

Writing a Good Medical Paper

The journal Archives of Disease in Childhood celebrates its 100th anniversary this year. To mark the occasion, Mark Beattie one of its former editors, has written a reflective piece that includes very sound advice on how to write a good paper¹. The points that are made concur with our experiences at the IMJ.

In essence, the hallmarks of a well-constructed manuscript remain unchanged. Writing a paper is a steep learning curve for all medical trainees. It is critical to always work with an experienced senior author who acts as a leader of the author group. The paper should be clinically focused, and should add something new. It should be well-written and the messaging must be clear. Complex prose should be avoided. Avoid the passive voice. State 'we conducted this study' rather than 'a study was conducted'. All research must adhere to ethical standards. The New England Journal of Medicine, a publication with an impact factor exceeding 75, states that the results in the paper should lead to a change in clinical practice.

An effective title for the paper should be short and have approximately 10 words. The key words should be placed to the front of the title. Both question marks and exclamation marks should be avoided. Avoid waste words such as 'a study of' or 'observations on'. There is no need to put the name of the hospital or the institution in the title as it will appear in the authors' affiliations.

Most journals follow the time-honoured IMRaD format (introduction-methods-results-discussion). In the introduction, set the scene. State the problem and pose the research question. Avoid a long rambling introduction that fails to explain why the study was undertaken. The methods are the fundamental building block of the study and they must be capable of answering the research question that is being asked. The results need to be clear and it is important to check that the numbers add up. They must provide both the number and per cent in order to give clarity. Well-constructed tables and figures are helpful. The discussion should include an initial summary of the findings, interpretation in the context of previous studies, strengths and limitations, and the conclusion with implications for practice. It is important to include points about 'what is known', 'what this study adds', and 'implications for practice'.

The factors that frequently lead to the rejection of a paper are: a vague long title, an abstract that fails to include all the results, an introduction that fails to explain why the study was undertaken, confusing results with numbers that do not add up, a discussion that does not

concentrate on the papers findings, a small study with a vast army of authors, and references that are inaccurate.

Medical case reports are frequently submitted to journals for publication. The key qualities of a good one are the uniqueness of the case and its educational value; it should teach a new lesson. The learning points should be emphasised. On occasion, it will be the rare presentation of a common condition. However, rarity alone is not enough—the case must be making a point. Flow charts show the clinical course and management algorithms are helpful. Signed patient consent must be obtained². The consent must be obtained by a member of the team who knows the patient. Patient confidentiality is of the utmost importance. It is essential to remove exact dates, specific locations, and to use age ranges rather than an exact age. Ensure that the consultant responsible for the patient is involved in the report. A frequently encountered pitfall is that attached radiological images may inadvertently contain patient identifiers. In order to reduce this possibility, the IMJ insists that a radiologist must be a co-author of any paper that contains radiographic images. In summary, the common causes for rejection are a case that is too common, insufficient emphasis on the learning points, inadequate literature research, not obtaining proper patient consent, or the presence of potential identifiers.

Quality improvement (QI) projects are a good potential source of studies for trainees³. QI began over three decades ago in response hospital errors. QI is about teams making a combined effort to improve the health outcomes for patients, better healthcare systems, and improved learning. A simple writing structure should be used. The headings are aims, planned changes to be tested, predictions, summary of results, and run charts. The PDSA (plan, do, study, act) cycle is used. The RCPI offers diploma courses in QI.

The abstract is really important and it is the flagship of the paper. Summarize the paper in 150-250 words under the headings background-objectives-methods-results-conclusions. It is what the editors and the peer reviewers first read on receipt of a manuscript. If it is of poor quality, they may not go much further into the paper and rejection is more likely. In the increasing electronic era, with the large volume of clinical material and pressing time constraints, it is increasingly likely to be the only part of the paper that will be read. One needs to keep in mind that the ultimate measure of a paper's success is whether it is read, disseminated, and cited. For example, an impact factor of 1.0 means that a paper published 1-2 years ago has been cited on one occasion in another manuscript.

It is important that beginners do not become discouraged by the rejection of a paper. The criticism by a peer reviewer is directed only at the manuscript and is not personal. It happens to everybody especially in today's highly competitive publication environment. The best advice is to learn from the experience, study the feedback in detail, and be determined to do

better next time. Before submitting to another journal, it is advisable to address all the points that have been previously raised about the manuscript.

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Editor

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