How to Review a Paper for the Radiology Literature

AUR 2011 Annual Meeting – ACER Session on Manuscript Reviewing

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Introduction
DISCLOSURES

- This presentation reflects my personal views and not necessarily those of the RSNA
- I have no other disclosures, financial or otherwise
Introduction

- **Peer review is a very important albeit very imperfect part of radiology publication**
- There is almost no formal training in manuscript preparation and reviewing during radiology training, and likewise for junior faculty – yet this is an expected skill in academic medicine
- Journal clubs do not necessarily emphasize radiologic journalism issues
- “Sink or swim” for junior academic radiologists - learn by trial & error, with a large learning curve
Introduction

- Bad habits – or no habits - are established
- The quality of reviews may be poor or suboptimal
- As a result scientific progress in imaging may suffer
- *It is a very rare if non-existent week where most or all of the manuscripts I review/edit have very closely followed all of the basic principles covered in this presentation*
Objectives

- To briefly overview how to review a manuscript being considered for publication at an imaging journal
- To explain what editors want from a good review, and to point out potential reviewer pitfalls
- To understand how being a good reviewer also makes one a good reader and writer
Reviewing: the Bottom Line

- The **cardinal rule** of reviewing: *does it pass the Dr. Stanley Siegelman “who cares” test?*
- Does the conclusions/main points of a clinical radiology manuscript reflect the reality/potential reality of your clinical practice?
“That’s it? That’s peer review?”
Reviewing

- The most unheralded & unappreciated activity in academic medicine
- Time consuming, painful, frustrating, and relatively unrewarded as an academic activity
- No one gets famous being a peer reviewer, and the reward is usually more work…
- However:
- - it can be personally fulfilling
Reviewing

- it teaches one that what is submitted does NOT EQUAL what is published

- great responsibility – accepted papers can lead to further research, change actual practice, establish standards of care, and be used in court

- an opportunity to improve the quality of a journal and ultimately/hopefully, patient care

- reviewer awards, inclusion on a journal’s editorial board – helpful for academic promotion
Preparing

- Volunteer by contacting a journal’s editorial office
  - This includes radiology residents & fellows
- Almost all imaging journals now have online manuscript submission and reviewing
- Checklist for areas of interest/expertise
- Email inquiry is periodically sent as to a reviewer’s interest/availability; usually includes the manuscript’s abstract
- The focus here will be on original clinical radiology research papers, but can extrapolate to other types of manuscripts
Reviewing

- Reviewers are chosen by the editorial offices of radiology journals using various means, but are [usually] not chosen by the authors.
- 2 to 3 weeks allotted for the reviewer to complete the review.
- Return review by email in a timely manner.
- Usually 2-3 reviewers; deputy/additional reviews if conflicting reviews/delinquent reviews.
A Reviewer has an ethical responsibility to disclose to the editorial office – and recuse herself/himself if:

- the reviewer feels she/he does not have adequate expertise to review the manuscript
- the reviewer has a conflict of interest (personal/professional/financial)

The major imaging journals now ask reviewers to disclose any such conflicts prospectively
Reviewing

- Review should be candid - identities of reviewers are blinded to authors at all major imaging journals - but fair; avoid insulting/hurtful comments
- Review should be in two parts: confidential comments to the editor, and comments to authors & the editor
- Comments to the authors should be numbered and grouped, with individual comments for each part of the paper (abstract, introduction, etc.)
Reviewing
Reviewing

- Too many reviews are non-substantive, non-constructive, or contain only a few sentences
- The authors put in a lot of work & so should you!
- The average review should take about 1.5-2 hours to do, & sometimes more
- Check if the authors followed the publication information to authors (PIA); read PIA the first time you review for/write for a journal
- Blatant disregard for the PIA usually indicates “recycling” of a paper rejected elsewhere
Reviewing

- Read the key articles cited in references, prior to reading the article under review, if you are not familiar with the specific topic.
- Do an internet search and pull other relevant articles (from the imaging literature and general medical literature).
- Participating in the peer review process is also an opportunity to broaden your own knowledge base and to gain expertise in new/focused areas.
Comments to the Editor:
- are kept confidential/are NOT given to authors
- should include summary of the strengths and weaknesses of the paper
- should note the most important changes which are needed
- should make a specific recommendation to the editor regarding acceptance, rejection, or “under consideration”/reject with the opportunity to resubmit
- most journals have a score-sheet to fill out
Reviewing

- **Comments to the Authors:**
  - make very specific points, comments, and suggestions on each part of manuscript
  - be constructive, not destructive
  - keep in mind the authors’ viewpoint/frustrations of being a researcher/author; re-read the review and ask, “are these criticisms realistic and fair”?
  - complement the authors where appropriate
Reviewing – Specifics

- Title:
  - is the title appropriate for the study?
  - the title should not give the result: e.g. “Glucagon is Worthless for CT Colonography” but should state what was studied or note the main issue, e.g. “Comparison of CT Colonography with and without IV Glucagon” or “IV Glucagon: Should it be Used for Routine CT Colonography?”
  - a flawed title is a sign of a flawed paper
  - surprising how many problems occur with titles
Reviewing – Specifics

- **Abstract:**
  - is usually restricted to 300 words or fewer
  - should follow journal’s format, typically purpose, materials and methods, results, and conclusion, if a major paper; abbreviated abstract if a technical development, etc.
  - the major statistical tests used should be stated in the end of the methods, and the results of statistical tests in the results section – along with p and other statistical values
Reviewing – Specifics

- **Abstract:**
  - **the reader should be able to grasp the main results/message of the paper by reading the abstract**
  - although some reviewers/editors prefer to read the abstract last – I prefer to read it first
  - should restrict contents only to most important information
  - results should follow directly from the methods
  - should include an IRB/informed consent statement
### Introduction:
- usually 1-2 typed pages
- should justify the current study and briefly put it into the context of the previous literature
- should reference other major papers that have previously addressed the topic(s) being researched
- the last sentence should be nearly identical to the purpose statement in the abstract
Reviewing – Specifics

- **Materials and Methods:**
  - organized with headers in a logical sequence; last section should be “statistical analysis”; 5 pages at most
  - equipment/pharmaceuticals used should be stated in appropriate detail
  - should include number of radiologists and others who performed each portion of the study and their years of experience
  - include an IRB & informed consent statement
Reviewing – Specifics

- **Materials and Methods:**
  - should state the age range and mean for both men and women in the study
  - should include details on region-of-interest (ROI) and other measurements (who performed, in generic terms)
  - watch for **EXACT** correspondence between the methods and the results – every result should be accounted for in the methods section
  - *the results section should not state any new methods*
Results

"I've got the results of your X-rays."
Reviewing – Specifics

- **Results:**
  - should follow directly from the methods section, again in logical sequence
  - tables used as appropriate, but main points should be included in text of the results section
  - all figures should be cited here – except for images of equipment or related to e.g. technique used in an interventional procedure; do not cite figures or tables in the discussion section
  - watch for statistical values, and comments regarding statistical significance
Reviewing – Specifics

- **Discussion:**
  - 4-5 pages
  - should not completely restate the results; only hit on the major points in the context of the previous literature
  - should explain the significance of the current study
  - should include a limitations section just before the conclusion paragraph; *no study is perfect*
Reviewing – Specifics

- **Discussion:**
  - should cite the most recent and relevant references; include ‘dissenting’ papers
  - should include a conclusion paragraph
  - *watch for overreaching conclusions*
  - should never use the words “obviously” or “importantly” anywhere in the manuscript
  - should not use the words “robust” and “novel” anywhere in the manuscript
Reviewing – Specifics

- **References:**
  - references should **FOLLOW THE FORMAT EXACTLY** for the appropriate journal
  - sloppy references/use of incorrect format reflects **POORLY** on the manuscript
  - *residents/fellows/junior authors* – and most *authors for that matter* – never seem to get this
  - use correct journal name abbreviations
  - avoid the use of too few or too many references
Figures

Budget ultrasound.
Reviewing – Specifics

- **Figures:**
  - can be a **substantial** problem, especially with internet submission
  - make sure image quality is high; use appropriate file format (e.g. TIFF, not JPEG)
  - figures should reflect the main points being made in the text; authors tend to show the exceptions rather than the most representative cases – or no images – or too many images
  - **annotate** figures with arrows/arrowheads
Reviewing – Specifics

- **Figures:**
  - figures should not reveal *specific* patient, institutional, or equipment manufacturer information
  - include *generic* (non-HIPAA-violating) patient information (age, sex, and clinical information) in the figure legends, if at all possible
  - follow journal format (*watch for the AJR* – for example “CT scan shows mass at head of pancreas (arrow)” – no “the”, “a”, etc. - no one seems to get this point, ever)
Reviewing – Specifics

- Tables:
  - authors should avoid excessive use of tables
  - should use appropriate font size for axes
  - should avoid confusing terminology; define abbreviations
  - summarize key point(s) being made, in legends
  - use standardized formats, e.g. for ROC curves; use examples in published articles as a guide
“I do hope you won’t mind me naming your syndrome after myself!”
Reviewing/Writing

- Authors should “review” their own work prior to submission – approach it from the point of a critical reviewer – and remember there is no substitute for good editing/rewriting.
- Use samples of the same type of article from the same journal as a model.
- *Fix problems prior to initial submission to maximize chances for acceptance.*
- Have an in-house “editor” who is not involved in the study, or the senior author, objectively critique and help re-write the manuscript prior to submission.
Revisions

- Revisions to major papers are inevitable prior to final acceptance
- For manuscripts which are placed “under consideration” or “reject but resubmit”, one or more of the original reviewers may be asked to evaluate the revision
- Manuscripts heading for acceptance at major imaging journals may undergo formal statistical review after initial peer review
Radiologic Journalism Fellowships

- RSNA Eyler Editorial Fellow
- RSNA Editorial Fellowship for Trainees
- RSNA reviewer mentorship program
- Figley Fellowship at the *AJR*
IMAGING AND NON-IMAGING JOURNAL POLICIES REGARDING INSTITUTIONAL REVIEW BOARD APPROVAL AND INFORMED CONSENT DECLARATIONS BY AUTHORS

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Conclusions

- Involvement in the peer-review process will help the field of radiology, will improve your knowledge in specific as well as general areas, and will make you a more critical reviewer and a better writer.

- Approach your writing as if a reviewer, and fix as many problems as possible, prior to manuscript submission.

- Email: dkatz@winthrop.org
“Who’s the wiseguy down in X-ray?”
References

4. Publication information for authors. Radiology, RG, AJR, Academic Radiology, etc.
6. Proto AV. Evaluating and processing your manuscript for publication. Radiology 2007; 244:3-6.