MANUSCRIPT WRITING

Best Practices, Methods, and Pitfalls

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TODAY’S SESSION: TWO PARTS

PART 1: TYPES OF BIOMEDICAL RESEARCH AND GUIDELINES FOR WRITING AND REPORTING

PART 2: WAYS TO WRITE A MANUSCRIPT
OVERVIEW

Refresher on Types of Studies

Guidelines for Writing Each
• Ways to avoid bias, ensure transparency
THREE BROAD GROUPS

- Original scientific articles
- Case Reports
- Reviews
Anatomy of Scientific Paper

- Introduction
- Methods
- Results
- Discussion
TYPES OF TRIALS

Analytic Studies
Examine etiology and causal associations

Experimental Studies
One or more factors altered and effects examined

Uncontrolled Trials
Trials without a control group for comparison

Controlled Trials
Trials with a control group for comparison

Observational Studies
Observations made without any interventions

Non-randomized
Subjects allocated to an intervention or control group but without randomization method

Randomized (RCTs)
Subjects allocated randomly to an intervention or control group

Cohort Study
Case-control Study
Cross-sectional Study

Figure 1.
Analytic Study Designs. Adapted with permission from Joseph Eisenberg, Ph.D.
“Medical science depends entirely on the transparent reporting of clinical trials.” — Rennie, D (CONSORT, revised)

The revised, published CONSORT 2010 is the most up-to-date version of the CONsolidated reporting of a randomized, clinical trial (RCT).

The website includes a checklist of 25 items and a flow diagram authors can use for reporting a RCT.
CONSORT
TRANSPARENT REPORTING of TRIALS

Enrollment
Assessed for eligibility (n=1364)
For this observational sub-study (n=190)

Excluded: depending on substudy
Randomized not yet finished

Allocation
Allocated to intervention for this substudy (n=82)
- Received allocated intervention (n=82)
- Did not receive allocated intervention (> 4.5 hours, too good to treat, rapidly improving symptoms, infarct of varying ages, anticoagulation, haemorrhagic transformation, oclusions of vertebral and basillary artery, hemoptyse, FLAIR demarcation) (n=102)

Follow-Up
Allocated to intervention (<4.5 hours)
- Received allocated intervention (n=213)
- Did not receive allocated intervention (give reasons) (>4.5 hours)

Lost to follow-up (give reasons) not yet finished

Analysis
Only patients with three month follow-up (mRS) were included in this substudy
Analysed (n=164) in this substudy
Analysed (depending on the substudy)
To improve the reporting of observational studies (cohort, case-controlled, or cross-sectional studies) a useful checklist of 22 items (the Strengthening the Reporting of Observational studies in Epidemiology [STROBE] statement) was created.

The guidelines are available on the web for free and provides guidance to authors on how to improve the reporting of observational studies (this is widely supported by reviewers).
PRISMA is an evidence-based minimum set of items for reporting in systematic reviews and meta-analyses. PRISMA focuses on the reporting of reviews evaluating randomized trials but can also be used as a basis for reporting systematic reviews of other types of research, particularly evaluations of interventions.
PART 2: WRITING THE MANUSCRIPT

- Target Journal
- Authorship
- Ethical Issues
- Methods
- 19-step Methodology
PREPARING TO WRITE A MANUSCRIPT

Literature review: The hypothesis formulated by the investigator is the common starting point to search the relevant publications for an answer.
AUTHORSHIP: 1\textsuperscript{st} THING
ICJME RECOMMENDS AUTHORS FULFILL
ALL THE FOLLOWING

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<td>Substantially contribute to the conception and design of the study, acquisition of data, and analysis and interpretation of data;</td>
<td>Draft the article \textbf{or} revise it critically for important intellectual content;</td>
<td>Approve the final version.</td>
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AUTHORSHIP

• Based on the ICMJE guidelines, authors should be listed in decreasing order of their contribution and the senior author, or mentor, should be the last (but this convention has never been codified).

• Ensure accurate affiliations and contacts are provided, as they will be published on PubMed, as well as in the journal.
Peer reviewers are often experts. Not citing important articles poses the manuscript at risk for rejection.

It is advisable to consult, at a minimum, two or three relevant, credible databases to find the crucial relevant articles and to track down the “landmark” articles.

Also, make sure to find any recently published articles similar to the one you intend to submit.
MODELS FOR WRITING THE INITIAL DRAFT

Useful algorithm published by O’Connor and Holmquist

Start with making figures and tables, then proceed with summary statements (the conclusions summarizing the major contributions of the manuscript to the scientific community).

Proceed with the identification of the audience, materials and methods, results, discussion, references, introduction, and conclusion.
This might be an issue worth considering before writing your manuscript.

Electronic and open-access journals are the latest resources for publishing and data dissemination.

- Consider an appropriate level of impact factor or journal quality
- The impact factor is the measure that reflects the average number of citations to recent articles published in science and social science journals.

It is extremely important to read the instructions to authors section of the selected journal carefully.
ETHICAL ISSUES.

COPE provides advice to editors and publishers on all aspects of publication ethics and how to handle cases of research and publication misconduct.

Read the guidelines release by the Committee on Publication Ethics (COPE)

This is a forum for editors and publishers of peer-reviewed journals to discuss all aspects of publication ethics.
MODELS FOR WRITING THE INITIAL DRAFT

A more general strategy is to increase productivity during the early phases of manuscript writing by ignoring the details that can be approached later (structure, grammar, and spelling).

Like any story, a manuscript should have a beginning (introduction), middle (materials and methods), and an end (results). The discussion will serve as the “moral” of the story and put the study into perspective.
A SYSTEMATIC METHOD FOR WRITING AND PUBLISHING PAPERS
ADAPTED FROM WRITING AND PUBLISHING IN MEDICINE BY EDWARD J HUTH
1. Decide on the message of the paper. What is the main point you hope to make? Can you state it in a single sentence?

2. Decide whether the paper is worth writing. Have similar findings been reported? Is there a need for this report?

3. Decide on the importance of your paper. Apply the “so what” test. (“How would the paper change the concept or practice?”)
4. Decide the audience for the paper. Apply the “who cares” test (what type of people will care about your findings?).

5. Select the journal for which you will prepare the paper.

6. Search the literature or update your previous search for a firm decision on writing the paper and on its message.

7. Decide on authorship or review previous decisions on authorship.

8. Assemble the materials needed to write and publish the paper: protocols, data, graphs, illustrations, references, permissions. Decide on technical tools or help you need to publish the paper (biostatistics support, medical writing support, software, etc.).
NEED THE FINAL 11?

Check your handout packet or contact me!

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