Publication Writing

Module 11 Topic 6

Types of Manuscripts

Types of Journals:

- General or Specialty Clinical, Basic Science, Lay Press; Peer-reviewed or Paid-invited contributor; Academic, Society, Conference, or Industry-sponsored;

Types of Manuscript submissions:

- General: original research, letters to the editor, short communication, editorials, reviews, case reports.
- Special: technical briefs, methodological papers, application of information technology, research letters, blogs, poetry, cartoons, photographs.

Types of Studies in Manuscripts

Primary Research:

- Experiments
- Clinical trials
- Surveys
- Qualitative studies

Secondary or Derivative:

- Overviews: reviews, systematic reviews, meta-analysis
- Guidelines
- Decision analyses
- Economic analyses

The basics of writing a paper

1. Before you begin

- What do I have to say?
- Is it worth saying?
- What is the right format for the message?
- What is the audience for the message?
- Where should I publish the message?
- How can I best use paper and the web?

The basics of writing a paper

2. The importance of structure

- Structure is everything.

Structure of Research Papers

Introduction:

- High level problem statement
- mid-level problem statement
- "research gap"
- goal of this study

Methods:

- setting, population, procedures/statistical analyses, etc.
- reproducible

Results:

- Data (without interpretation)

Discussion:

- Interpretation of data
- put in context with existing research
- limitations
- summary statement

"Sandwich technology"

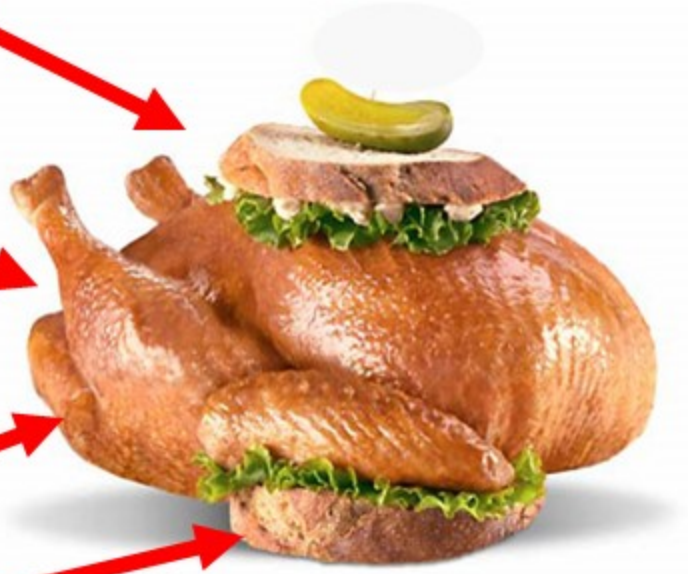
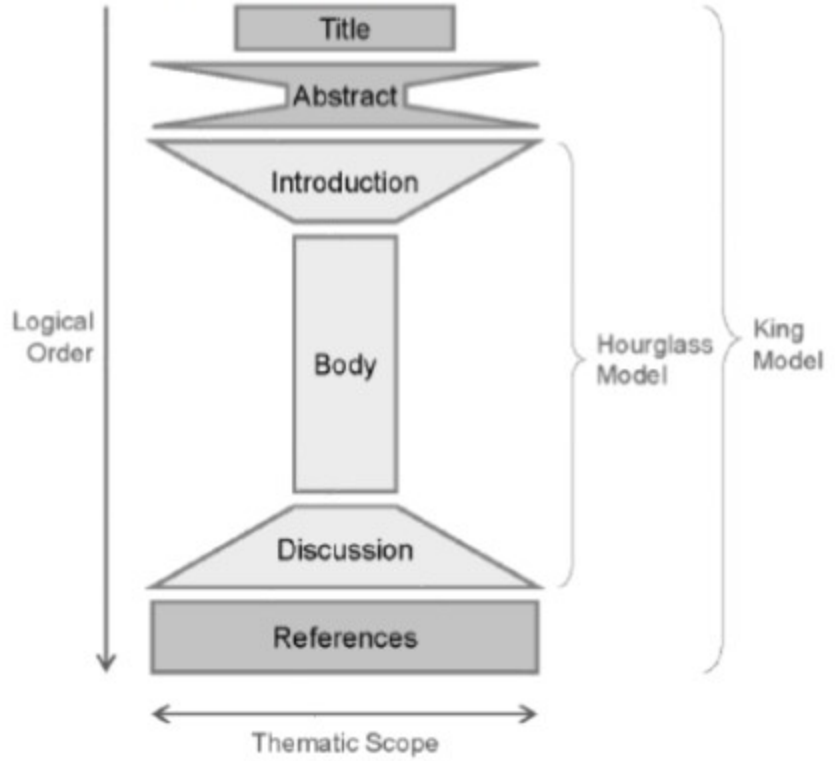


Figure 1 The 'Hourglass Model' (light-grey parts) and the 'King Model', which covers an extended set of parts in a typical paper's structure



Source: Based on Swales (1993)

Structure of scientific paper

- The structure of a research paper comprises three core parts, namely introduction, body and discussion
- The progression of the thematic scope of a paper within these parts typically follows a pattern called the ‘Hourglass Model’
- The introduction leads the reader from general motivations and a broad subject to a particular research question that is tackled in the body of the paper

Structure of scientific paper (contd)

- The body of the paper stays within a tight thematic scope and describes the research methods and results in detail
- Eventually, the discussion part aims to draw general conclusions and present implications from the results

IMRaD

- Introduction--Why did I do it?
- Methods--What did I do?
- Results--What did I find?
- Discussion-- What might it mean? *What is our overall finding? What are the strengths and weaknesses of the study in relation to other studies? Why might we have got different results? What might the study mean, particularly for clinicians or policy makers? What questions remain unanswered and what next?*

IMRAD: Introduction, Methods, Results, and Discussion

- Title
- Author information
- Acknowledgments
- Abstract
- References (what, how many, self-citation, journal self-citation; in-press, in-print; forthcoming; theses, personal comm.)
- Tables

IMRAD: Introduction, Methods, Results, and Discussion (contd)

- Figures
- Legends
- Word count
- Keywords
- Author contribution (what qualifies, ghost authors, honorary authors)
- Conflict of interest (sponsors, agency information)
- Trials registration, statements such as the CONSORT
- Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication
- http://www.icmje.org/

IMRaD (Introduction)

- Why did we start?
- What has gone before - ? A systematic review
- Why was this study needed?
- Be sure that readers understand the importance of the study-but don't overdo it
- Don't try to show readers that you have read everything

Methods

- Like a recipe
- For informed readers this is the most important section
- Describe how subjects were selected and excluded
- Don’t describe standard methods in detail - use references
- Statistics
- Ethics
- Remember that you can put more detailed methods on the web--for example, questionnaire

Results

- Stick to what is relevant
- Be sure to include basic descriptive data
- The text should tell the story
- The tables give the evidence
- The figures illustrate the highlights
- Don’t include just percentages or p values
- Include confidence intervals
- Think about absolute risk, number needed to treat, etc
- Avoid beginning to discuss the implications or strengths and weaknesses of your study

Discussion

- Statement of principal findings
- Strengths and weaknesses of the study
- Strengths and weaknesses in relation to other studies, discussing particularly any differences in results
- Meaning of the study: possible mechanisms and implications for clinicians or policymakers
- Unanswered questions and future research
- Go easy on the last two

Topping and tailing

- Title: Include design; Don't try to be clever
- Abstract: Must be structured; Include some numbers, not all
- References: Keep to the essentials
- Covering letter: Something very crisp
- Authorship, acknowledgements, competing interests

Title

- The title is the part of a paper that is read the most;
- It is usually read first and most often, it is the only thing that is read
- Electronic indexing services rely heavily on the accuracy of the title to allow users to find papers that are relevant to their research
- Day (1983) defines a good title “as the fewest possible words that adequately describe the contents of the paper” (p.9)
- When the title is too long, it usually contains too many waste words such as ‘Investigations on’ at the beginning
- On the other hand, titles that are too short often use words which are too general

Abstract

- An abstract comprises a one-paragraph summary of the whole paper
- Abstracts have become increasingly important, as electronic publication databases are the primary means of finding research reports in a certain subject area today (Koopman, 1997)
- Hence, everything of relevance to potential readers should be in the abstract, everything else not

Additional manuscript structure related considerations:

- Acknowledgments
- Trials registration, statements such as CONSORT
- Sponsorship
- Disclosure of (non)Conflicts of Interest
- Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication
- http://www.icmje.org/
- Electronic publication ⇔ in-print
- Pre-publication – allowed or not?
- Paper ⇔ Conference proceedings

Style of writing

The rudiments of style

- **George Orwell:** Good prose is like a window pane
- **Somerset Maugham:** To write well is as hard as to be good
- **Jonathan Swift:** Proper words in proper places make the true definition of style
- **Matthew Arnold:** Have something to say and say it as clearly as you can. That is the essence of style

The rudiments of style I

- Short words
- Short sentences
- Short paragraphs
- No jargon
- No abbreviations
- Prefer Anglo Saxon over the Latin
- Prefer nouns and verbs to adjectives and adverbs
- Cut all cliches

The rudiments of style II

- Avoid figures of speech and idioms
- Prefer active to passive
- Prefer the concrete to the abstract
- Avoid the not unblack cat crossed the not unwide road
- Be unstuffy

The rudiments of style III

- Don’t be too chatty
- Don’t be pleased with yourself
- Be careful with slang
- Use the scalpel not the sword
- Too many notes, Mozart
- Add a dash of colour, just a dash

Criteria for authorship of the International Committee of Medical Journal Editors (ICMJE)

- Authorship should be based only on a substantial contribution to:
- Conception and design or analysis and interpretation of data *and*
- Drafting the article or revising it critically for important intellectual content *and*
- Final approval of the version to be published

Competing interest
What is conflict of interest?

- A person has a conflict of interest when he or she has an attribute that is invisible to the reader or editor but which may affect his or her judgement

Competing interest
Why does it matter?

- Because it may have a profound effect on somebody's judgement
- Because of the perception that a person's judgement may be affected--whether it is or not

How should we manage conflict of interest?

- Ignore it--unaceptable
- Avoidance - hard
- Disclosure - to the editor, author, or reader?

Problems with conflict of interest

- Should it be just financial or personal, academic, political, religious, anything?
- People don't declare it because
  - it implies wickedness;
  - they are confident that their judgement is not affected
- Might we avoid these problems by changing conflict of interest to relevant or competing interests?

The best policy on competing interest

- Always declare a conflict of interest, particularly one that would embarrass you if it came out afterwards

Redundant publication I

- Happens commonly--perhaps 20% of studies
- Negative studies are often not published; positive studies are more likely be published more than once
- Distorts what the evidence says

Redundant publication II

- There is lots of room for arguing over the degree of overlap and what's legitimate
- Disclosure is the key
- Always send copies of overlapping papers and reference them
- The problem is not the publication but the lack of disclosure

Overview of Good Publication Practice Guidelines, including GPP3: Why should medical writers care?

Why All the Guidelines?

- Peer-reviewed publications have the power to impact medical practice, drive treatment decisions and patient outcomes and the guidelines help reinforce the standards of excellence
- Guidelines help direct the ethical, accurate, complete, and transparent reporting of medical research

Why All the Guidelines? (contd)

- Guidelines establish an unbiased framework and best practice standards for the development of ethical and transparent peer-reviewed journal articles and presentations at scientific congresses aimed at advancing the scientific and medical profession
- Lack of public trust in medical research and reporting of results

Misconduct in Medical Research

JAMA The Journal of the American Medical Association

Research Misconduct Identified by the US Food and Drug Administration

Out of Sight, Out of Mind, Out of the Peer-Reviewed Literature

Charles Seife, MS

JAMA Internal Medicine April 2015 Volume 175, Number 4

Behind the Veil: Conflicts of Interest and Fraud in Medical Research

on February 17, 2015 by Chris Kresser

Chicago Tribune

Commentary:

Should you put your trust in medical research?

Cory Franklin

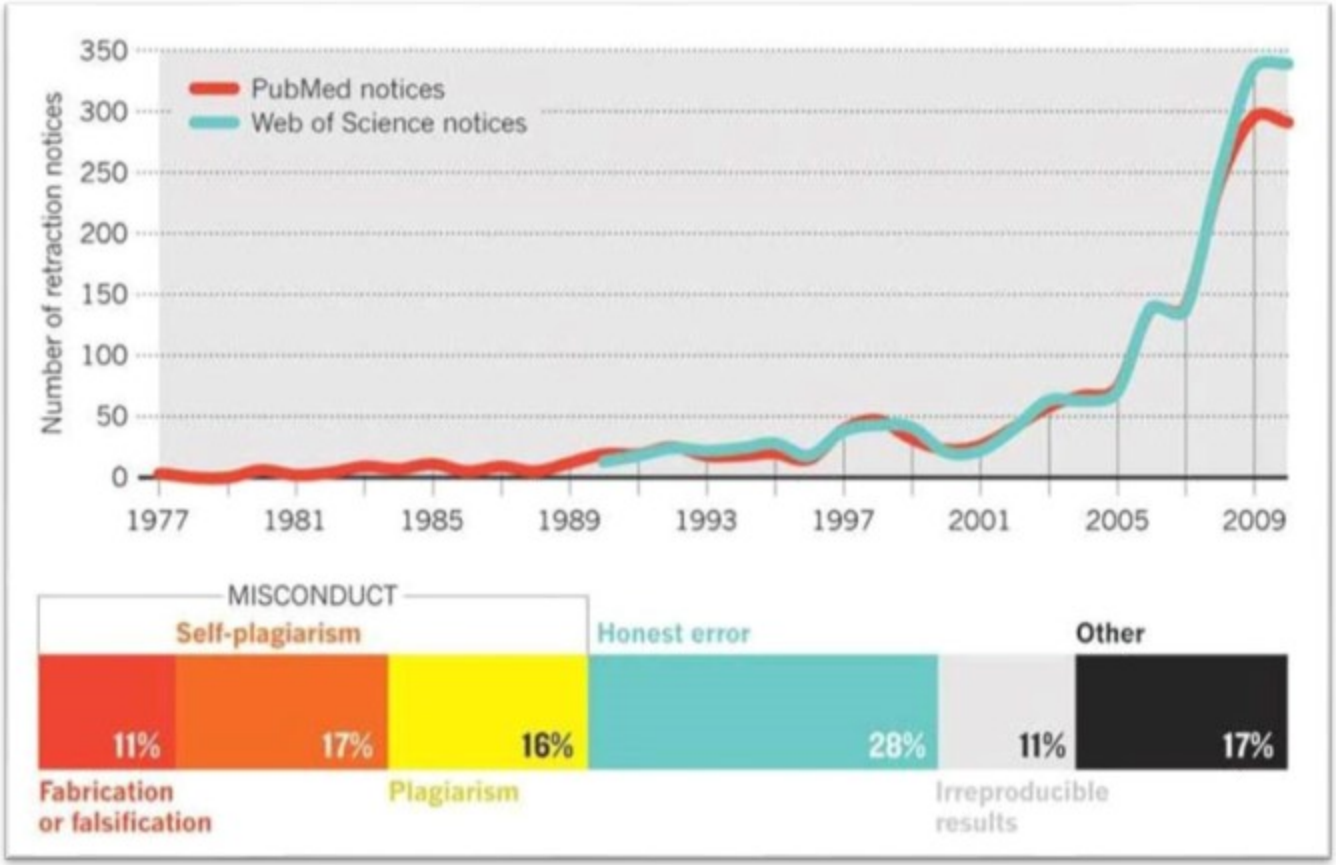
June 8, 2015

Forbes

Mar 20, 2014 @ 11:53 AM **1,960 views**

Medical Research Fraud And HHS's Office Of Research Integrity: Watching The Watchdog

Retraction Notices are on the Rise



Nature 478, 26-28 (2011) | doi:10.1038/478026a

Enhancing the Quality And Transparency Of Health Research

equator network

- http://www.equator-network.org/
- CONSORT – randomized clinical trials
- STROBE – observational studies in epidemiology
- PRISMA – systematic reviews and meta- anlaysis (PRISMA- P – for related protocols)
- STARD – diagnostic accuracy
- SPIRIT – protocol standards
- CHEERS – health economic reporting
- STRICTA – acupuncture trials (extension of CONSORT)

Key reporting guidelines

CONSORT	Full Record | Checklist | Flow Diagram
STROBE	Full Record | Checklist
PRISMA	Full Record | Checklist | Flow Diagram
STARD	Full Record | Checklist | Flow Diagram
COREQ	Full Record
ENTREQ	Full Record
SQUIRE	Full Record | Checklist
CARE	Full Record | Checklist
SAMPL	Full Record
SPIRIT	Full Record | Checklist
PRISMA-P	Full Record

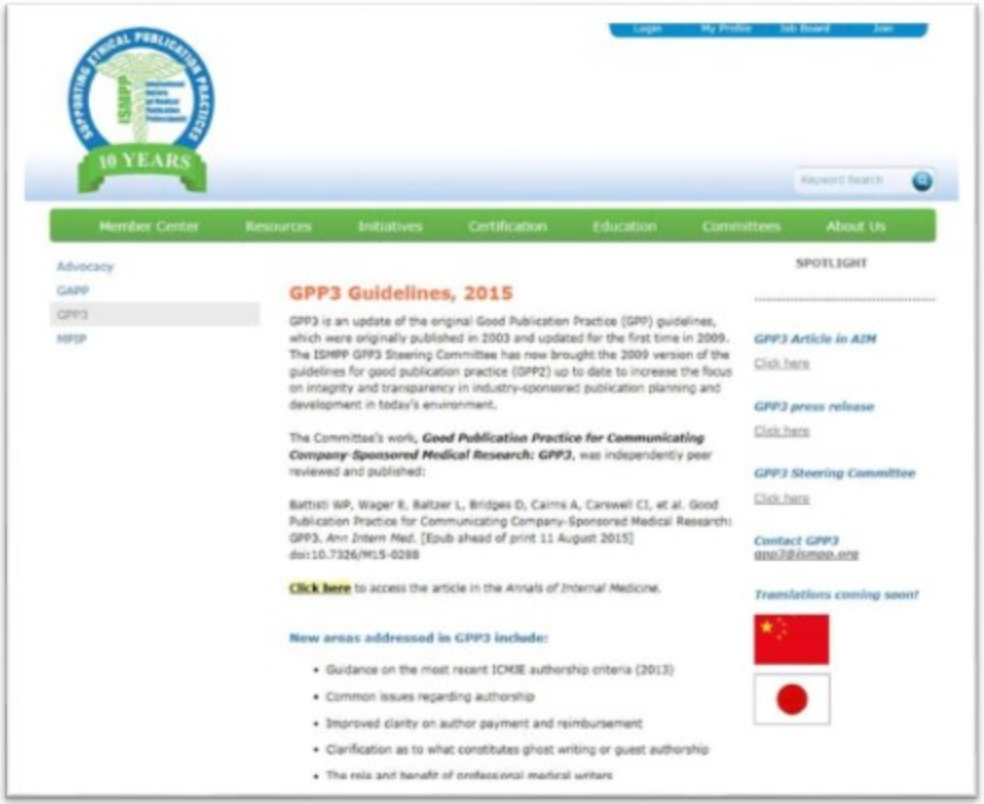
KLINTEC Academy

International Council Of Medical Journal Editors

ICMJE INTERNATIONAL COMMITTEE of MEDICAL JOURNAL EDITORS

http://www.icmje.org/

Good Publication Practice Guidelines (GPP3)



- The GPP3 guidelines were sponsored by the International Society for Medical Publication Professionals (ISMPP)

GPP3 guideline full Annals of Internal Medicine (AIM) article can be accessed through ww.ismpp.org/GPP3

Why is GPP3 Relevant to Medical Writers?

Annals of Internal Medicine RESEARCH AND REPORTING METHODS

Good Publication Practice for Communicating Company-Sponsored Medical Research: GPP3

Wendy P. Battisti, PhD; Elizabeth Wager, PhD; Lise Baltzer ; Dan Bridges, PhD; Angela Cairns ; Christopher I. Carswell, MSc; Leslie Citrome, MD, MPH; James A. Gurr, PhD; LaVerne A. Mooney, DrPH; B. Jane Moore, MS; Teresa Peña, PhD; Carol H. Sanes-Miller, MS; Keith Veitch, PhD; Karen L. Woolley, PhD; and Yvonne E. Yarker, PhD

This updated Good Publication Practice (GPP) guideline, known as GPP3, builds on earlier versions and provides recommendations for individuals and organizations that contribute to the publication of research results sponsored or supported by pharmaceutical, medical device, diagnostics, and biotechnology companies. The recommendations are designed to help individuals and organizations maintain ethical and transparent publication practices and comply with legal and regulatory requirements. These recommendations cover publications in peer-reviewed journals and presentations (oral or poster) at scientific congresses. The International Society for Medical Publication Professionals invited more than 3000 professionals worldwide to apply for a position on the steering committee, or as a reviewer, for this guideline. The GPP2 authors reviewed all applications (n = 241) and assembled an 18-member steering committee that represented 7 countries and a diversity of publication professions and institutions. From the 174 selected reviewers, 94 sent comments on the second draft, which steering committee members incorporated after discussion and consensus.

The resulting guideline includes new sections (Principles of Good Publication Practice for Company-Sponsored Medical Research, Data Sharing, Studies That Should Be Published, and Plagiarism), expands guidance on the International Committee of Medical Journal Editors' authorship criteria and common authorship issues, improves clarity on appropriate author payment and reimbursement, and expands information on the role of medical writers. By following good publication practices (including GPP3), individuals and organizations will show integrity, accountability, and responsibility for accurate, complete, and transparent reporting in their publications and presentations.

Ann Intern Med. doi:10.7326/M15-0288 www.annals.org
For author affiliations, see end of text.
This article was published online first at www.annals.org on 11 August 2015.

Why are GPP3 Guidelines Important?

- Provide guidance on how to responsibly and ethically develop and publish findings from clinical trials sponsored by pharmaceutical companies
- Demonstrate industry's commitment to integrity, accountability, and responsibility for accurate, complete and transparent reporting of company-sponsored publications
- Broadly applicable to non-industry sponsored research such as academic and government funded work

Why are GPP3 Guidelines Important? (Contd)

"If these efforts do not soon bring about a necessary sea change in the way industry funded trials are performed, the BMJ may well decide to stop publishing them. Whether an editor would survive such a decision is a question I may have to test."

Fiona Godlee, editor in chief BMJ 2014;348:g171

Source:
Battisti WP, et al. Ann Intern Med 2015.
Smith R, et al. BMJ 2014;348:g171 doi: 10.1136/bmj.g171

What's new in GPP3?

New elements include:
1. Guidance on updated ICMJE 2014 authorship criteria
2. Guidance on common issues regarding authorship
3. Guidance and improved clarity on author payment and reimbursement
4. Additional clarity on what constitutes ghost or guest authorship
5. **Expanded information on the role and benefit of professional medical writers**
6. Guidance for appropriate data sharing
7. Overall simplification of language and format with a new guiding principles section and quick reference tables addressing guidance on authorship criteria and common authorship issues

GPP3 Section 2.4: Professional Medical Writers

	2.4.2: Working With Authors
1	The authors will control and direct the content of the publication or presentation. The writer must receive direction from the authors at the earliest possible stage (for example, before the outline is prepared)
2	All authors have agreed to the writer's involvement.
3	All authors have a documented agreement with the sponsor that identifies their respective rights, roles, and responsibilities.
4	The authors will disclose, at a minimum, the writer's name, professional qualifications, affiliation, funding source, and any other information required by the journal or congress.
5	Good publication practices will be followed.

Battisti WP, et al. Ann Intern Med 2015.
*Mansi BA, et al. Mayo Clin Proc. 2012.

GPP3 Guidance on Authorship

GPP3 provides insights and examples to help clarify

ICMJE INTERNATIONAL COMMITTEE of MEDICAL JOURNAL EDITORS

Annals of Internal Medicine RESEARCH AND REPORTING METHODS

Good Publication Practice for Communicating Company-Sponsored Medical Research: GPP3

1 Substantial contributions to: the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work	**Defines what is substantial contribution and what it is not with examples**
2 Drafting the work or revising it critically for important intellectual content	**Provides clarity on what constitutes a critical revision**
3 Final approval of the version to be published	**Important for the author to read the entire manuscript**
4 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	**Each author is accountable for the work and should have confidence in the integrity of other authors' contributions**

Authors must meet all 4 criteria

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www.icmje.org

KLINTEC Academy

Common Authorship Issues

Most common authorship issues addressed in GPP3 include:

1. Number of authors
2. Author Sequence
3. Addition or removal of authors
4. Death or incapacity of an author
5. Change of affiliation
6. Company or sponsor-employed authors
7. Professional writers as authors

AMWA's 75th Annual Conference

Battisti WP, et al. Ann Intern Med 2015.

Good publication practice

- Read “Guidelines on good publication practice” from the Committee on Publication Ethics (COPE)
- Available free at www.publication ethics.org.uk

Writing the Scientific Abstract

Overview

- Purposes and uses of abstracts
- Types of abstracts
- Common errors
- The writing and the writing process
- Special considerations for presentations, meetings, posters, etc

The Abstract

- The abstract should be the best part of the paper!
- It is the most frequently read part of an article after the title.

Purposes of the Abstract

- Provides an overview of the article (readers may read nothing else)
- Provides context for those who do read the article
- Used by journals to assign reviewers
- Used by abstracting and information services to index and retrieve articles
- Used by translation services for foreign readers

Purposes of the Abstract

- Helps reader decide whether to read the article (i.e. is this important to me?)
- Provides reminders for readers after they've read the article
- Directs readers' attention to the highlights of the article

Characteristics of the Abstract

- Accurate, coherent, and readable
- Concise, specific, and selective
- Self-contained, ie, stand alone

Characteristics of the Abstract

- Complete and internally consistent
- No references
- No tables or figures
- No or few abbreviations (must be defined)
- Conclusions should be based on data/info presented within the abstract

- Self-contained, i.e. stand alone

What Abstracts Are NOT

- Not substitutes for the article and should not be cited as references
- Not a summary of the entire article; should present main finding
- Do not contain enough information for a critical evaluation of the research
- Not fully peer-reviewed; up to 60% are never followed by a complete scientific article

Content of an Abstract

- Define purpose and scope of study, ie, the question
- Describe materials and methods used
- Summarize the results
- State the conclusions and their implications

The Writing

- Continuity
  - Repeat key terms
  - Consistent order
  - Consistent point of view in the question and answer
- Parallel form!
- Verb tenses: same as in the paper
  - Present tense for question and answer (intro and discussion/conclusions)
  - Past tense for methods and results

The Writing Process

- Read paper carefully
- Mark key words and sentences (look for the why, how, what and so what)
- List all marked material
- Edit to condense
- Refine to reflect desired style

- Define purpose and scope of study, ie, the question

  Introduction
- Describe materials and methods used

  Materials and Methods
- Summarize the results

  Results
- State the conclusions and their implications

  Discussion

Introduction	Why?
Materials and Methods	How?
Results	What?
Discussion	So What?

Types of Abstracts

- Descriptive abstracts
- Indicative abstracts (review articles)
- Informative abstracts (results papers)
- Structured abstracts
- Presentation, meeting, poster abstracts

Descriptive Abstracts

- Indicate the scope of the findings
- Contain little substantive information
- Emphasize the report itself, not its contents
- Called “pap” abstracts
  “A study was undertaken, the data were accumulated, and some interesting observations were made. Our conclusions are given.”

Descriptive Abstracts- example

This report describes a brief, 15-session couples group therapy format developed by a university-affiliated human sexuality clinic for the simultaneous treatment of marital and sexual dysfunctions. The major marital and sexual themes addressed in this group treatment design, an overview and description of the structure of the cognitive-behavioral approach, and a case illustration are presented.

Indicative Abstracts

Abstracts of Review Articles

- State objective of review
- Give succinct summary of the data sources
- Specify criteria used to select studies
- Describe guidelines used for abstracting data and assessing data quality
- State main results of review and methods used to obtain these results
- State conclusions and potential applications of the results

Indicative Abstracts-*Example*

Objective—To review the literature relating to the effectiveness of education strategies designed to change physician performance and health care outcomes.

Data Sources—We searched MEDLINE, ERIC, NTIS, the Research and Development Resource Base in Continuing Medical Education, and other relevant data sources from 1975 to 1994, using continuing medical education (CME) and related terms as keywords. We manually searched journals and the bibliographies of other review articles and called on the opinions of recognized experts.

Study Selection— We reviewed studies that met the following criteria: randomized controlled trials of education strategies or interventions that objectively assessed physician performance and/or health care outcomes. These intervention strategies included (alone and in combination) educational materials, formal CME activities, outreach visits such as academic detailing, opinion leaders, patient-mediated strategies, audit with feedback, and reminders. Studies were selected only if more than 50% of the subjects were either practicing physicians or medical residents.

Data Extraction— We extracted the specialty of the physicians targeted by the interventions and the clinical domain and setting of the trial. We also determined the details of the educational intervention, the extent to which needs or barriers to change had been ascertained prior to the intervention, and the main outcome measure(s).

Data Synthesis— We found 99 trials, containing 160 interventions, that met our criteria. Almost two thirds of the interventions (101 of 160) displayed an improvement in at least one major outcome measure: 70% demonstrated a change in physician performance, and 48% of interventions aimed at health care outcomes produced a positive change. Effective change strategies included reminders, patient-mediated interventions, outreach visits, opinion leaders, and multifaceted activities. Audit with feedback and educational materials were less effective, and formal CME conferences or activities, without enabling or practice-reinforcing strategies, had relatively little impact.

Conclusion—Widely used CME delivery methods such as conferences have little direct impact on improving professional practice. More effective methods such as systematic practice-based interventions and outreach visits are seldom used by CME providers

Abstracts of Results Papers

- State briefly the content of the paper
- Follow the sequence of the article
  - Intro, Method, Results, Discussion
  - Also possibly Background, Conclusions, Implications
- Include the species or population, study design or experimental approach, and independent and dependent variables
- Represent each section of the paper by at least one sentence in the abstract

Common Errors

- Inconsistency between text and abstract (~50%)
- Reporting data not present in the paper (~30%)
- Both (15%)

Informative Abstracts

Research Paper	Case Report
Study design	Patient
Experimental subjects	Unusual features of the case
Methods	
Results	
Interpretation	

Informative Abstracts- example

In view of the remarkable decrease of the relative heart weight (HW) and the relative blood volume in growing pigs, we investigated whether HW, cardiac output (CO), and stroke volume (SV) of modern growing pigs are proportional to BW, as predicted by allometric scaling laws: HW (or CO or SV) = a●BWb, in which a and b are constants, and constant b is a multiple of 0.25 (quarter-power scaling law). Specifically, we tested the hypothesis that both HW and CO scale with BW to the power of 0.75 (HW or CO = a●BW0.75) and SV scales with BW to the power of 1.00 (SV = a●BW1.0).

Informative Abstracts- example (contd)

For this purpose, 2 groups of pigs (group 1, consisting of 157 pigs of 50 ± 1 kg; group 2, consisting of 45 pigs of 268 ± 18 kg) were surgically instrumented with a flow probe or a thermodilution dilution catheter, under open-chest anesthetized conditions to measure CO and SV, after which HW was determined. The 95% confidence intervals of power-coefficient b for HW were 0.74 to 0.80, encompassing the predicted value of 0.75, suggesting that HW increased proportionally with BW, as predicted by the allometric scaling laws.

Informative Abstracts- example (contd)

In contrast, the 95% confidence intervals of power-coefficient b for CO and SV as measured with flow probes were 0.40 to 0.56 and 0.39 to 0.61, respectively, and values obtained with the thermodilution technique were 0.34 to 0.53 and 0.40 to 0.62, respectively. Thus, the 95% confidence limits failed to encompass the predicted values of b for CO and SV of 0.75 and 1.0, respectively. In conclusion, although adult breeding sows display normal heart growth, cardiac performance appears to be disproportionately low for BW. This raises concern regarding the health status of adult breeding sows.

J Anim Sci 2011;89(2):376-382

Structured Abstracts

- Also called “more informative” abstracts
- Purposes:
  - Help readers quickly judge the findings of a study
  - Guide authors into better summaries
  - Aid reviewers
  - Facilitate electronic searches (eg, MEDLINE)
- Include headings
- May use incomplete sentences
- Follow journal requirements

Structured Abstracts-example

Background—Dual-chamber (atrioventricular) and single-chamber (ventricular) pacing are alternative treatment approaches for sinus-node dysfunction that causes clinically significant bradycardia. However, it is unknown which type of pacing results in the better outcome.

Structured Abstracts-example (contd)

Methods—We randomly assigned a total of 2010 patients with sinus-node dysfunction to dual-chamber pacing (1014 patients) or ventricular pacing (996 patients) and followed them for a median of 33.1 months. The primary end point was death from any cause or nonfatal stroke. Secondary end points included the composite of death, stroke, or hospitalization for heart failure; atrial fibrillation; heart-failure score; the pacemaker syndrome; and the quality of life.

Structured Abstracts-example (contd)

Results—The incidence of the primary end point did not differ significantly between the dual-chamber group (21.5 percent) and the ventricular-paced group (23.0 percent, P=0.48). In patients assigned to dual-chamber pacing, the risk of atrial fibrillation was lower (hazard ratio, 0.79; 95 percent confidence interval, 0.66 to 0.94; P=0.008), and heart-failure scores were better (P<0.001). The differences in the rates of hospitalization for heart failure were not significant in unadjusted analyses but became marginally significant in adjusted analyses. Dual-chamber pacing resulted in a small but measurable increase in the quality of life, as compared with ventricular pacing.

Structured Abstracts-example (contd)

Conclusions—In sinus-node dysfunction, dual-chamber pacing does not improve stroke-free survival, as compared with ventricular pacing. However, dual-chamber pacing reduces the risk of atrial fibrillation, reduces signs and symptoms of heart failure, and slightly improves the quality of life. Overall, dual-chamber pacing offers significant improvement as compared with ventricular pacing.

Preparing Poster Presentations

Why Posters?

- An opportunity to effectively share research results and engage in scientific dialog with colleagues
- Good posters can attract attention of peer researchers during conferences. Act as a conversation starter - they engage people in discussion about your work.
- Posters act as a medium to advertise your work;
- They enable you to summarise your work – and to get your main points across to a larger audience
- Feedback received can help in refining your research and preparing it for publication

Thinking about your poster

- Key questions need to be answered before you get to the design stage.
- These are:
  - Who is your audience?
    - Professionals, academics, the general public – the language used and messages given out need to meet the needs of your audience
  - What is your hook?
    - Catchy titles provide the feature that may draw your audience in to peruse your poster. Is the message clearly stated and will it capture the attention of your audience?
  - What is the purpose of your poster?
    - Consider what messages you wish to communicate and the audience receiving the messages. Remember you need to present a coherent snapshot of your research
  - What are the guidelines for your poster?
    - Refer to your brief
  - What is your message?
    - Effective posters deliver clear messages, content is highly visual

Planning your poster

- An effective poster should have following features:
  - Legible from a distance of about six feet away,
  - Use a title that captures the attention of audience, and is readable from about 15 - 20 feet away.
  - Have enough 'white' space which aids readability,
- Use of bullets, numbering, and headlines make it easy to read
- Effective use of graphics, colour and fonts
- Consider using original/owned photos or source photos which are "royalty free" to avoid any potential copyright issues
- Consistent and clean layout
- Includes acknowledgments, name and institutional affiliation

Things to think about

- People read posters from left to right and top to bottom – consider your layout – portrait/landscape. Be guided by your conference brief
- Using too much jargon may confuse your audience, unless they are specialists in your field and already know the jargon
- What message will readers take home with them? – what will they remember about your work?
- Colour schemes – think about the tones and hues, avoid large swathes of garish colours
- Word count – a typical poster will have between 300 – 500 words, audience dependent (Anon, n. d)

Cont'd...

- Font – Avoid using more than two different fonts. Choose a font such as Arial
- Use a good balance of text, pictures, charts and graphics. The text should support your images and vice versa
- The size of your poster and the orientation you will use
- Line spacing and text justification – left justification maybe easier to read

Cont'd...

- Getting it printed – matt/glossy to laminate or not to laminate – a matt finish reduces glare. Laminated posters travel better so this might be worth considering – refer to conference brief
- At the printers -When arranging to get your poster printed it might be useful to find out if they print use RGB (red green and black) or CMYK (cyan magenta (purplish pink) yellow black – four colour printing) as this can affect your final print version of your poster. e.g. purple may appear as more of a pink hue than true purple
- Most PCs are set to RGB as default – custom colours

Design tips

- Plan your poster – preparation is key
  - Consider using a sheet of flipchart paper during preliminary planning.
- Do not clutter the poster
- Be creative and proofread

Design tips (contd)

- Think outside of the box – what images best capture the messages you are attempting to give out?
- Use arrows, number, boxes, headings to guide readers through your poster
- Do not forget to include you title, names, supervisor details (if relevant), company logo (where necessary/relevant) any other affiliations and possibly your email address. Ideally, you want people to be able to contact you about your research

Cont'd...

- What to include?
- Think about - 'Introduction', 'Methods', 'Results' and 'Conclusions', 'References'. Be guided by your conference brief
- Use indents, justification and a variety of formatting to highlight your main points e.g. bold titles
- Identify the most innovative, exciting and relevant aspects of your work to present in your poster

What software can I use to make a poster?

- PowerPoint: A popular, easy-to-use option. It is part of Microsoft Office package
- Adobe Illustrator, Photoshop and InDesign: Feature-rich professional software that is good for posters including lots of high-resolution images, but they are more complex and expensive.
- Open Source Alternatives: OpenOffice in the free alternative to MS Office (Impress is its PowerPoint alternative). Inkscape and Gimp are alternatives to Adobe products. For charts and diagrams try Gliffy or Lovely Charts.

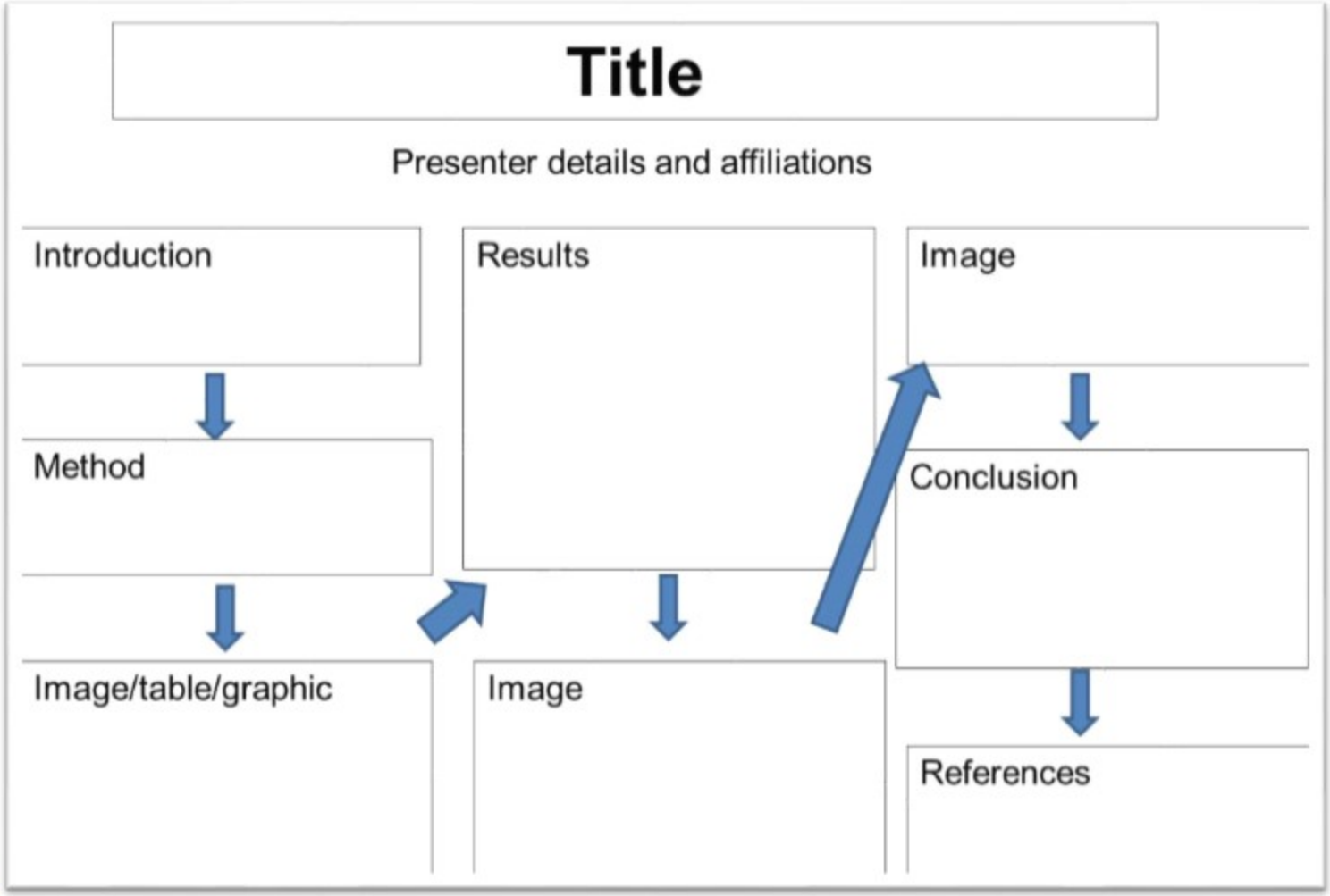
Choose the right kind of chart

Chart type	Best use
Bar charts	Show comparisons
Horizontal bars	Only used to show time
Line charts	Illustrate trends
Pie charts	Relationship to whole – big picture (%)
Text	The last resort

Graphics and Resolution Tips

- Print formats: 600-1200 DPI (dots per inch)
  - TIFF, EPS, WMF, JPG?
- Screen formats: 72 DPI (dots per inch)
  - GIF, JPG, WMF
- Scan new color graphics at 150-200 DPI
  - Higher for black and white

Some Sample Templates


Title
Presenter details and affiliations
Introduction
Method
Image/table/graphic
Results
Image
Image
Conclusion
References

This is the Title of Your Presentation

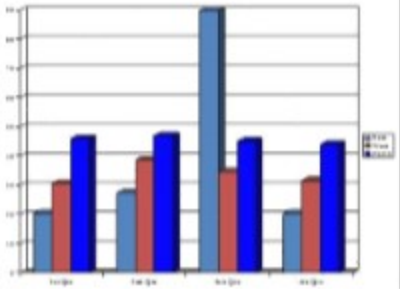
Your Name, Title, Affiliation

Introduction and Objectives

Lay in your introduction

Population Studied

Methodology



Discussions

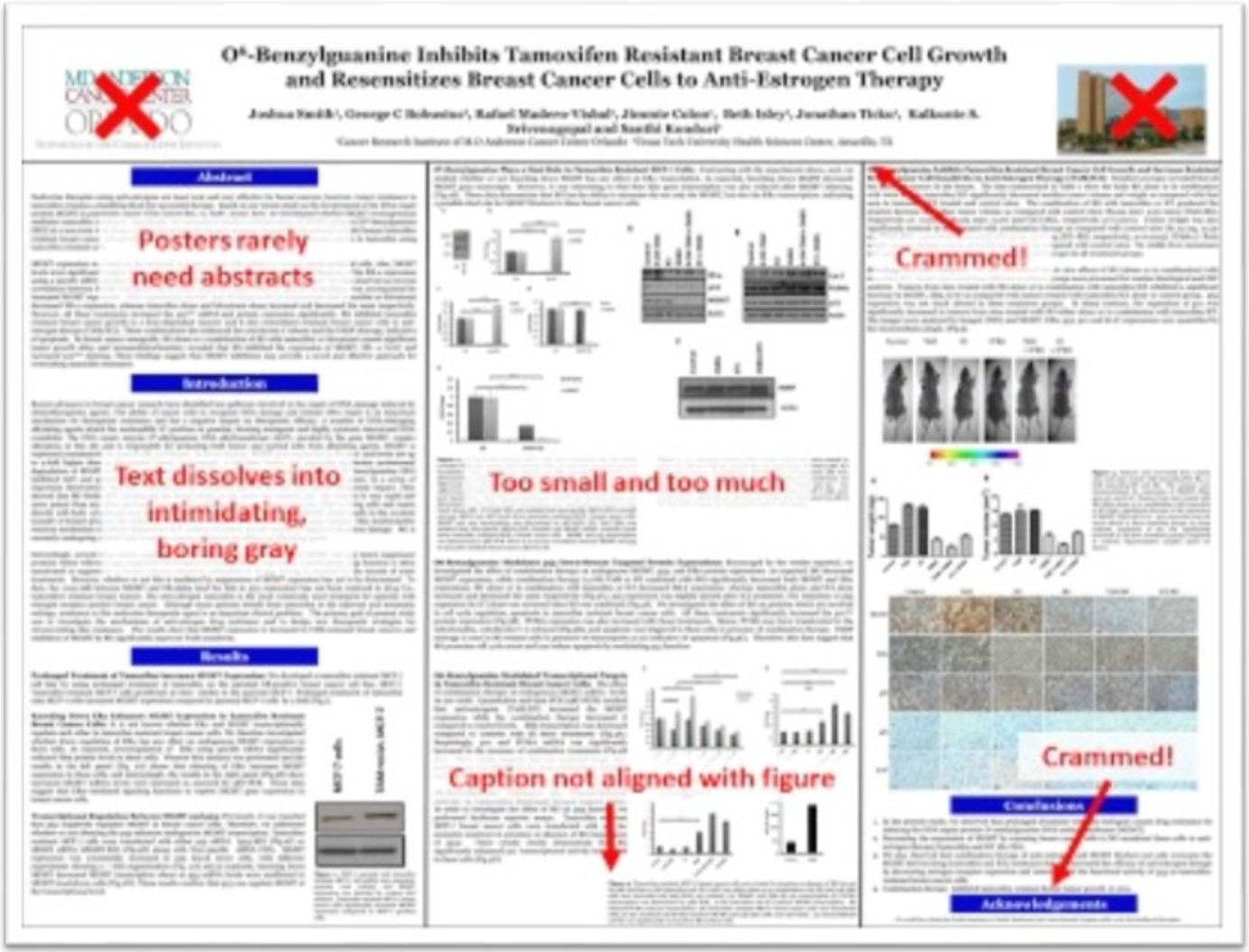
Study conclusions and ideas for new research

Funding Source

Good poster


Tips for Designing Effective Presentations
A poster with the main title in 1½" sans serif
Get the audience's attention and communicate your message quickly and succinctly.
Choosing and Using Color
Developing a Layout
Planning
Selecting Fonts and Using Text
Using Images
Judges Checklist
Viewers reading this line demonstrate the poster's success!

Poor poster


O⁶-Benzylguanine Inhibits Tamoxifen Resistant Breast Cancer Cell Growth and Resensitizes Breast Cancer Cells to Anti-Estrogen Therapy
Posters rarely need abstracts
Text dissolves into intimidating, boring gray
Too small and too much
Crammed!
Caption not aligned with figure
Crammed!

Presenting the Poster

- Use the poster as a visual aid
  - Refrain from reading it
- Use the graphics to support your points when telling your story
- Prepare a 2 and 5 minute tour of the poster