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Getting published in anaesthesia journals: Guidance for anaesthesia investigators

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Purpose of document:

This document compiles practical advice and guidance from editors of the leading anaesthesia journals for early and mid-career academics aiming to get their research published. It draws from the 2025 ANZCA ASM workshop, and provides insights into the editorial perspective, understanding what editors seek in submissions to increase the likelihood of publication. This includes both the 'must have' elements as well as those things that make a manuscript stand out.

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Getting published in anaesthesia journals: Guidance for anaesthesia investigators

1. Introduction

This document compiles practical advice and guidance from editors of the leading anaesthesia journals for early and mid-career academics aiming to get their research published. It draws from the 2025 ANZCA ASM workshop "Meet the Editors: How to Get Published", and provides insights into the editorial perspective, understanding what editors seek in submissions to increase the likelihood of publication. This includes both the 'must have' elements as well as those things that make a manuscript stand out.

2. Key elements for getting published

- What are editors looking for?:
  - Clear and well-structured manuscripts, focusing on clarity, relevance, and internal validity.
  - Write concise, coherent papers that effectively communicate your findings without overstating conclusions.
- The importance of a clear research question:
  - The concept of "line of sight"- i.e. the ability to clearly trace the research question through each section of the manuscript.
  - A paper must maintain internal coherence, where the research question, methods, results, and conclusion are logically linked.
  - A common pitfall is the lack of a well-defined primary research question, which can render a manuscript unreadable.
  - If the research question is unclear, the manuscript lacks direction and impact.
- Structuring your manuscript:
  - The introduction should be concise, clearly stating the research question, its relevance, and the gap it aims to fill. Long, unfocused introductions are often a red flag.
  - Methods should be comprehensive and reproducible, detailing study design, statistical analysis, and sample size calculations. The statistical design must directly answer the primary research question.
- Data presentation and interpretation:
  - Results should be presented clearly, with an emphasis on the primary outcome rather than over-interpreting secondary results.
  - Editors favour visual data representations like tables and figures to enhance clarity.
  - The discussion should not simply restate the introduction or over-speculate on results. Instead, it should succinctly interpret the findings, placing them in context with existing literature.
- Common mistakes to avoid:
  - Presenting secondary outcomes as primary conclusions when primary results are not significant.
  - Overemphasising the clinical impact without robust supporting data.
  - Including excessive speculation or overly long discussions.

3. Critical evaluation of manuscripts

Handling editors focus on several key aspects when deciding whether to send a manuscript out for peer review.

It is essential to be able to clearly identify the type of manuscript – i.e. is it a systematic review, meta-analysis, Randomised Controlled Trial (RCT), or observational cohort study? The clarity of the manuscript type influences its evaluation.

- Introduction quality:
    - The introduction must justify the research question based on previous data, identifying gaps in the literature.
    - Avoid introducing bias by selectively citing literature that supports the hypothesis while ignoring conflicting studies.
    - Clearly state what is known, where gaps exist, and why the study is essential.
- Methodological rigor:
    - Methods are the most crucial part of the manuscript. If the methods lack detail or coherence, the entire study's validity is compromised.
    - For systematic reviews, proper search criteria and librarian involvement are essential. Any gaps in search criteria that omit relevant research weaken the review's credibility.
    - Clinical trial registration details must match between the manuscript and the registry entry, a common inconsistency found during manuscript evaluation.
- Outcome definition and population clarity:
    - Clearly define the primary and secondary outcomes. Ambiguity in outcome measurement can reduce the study's impact.
    - Adequately describe the study population, including demographics, geographic location, and disease severity, to ensure replicability and relevance.
- Statistical analysis and results:
    - The statistical methods should directly address the research question. Results must align with the proposed statistical analyses without overemphasis on secondary outcomes.
    - Utilise visual elements such as tables and figures to present data concisely.
- Discussion and interpretation:
    - The discussion should not overstate the significance of the findings. Avoid presenting secondary outcomes as if they were the primary focus.
    - Clearly distinguish between what the study found and what the data actually supports, maintaining a balance between interpretation and speculation.

4. Guidance on authorship in medical research

Writing is an essential and rewarding part of research. Engaging in thoughtful authorship practices not only supports academic integrity but also fosters respectful and productive collaborations. Adhering to clear authorship guidelines helps prevent disputes and maintains the credibility of published research.

- Authorship Criteria (International Committee of Medical Journal Editors (ICMJE) Guidelines):
    - Authorship follows the guidelines set by the ICMJE. To qualify as an author, an individual must fulfil all four of the following criteria:

1. Substantial contributions to the conception, design, data acquisition, *analysis, or interpretation.
2. Drafting the article or critically revising it for intellectual content.
3. Final approval of the version to be published.
4. Accountability for all aspects of the work, including ensuring the accuracy and integrity of the research.
    - The fourth criterion is often the most challenging, especially for emerging researchers. Authors must feel confident in the work's accuracy and integrity before attaching their name to it.

*Note: *statistical analysis qualifies as an authorship contribution, not merely a supportive role.*

- Ethical considerations:
    - Integrity and confidence: If an author has doubts about the integrity of the work, they should not agree to authorship.
    - Institutional integrity: Work within institutions that uphold strong research integrity policies to minimise risks of misconduct.
    - Collaboration ethics: Collaborate with individuals and institutions that maintain high ethical standards in research.
- Non-authorship contributions:
    - In the absence of key contributions as outlined above, some contributions do not qualify on their own for authorship despite being essential to the research process. These include:
        - Funding acquisition.
        - Supervisory roles.
        - Administrative trial coordination.
        - Providing scientific or technical advice.
        - Data collection, entry, or proofreading.
- Group authorship:
    - In large collaborative studies, group authorship may be more appropriate. For example:
        - Some journals allow listing the group name (e.g., "Balanced Anaesthesia Study Group") instead of individual authors.
        - Some journals, like The Lancet, permit both individual names and the group name.
        - In cases where authors are not individually listed in the byline, their contributions may still appear in supplementary materials or appendices, and their names might be indexed in databases such as PubMed.
        - Site investigators and research coordinators contributing to CTN trials may be eligible to be listed as a contributor in the appendix in accordance with the criteria outlined in the trial protocol.
- Misconduct in authorship:
    - Ghost authorship: Failing to credit individuals who made substantial contributions.
    - Guest authorship: Including prominent names who made no real contribution to the work.
    - Gift authorship: Automatically including department heads without sufficient involvement.
    - Author order manipulation: Changing the order of authors without proper justification.
    - Authorship sale: Selling authorship positions on accepted manuscripts, often seen in fraudulent contexts.
- Best practices for managing authorship:
    - Early agreement: Discuss authorship roles and order before starting the project.
    - Document authorship decisions: Include an authorship plan in the project protocol.
    - Resist unethical requests: Do not agree to authorship in exchange for access to resources or support.
    - Review authorship regularly: Update the authorship plan if the project scope or team changes.
    - Transparent communication: Clearly explain any changes in author order to the editorial team and all co-authors.

5. Guidance on Artificial Intelligence (AI) in scholarly publishing

AI is poised to significantly transform scholarly publishing. Rather than resisting these changes, researchers should actively engage with new technologies while adhering to established ethical standards. Open discussions within academic communities can help navigate this evolving landscape and shape future practices.

- AI and the evolution of academic publishing:
    - The integration of AI into scholarly publishing is inevitable and rapidly evolving.

    - AI is influencing every aspect of publishing, from manuscript drafting and data analysis to peer review and dissemination.
    - The adoption of AI in academia is accelerating, and researchers must stay informed about both its benefits and its potential pitfalls.
- Historical context of digital transformation in publishing:
    - The first major shift was the digitization of journals in PDF format in 1993, followed by the launch of PubMed in 1997, which revolutionised article accessibility.
    - The early 2000s saw the rise of open access, challenging traditional subscription models and promoting wider dissemination of research.
    - Today, AI is leading the next wave, enhancing everything from content generation to data validation.
- AI in manuscript preparation:
    - AI tools, like language models and automated editing software, are increasingly being used to draft and refine manuscripts.
    - While AI can assist with summarising content and checking for coherence, it cannot replace the critical thinking and contextual understanding that human authors bring.
    - Researchers should clearly disclose any use of AI tools in manuscript preparation to maintain transparency and ethical standards.
- AI-assisted peer review:
    - AI can help automate parts of the peer review process by analysing text for logical consistency, identifying potential biases, and comparing findings with existing literature.
    - However, complete reliance on AI for peer review is problematic due to the nuanced judgment required in evaluating scientific quality.
    - Some major journals are experimenting with AI-supported peer review, but human oversight remains essential.
- Dynamic and decentralised publishing models:
    - AI may lead to more dynamic and continuously updated research outputs, rather than static publications.
    - Blockchain technology and decentralised databases could enable real-time updates and transparent authorship tracking.
    - In the future, research papers might evolve into living documents, constantly updated with new data and analyses.
- Ethical and practical challenges:
    - Determining authorship when AI significantly contributes to content creation remains a contentious issue.
    - Currently, AI cannot be listed as an author because it lacks accountability. However, some argue that as AI systems become more autonomous, this stance may need revision.
    - Ethical considerations also include data privacy, the accuracy of AI-generated analyses, and the risk of misinformation if AI is not properly supervised.
- Recommendations for researchers:
    - Leverage AI responsibly: Use AI to enhance, not replace, human authorship. Clearly document its role in the manuscript.
    - Maintain ethical standards: Be transparent about AI's involvement in content creation, analysis, or peer review.
    - Stay informed: Keep up with evolving guidelines regarding AI use in publishing, as practices and policies may change rapidly.
    - Balance efficiency with quality: While AI can streamline many tasks, ensure that human judgment and critical evaluation remain central to research output.