Peer reviewing medical literature for fun and (intellectual) profit

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Reviewing 101

- Why do a review
- How to decide to do a review when asked
- A systematic approach to reviewing papers
- Making your recommendations
Why do you want (or think you want) to do peer reviews?
Why do a review

1. They asked
2. To fulfill a ‘community service’ spot on my CV
3. To be aware of what others are writing
4. To maintain and develop your editorial sense
Should I do this review?

• **Do I have time to spend?**
  – Reviewing takes time, particularly if you want to do it well.
  – Commit at least 40-45 minutes to read the paper and formulate a set of critiques
  – Another 20-30” writing your comments.
  – Most reviews are 1-3 pages in length.
What is the goal of the review?

Lump of Carbon

Diamond
Lump or split?

• Split the paper’s weaknesses
  – Read the paper
  – Provide line-by-line comments/feedback
    ➔ Advantage: Very thorough, comprehensive
    ➔ Disadvantage: Very thorough, comprehensive

    ➔ Disadvantage: Not prioritized, misses forest for trees. Can be overwhelming for authors
Lump

- Summarize and synthesize
  - Read the paper
  - Look for themes

  - Advantage: Useful for authors, more time efficient, is how actual readers read papers
  - Disadvantage: May feel less systematic, could potentially miss key issues
Both
A stepwise approach to reviewing

- **Skim the abstract and tables**
  - Is the message clear?
  - Can you get the ‘gist’ of the paper from the abstract and tables?
  - Are results mentioned in abstract also mentioned in results and tables/figures?
  - Goal: Develop a few initial hypotheses about the paper and test them as you review in more detail.

- Pitfall: Don’t make snap decisions
A stepwise approach to reviewing

• **Read for content, clarity, consistency**

• **Introduction:**
  – Is the message clear?
  – Is the critical argument for the paper made (why the question is important, why the methods are novel, etc)?
  – Do you understand the aims and hypotheses as stated?
A stepwise approach to reviewing

• Methods: Read as an interested clinician, non-statistician.
  • Are Methods logical and understandable?
  • Are the outcomes, predictors and confounders described clearly?
  • Within your area of expertise, do you see any major flaws? (this is where statistics can come in)
  • Did they identify and/or address obvious flaws in their data and/or study in Methods?
A stepwise approach to reviewing

• Read for content, clarity, consistency
  – Common errors in Results:
    • Should not be a recitation of data in tables, nor should it interpret findings
    • Do the text descriptions match data in tables/figures?
      – Numbers should be the same in abstracts, results, tables
      – Beware results that are mentioned in Results, but not in tables
      – Extra points: sections in results correspond exactly to tables/figures
A stepwise approach to reviewing

• Discussion:
  • Do the authors make a compelling summary of their results?
  • Do they describe their results in the context of other studies?
    – Discussions MUST stay within the bounds of their study and findings
  • Do they make the same observations about the data that you did? (did they miss a teaching point?)
  • Did they mention the limitations you found?
  • Did they make conclusions about the implications of their study
    – PS: “More study needed” is not a conclusion
A stepwise approach to reviewing

- Problems with grammar, spelling, formatting, etc.
  - Keep a running tally of errors you note.
  - Using track changes is sometimes useful.
A stepwise approach to reviewing

• **Make an editorial assessment.**
  – Did the paper pique your interest?
  – Did it present novel findings or represent an innovative approach to an old problem?
  – Are the writing and presentation clear and concise?
  – Is the literature review current and does it place the study in appropriate context?
  – Can tables or figures be condensed, removed, reformatted?
A stepwise approach to reviewing

• **A word about fatal flaws**
  – Mortality results from multisystem failures.
    • Methodologic problems which are not easily addressed are **limitations**, not fatal flaws
  • **Clean kills** – *(should be pointed out to the Editor)*:
    – Dual publication (I saw this same paper somewhere else)
    – Plagiarism
    – Ethical problems with study design and/or lack of IRB approval.
    – Unexplained financial or other conflict of interest.
    – RCTs which have not been registered with the trial registry.
    – Completely inappropriate for a journal
Write your review

• Prioritize and characterize your concerns before you start to write your review.
  – Note page/para/line information wherever appropriate.
Write your review

• Consider the things you found and lump into 4 categories.
  – **General summary of comments:**
    • What is your 1 or 2 sentence assessment of the paper?
    • How would you summarize it and its findings to your grandmother?
  – **Major concerns:** 2-3 concerns max
    • Things that **must** be fixed
  – **Minor concerns:** 2-7 concerns max
    • Things that **should** be fixed
  – **Grammatical/formatting errors:**
    • As many as you feel compelled to relay.
Write your review

• Be specific and give examples or suggestions.
  – General statements such as ‘not a significant contribution,’ and ‘poorly analyzed’ are not useful.
  – Do not be shy, but don’t claim omniscience.
    • Act as the expert. You were chosen because you have some expertise, either as a reader of the literature or a contributor to this or related literature.
Write your review

• Be respectful.
  – Be fair and critical but make your comments in the tone that you would want to receive.
Write your review

• **Comment/remedy duo:**
  • Editorial comment: ‘I don’t understand’, or ‘I am concerned about’

*Followed by or paired with:*

• Remedy (or question to author): ‘I suggest’ or ‘did the authors test for’
Write your review

• **Give the editor clear guidance in your confidential comments**
  – Your comments may include opinions about whether the manuscript is ultimately worth publishing – but that is not your call.
  – Point out things you think ‘have to be fixed.’
  – If you give generally positive feedback and then recommend to the editor that the paper be rejected, you will have created a communication problem that the editor will need to fix.
Post Hoc analysis

• Read your review and others when a decision is made
• This is a great way to tune your editorial antennae and expand your knowledge base
Summary

• Set aside time
• Be systematic in your approach
• The goal is not to destroy a paper, but to help polish it.
  – Constructive criticism with comments that point towards a solution or new limitation are best