beyond getting published, medical writing is also used when applying for ethics submissions and research grants in the future.

Many JMOs (myself included) make some common errors, which I will try to address below.

Tips for good medical writing

1. Read up

The best way to be a good medical writer is to read papers and see how other (already published) authors write. Start by conducting a literature review of other articles on your topic, preferably from the same journal you are aiming to publish in. This allows you to see how others have structured and phrased the points that you are about to write. For instance, if you're writing a/an:

- **Review article** - read other review articles on the same or similar topic. What headings and subheadings did they use to break up the review?
- **Original article** - read original articles on the same topic and original articles from the journal you are aiming for. Maybe you can set out your *Methods* sections in a similar way?
- **Case report** - read other case reports from the journal you are aiming for. How did they present the case?

2. Plan out what you are writing

It can be daunting to write a 2,000 or 3,000-word manuscript starting from a blank page.

Before you begin, plan out the structure of your article down to each individual paragraph. This is helpful no matter how big or small your article is. Where applicable, divide your article into sections such as *Introduction*, *Methods*, *Results*, *Discussion*, and *Conclusion*. Then create subheadings within these sections. For example, within the *Methods* section, you might have the following subheadings: *Study design and participants*, *Ethics*, *Clinical Assessment* and *Statistical analysis*. Similarly, you might divide your *Discussion* section into 4 paragraphs, each with an individual point. Although each heading or subheading may contain several paragraphs, each paragraph should ideally contain one main point. By doing this you have already achieved the following:

- Your article now has a clear structure with a logical flow. This makes it much easier to read in the end.
- It now seems much less daunting to chip away at your paper one small paragraph at a time (see point 4).
- You no longer have a blank page

3. Be precise and concise

Many junior doctors fill their manuscripts with long, verbose sentences. Where possible, avoid concatenating multiple phrases into one sentence with “and”, “that”, “which”, “however”, “;”, “-“, etc. When a sentence contains more than two segments, it becomes difficult to follow. You have lost nothing by making your point over two short sentences instead of one long fragmented sentence.

Try also to minimise the number of words used to express a certain point. Is there a better way of phrasing what you want to say? The thesaurus is particularly handy for this purpose. The thesaurus is also helpful to avoid the monotony of repeating the same phrases throughout your article.

For instance, instead of saying “We showed [finding x]” repeatedly, the thesaurus gives you the following options:

- We demonstrated [finding x]
- The patients exhibited [finding x]
- We were able to prove [finding x]
- We illustrated [finding x]
- Our study revealed that [finding x]

4. Be patient

It might take you thirty minutes to write two sentences and two hours to write one paragraph! The process of editing and re-editing until you find the perfect way of expressing what you want to say takes time. However, this extra time spent will pay off in the end.

Indeed, certain sections of a paper are more difficult to write than others. For example, the *Introduction* and *Discussion* sections generally require more thought, synthesis and creativity than the *Methods* or *Results* sections. Reserve your best periods of concentration for writing the hardest sections. I.e. If you are most productive in the morning, you should work on these sections during this time. Conversely, when you find yourself hitting the proverbial wall, skip to an easier section to work on. You will find this more fruitful than staring blankly at the screen or procrastinating.

5. Learn to reference properly

This section is often poorly done. Put in the effort to ensure your referencing is in the correct style, and consistent throughout. Referencing programs such as Endnote can be a significant help. Most journals usually prefer to use the Vancouver referencing style. (Visit <http://library.unimelb.edu.au/recite/vancouver>)

Similarly, comply with the other formatting requirements of the journal including font size, double spacing, page numbers, abbreviations etc. All these seemingly small (and often tedious) things help get the reviewer on side before they have even started reading your paper.

6. Proofread before sending out for review

There is nothing more frustrating than reviewing a paper with typographical, grammatical or referencing errors. It suggests the authors do not care enough to look over their work. It should be noted that your supervisors and journal reviewers have limited time. This time should be spent critiquing your work, not correcting your careless errors. Read and re-read your work before you send it out for peer review. This is not only helpful to prevent errors, but also helps you identify sentences or sections which do not read well and need rewriting (as per points 3 and 4). By the time a

manuscript is ready to send out, it should have been read and edited by you several times already.

A final word

I would like to finish off the same way I started – with an anecdote. A famous RPAH professor told me about the first article he had written as a junior doctor (during the typewriter era). He was amazed when it had been returned to him after only one day. When the professor asked his supervisor what he thought of his manuscript, his supervisor replied: “I didn’t manage to make it past the first page. You have set a new record for the number of that’s used on the first page of an article.”

The professor had not realised there was a problem with his writing. This anecdote highlights that medical writing is not a natural talent and even the best writers start off as beginners. However, just like any other skill, everyone can get better with practice.

Tags: #Endnote,#jobs,#junior medical officer,#MedEd,#medical research,#medical writing,#scientific writing,#tipsfornewdocs,#Vancouver referencing style