



EUPHEM

In less than few words

Writing an abstract

Key areas

1. Abstracts: Use and guiding principles
2. The abstract, section by section
3. Editing an abstract

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1. Abstracts: Use and guiding principles
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Why do we use abstracts?

- Submit a request to present at a conference
- Summarize information of a paper

The abstract prepared for a conference

- Objective
 - Gain acceptance to present at a conference
- Circumstances
 - Written **before** the completion of final report
 - Written just after the (preliminary?) data analysis
- Remains in the proceedings
- **May be quoted in the future**

The abstract of a manuscript

- Objective
 - Summarize the key elements of a manuscript
- Circumstances
 - Finalized **after** the completion of the manuscript
 - Based upon final analysis
 - Update of the old conference abstract after completion of the paper
- Present in Medline
- **May be the only thing that will be read**

Basic rules for an abstract

- Summarize the source report
- Follow the order/ logic of source report
- Remain independent from the source report
 - Self-sufficiency
- Include only information from source report
 - No other data
 - No references

Initial steps to prepare an abstract

- Chose topic
- Review data / report
 - Five tables / figures
 - Captions for the tables and figures
 - Main trends and main exceptions to these trends
- Review rules of conference or journal
- Extract material from report
- Organize material within outline
- Start writing

Checklist to choose a topic for an abstract to be submitted to a conference

- ✓ Investigation completed
- ✓ Analysis completed
- ✓ Data tables ready
- ✓ Key graphs drawn
- ✓ Main conclusions and recommendations clear
- ✓ Results discussed with team:
 - Institutional clearance (e.g., Supervisor)
 - Technical green light (e.g., Coordinator)

Things to avoid when choosing a topic to present at a conference

- ✘ Investigation already presented
- ✘ Investigation already published
- ✘ Incomplete analysis
- ✘ Uncertainty on key interpretation
- ✘ Absence of agreement to go public

Conferences and journals may prefer structured or unstructured abstracts

- Structured (Most common)
 - Introduction, methods, results and conclusion
- Unstructured (Less common)
- Common word limits
 - 250-275 structured
 - 100 unstructured
 - Write structured abstract
 - Edit to cut words and remove structure if needed
- Always easier to start structured□

Abstract structure

- Title
 - Short but precise (Write last)
- Background
 - One sentence: Why the study / investigation was done
 - One sentence of objective(s)
- Methods
 - How it was done
- Results
 - What was found
- Conclusions and recommendations
 - What the results mean

Mini argument matrix for abstracts

- **Background / Introduction**
 - Outbreak of resistant gram negative pathogens persisted for more than a year -> need to understand why
- **Methods**
 - Knowledge Attitude Practices (KAP) survey of health care workers re: infection control
- **Results**
 - 46% of health care workers unaware of principles of standard precautions (SP)
- **Conclusions / recommendations**
 - Breaks in SP -> Train health care workers on the job

Building an autonomous abstract (1/2)

1. Start from the data in the results
 - What are the KEY data elements
 - Summarize for the results paragraph
2. Draw key general conclusion sentence
 - Strictly based upon the data presented
3. Formulate key recommendation
 - Direct deduction of the conclusion
 - Strictly based upon the data presented

Building an autonomous abstract (2/2)

4. Summarize the methods

- What is strictly necessary to believe results

5. Shape the introduction

- One sentence of rationale:
Explain why the study was done
- One sentence of objective:
Explain what the team tried to achieve

• Final check

- Does the conclusion match the objective?

Keywords

- Two key purposes:
 - Facilitate searches
 - Assign papers to reviewers
- Tips:
 - Use Medical Subject Headings (MESH)
www.nlm.nih.gov/mesh/
 - Pick key words to aim at the right category
 - E.g., list of conference topics

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What must be in the background / introduction?

- Most important information:
 1. Reasons that led to conduct the study
 2. Objective of the study
 - Question that required an answer
- If necessary and possible:
 - Document the importance of the topic
 - Key essential background information
 - (Within these two sentences)

Example of background / introduction

Importance	Position	Topic	Example
+++	3rd	Objective of the study	<ul style="list-style-type: none">• We investigated the outbreak to identify its source
++	2nd	Reasons that led to conduct the study	<ul style="list-style-type: none">• On XX May 200X, a cluster of gastro-enteritis was reported among guests of a wedding
+	1st	Importance of the topic / key background	<ul style="list-style-type: none">• Gatherings are common causes of food-borne outbreaks

Introduction: ‘Dos’ and ‘Don’ts’

- x Norovirus is an important public health problem. Norovirus also increased recently in Berlin. Therefore an investigation was started.“
- ✓ In January 2007, the City of Berlin notified the Robert Koch-Institut of an 10-fold increase of reported norovirus infections since November 2006. We investigated the outbreak to identify the source, estimate the magnitude and implement control measures

What must be in the methods ?

- Study design
- Definitions
- Participants
- Any interventions, treatments
- Data collection
- Analysis
- Additional investigations:
 - Laboratory methods
 - Environmental assessment

Methods: ‘Dos’ and ‘Don’ts’

- x “A case-control study was carried out. Interviews were done by standard questionnaire”
- ✓ “We compared cases with matched controls. We defined cases as... We interviewed cases and randomly chosen population controls by telephone on food habits...”

Example of a methods section

We defined gastro-enteritis as an acute onset of vomiting or diarrhea in the 24 hours following the banquet. [Definitions] We compared the attack rate of illness [Analysis] among the wedding guests [Participants] according to their consumption of the various food items [Design] on the basis of information collected using a standardized questionnaire [Data collection]. We collected leftover food items and stool specimens for laboratory investigations [Laboratory methods] and probed food handlers for preparation methods. [Additional investigations]

What must be in the results?

- Summary of data
 - Response
 - Characteristics of participants
 - Median age, % males
 - Indicators
 - Statistics
 - Additional investigations
- Evidence addressing objectives
- Emphasize elements that support:
 - Conclusions
 - Recommendations

Results: 'Dos' and 'Don'ts'

- x „Salad was significantly associated with norovirus“
- ✓ „Cases were more likely to have eaten salad than controls (odds ratio: XX-XX, confidence interval: XX-XX).“

Example of results section

We interviewed XXX of the XXX guests (XX%) [Response]. The median age was XX years, XX (XX%) were female, [Characteristics of subjects] and XXX were sick (XX%). [Indicators] The attack rate was higher among those who ate the fried fish compared to those who did not (relative risk: XX, 95% confidence interval: XX-XX, attributable fraction: XX%). [Statistics] We identified the Staphylococcus toxin in the food leftovers [Additional investigations]. A food handler with chronic staphylococcus infection left the fish egg-based batter at room temperature 5 hours before frying [Additional investigations].

What must be in the conclusion ?

- Key conclusion
 - Integrate multiple lines of supporting evidence (if necessary)
 - Xxx and xxx suggested that xxx
- Key recommendation or action
 - Mention actual or potential effect of the action (If possible)
- Limit to issues directly supported by data
- Remain general and robust
 - Preliminary report

Last paragraph: ‘Dos’ and ‘Don’ts’

- x „It was proven that the salad was the source of the outbreak. “
- ✓ „Epidemiological investigations along with laboratory testing suggested that the unwashed salad may have been the vehicle of the outbreak. Salad must be washed carefully before being served.“

Example of conclusion section

Epidemiological, laboratory and environmental evidence suggested that an infected food handler with poor food hygiene practices may have caused this staphylococcus food-borne intoxication. [Key conclusion] Public health authorities must work with food handlers to improve food safety during gatherings. [Key recommendation]

A good title

- Short
- Precise
- Informative:
 - Type of study / investigation
 - Question asked / Answer provided
 - Main message
 - What, Where, When
 - Emphasize what is new
- Try to start and finish with important words

Example of title

- Not:
 - „Norovirus outbreak in Berlin“
- But:
 - „Poor hygiene among food handlers leading to norovirus outbreak in Berlin, 2007“

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Polishing an abstract: Take the time

- ‘Colleague treatment’: Pass around
- ‘Drawer treatment’: Leave aside
- Worry about the word count in the end
- Rewrite as many times as necessary
 - Improvement in format
 - Improvement in content
 - The short format may bring to light key issues

Allow plenty of time for revisions: Do not start the day before the deadline

- Write
- Re-write
- Share with co-authors
- Share with supervisors
 - Revise, revise, revise
 - Conduct final radical wordectomy (at the end)
- Check with editor
- Seek institutional clearance
- Seek technical green light

Rule #1: The primacy of data

- Do not begin without data
- Maximize space devoted to data
- Quantify, don't qualify
 - ~~Most participants~~ → 74% of participants
- Minimize space for words that do not provide data or information:
 - × “Additional data will be shown”
 - × “These results will be discussed”
 - × “Have not yet been established”

Simplicity and objectivity

- Avoid repetition or redundancy
 - Say it once, say it well, say it in the right place
 - Time and place can be mentioned in the title
- Do not add material not found in report
- Avoid explanations
 - Let the data explain
- Avoid distorting elementary messages
- Remain objective
 - Don't say it's important: Provide the evidence and let the reader decide of the importance

Specificity

- Avoid vague, unclear or obvious statements
- Strong verbs make strong sentences:
 - ✗ “A descriptive study was done”
 - ✓ “We performed a matched case control study”
 - ✓ We compared XX cases with XX controls
 - ✓ Compared with the XX controls, the XX cases
- Specify methods of measurement
- Give figures whenever possible
- Describe before interpreting
 - ✗ “A point source was noted”
 - ✓ “Case counts rose from July 7, peaked on July 10 and decreased to baseline levels by July 14”

A situation we all encountered

- Draft well prepared
- Comments from colleagues:
 - ‘Excellent!’
 - (but)
 - ‘Could be ever better if... (dozens of edits)’
- How to interpret?
- Accept that a good draft can be improved
 - Lower defenses
 - Examine carefully

Different comments from different reviewers?

- Hard to make them all reviewers happy?
- Examine all suggestions with an open mind
- The 1st author decides. S/he is accountable
- Respectful scientific independence:
 - The 1st author is not there to make others happy
 - Other authors are not there to make the 1st happy

Light hearted peer review: Something bigger than us

- The author is detached from the work
- The reviewer is detached from the comment
- Scientific objectivity prevails
 - If it makes sense to several subjective observers
 - Then maybe there is more chance that it is objective

We write for science not for ourselves

- Stand humbly behind the evidence
 - What did we know before?
 - What does this work add?
 - Where do we go from there?
- Does the abstract contribute?
- Is it written elsewhere already?
- Did we write it elsewhere already?

Overall take home messages

1. Focus on essential, time-proof elements
2. Build a self-sufficient structured abstract
3. Edit, edit and edit
 - It is harder to be short than to be long