How to write papers that editors will want to publish

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Competing interests

I’m editor in chief of BMJ Open and director of academic outreach at BMJ, a wholly owned subsidiary of the BMA.

Part of the revenue for BMJ (the company) comes from drug & device manufacturers through advertising, reprint sales, & sponsorship. The BMJ and BMJ Open are open access journals that charge author fees for research. I’m editorial lead for the BMJ Research to Publication eLearning programme (by subscription).

My annual bonus scheme is based partly on the overall financial performance of both BMJ and BMJ Research to Publication.
85% research wasted, costing >$100bn/yr

Which research do we need for ‘Real EBM’?

Real EBM makes ethical care of the patient its top priority, and demands:

- individualised evidence in format clinicians and patients can understand
- expert judgment, not mechanical rule-following
- shared decisions with patients through meaningful conversations
- strong clinician-patient relationships and human aspects of care

- studies meeting usability standards, as well as methodological ones
- interdisciplinary research agenda embracing experience of illness, psychology of evidence interpretation, shared decision making, and how to prevent harm from too much medicine

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What’s the problem?

What are the main reasons for journal editors to reject a research paper, even if well written and presented?

• the research question isn’t sufficiently new, interesting, or important
• the question is answered with suboptimal design
• investigators often lack training on developing good research questions, choosing study designs, and reporting research effectively
Will the research question advance knowledge and be applicable to practice?

**Curie quadrant**
Pure basic research without consideration of relevance to practical issues

**Pasteur quadrant**
Use-inspired basic research to address important practical questions

**Waste quadrant**

**Doll quadrant**
Pure applied research to address important practical questions

What makes a poor research question?

- a question you don’t care about; nor does anyone else
- perusing routine clinical data (often incomplete, biased, confounded) then trying to think of a question
- a fishing expedition/data dredging – gathering lots of information and hoping a question will emerge
- statistical analysis of data for many outcomes may yield false positives (type I errors) or false negatives owing to lack of power (type II errors)
Core guidance on writing papers

International Committee of Medical Journal Editors recommendations for manuscripts submitted to biomedical journals http://www.icmje.org/

Reporting guidelines for research, at the EQUATOR network http://www.equator-network.org/
ICMJE recommendations on authorship

Authorship credit must be based on substantial contributions to:

• conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;

• AND drafting work or revising critically for important intellectual content;

• AND final approval of the version to be published;

• AND agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved
Introduction: why did you ask this research Q?

Brief background for this audience
• 3-4 paragraphs only
• what’s known/not known on research question – citing systematic reviews where possible
• don’t bore readers, editors, reviewers
• don’t cram in your whole literature review

The research question
• state it clearly in last paragraph of introduction
• say why the question matters
Use best study design to answer research Q

Descriptive studies answer “what’s happening?”
Analytic observational studies answer “why or how is it happening?”
Analytic experimental studies answer “can it work?”

Adapted from: Centre for Evidence Based Medicine, Oxford, UK www.cebm.net
Methods: what exactly did you do?

Like a recipe: most important section for informed readers

• describe PECO/PICO elements of the study

• follow reporting guidelines eg CONSORT Statement

• describe measures to ensure ethical conduct

• fully describe and give references for lab/stats methods

• provide study protocol if required
Equator network http://www.equator-network.org/
Results: what did you find?

• report results fully & honestly, as pre-specified
• text (story), tables (evidence), figs (highlights)
• report primary outcomes first
• give confidence intervals for main results
• report essential summary statistics
• leave out non-essential tables and figures
• share data, code, and/or metadata if required
• don’t start discussion here
Discussion: what does it mean and why should anyone care?

Don’t simply repeat the introduction. Include:
• statement of principal findings
• strengths & weaknesses of the study
• strengths & weaknesses in relation to other studies (especially systematic reviews), & key differences
• possible mechanisms & explanations for findings
• potential implications for clinicians or policymakers
• unanswered questions and future research
Abstract: why should anyone read the paper?

Should be accurate and clear for:

Readers, systematic reviewers, and web search tools:
• may be the only part of the paper that is accessible to all
• clarity will encourage selection and reading of the full paper

Editors and reviewers:
• editors may screen and reject articles by reading only abstract
• peer reviewers are often invited with a link only to abstract

Authors:
• all authors must approve it
• use reporting guidelines eg CONSORT or PRISMA for abstracts
Keep it simple

The attempt made by the female bovine adult to discontinuously traverse the Earth’s lunar body was not unsuccessful.
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Typical peer review process (repeated)

1. Review by colleagues
2. Submit
3. Editorial review
4. Acceptance (eventual)
5. Revise and submit to next journal
6. Rejection: immediately or after peer review
What peer reviewers should do

• critically appraise submitted manuscripts, in light of their expertise and their knowledge of existing evidence
• help editors to decide which papers to publish
• observe confidentiality: not disclosing, sharing, or reusing manuscripts or authors’ ideas, methods, results
• be ethical* and objective, declare conflicts of interest
• be constructive, aiming to help authors improve the manuscript for the next journal, if not accepted here, and to do a better study next time
• respond quickly or decline the assignment

* Committee on Publication Ethics (COPE) ethical guidelines for peer reviewers
http://publicationethics.org/files/Ethical_guidelines_for_peer_reviewers_0.pdf
Core elements of peer reviewers’ reports

For research articles reviewers will usually comment on:

- importance of the research question
- originality of the research question/study (with references)
- strengths and weaknesses of study method and design
- presentation of the study and clarity of writing
- interpretation of the study results
- implications of the study
many journals now ask authors and reviewers to supply ORCIDs

- [http://orcid.org/](http://orcid.org/) = online registry of free, unique identifiers for nearly 2 million individual academics
- ORCID links to other researcher ID schemes
- these identifiers can be linked to each researcher's output in order to:
  - enhance scientific discovery process
  - improve efficiency of research funding
  - aid collaboration
Prospective cohort study of 1107 manuscripts reporting original research submitted to The BMJ, The Lancet, and Annals of Internal Medicine in 2003 and 2004. 68 (6%) accepted, 777 (70%) rejected outright, and 262 (24%) rejected after peer review. Methodologically strong studies were more likely to be published, but those reporting statistically significant results were no more likely to be published than those without, suggesting that publication bias is not at editorial level.

How to cope with rejection

• ensure all authors of the paper know about the rejection and are ready to work together on preparation for the next journal
• carefully consider all feedback from editors and reviewers
• use constructive comments to revise and improve the paper
• do this in line with scope and requirements of next journal
  • some of the suggested revisions may not be relevant
• in the cover letter for the next journal mention that the paper has been revised following rejection; share reviews
Develop your research skills
And learn how to write papers that get published

Courses & Modules

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| HOW TO WRITE A PAPER |
| WHAT EDITORS AND PEER REVIEWERS LOOK FOR |
| PUBLICATION ETHICS |
| DESIGNING CLINICAL RESEARCH |
| RESPONSIBLE CONDUCT OF RESEARCH |
| INTRODUCTION TO CLINICAL TRIALS |
Thanks and good luck