



Editors Canada Conference 2017

# INTRODUCTION TO MEDICAL COPY EDITING

**Kristine Thornley**

FREELANCE MEDICAL COPY EDITOR

# Agenda



Why medical copy editors are needed



Things medical copy editors need to know



Medical copy editing vs regular copy editing



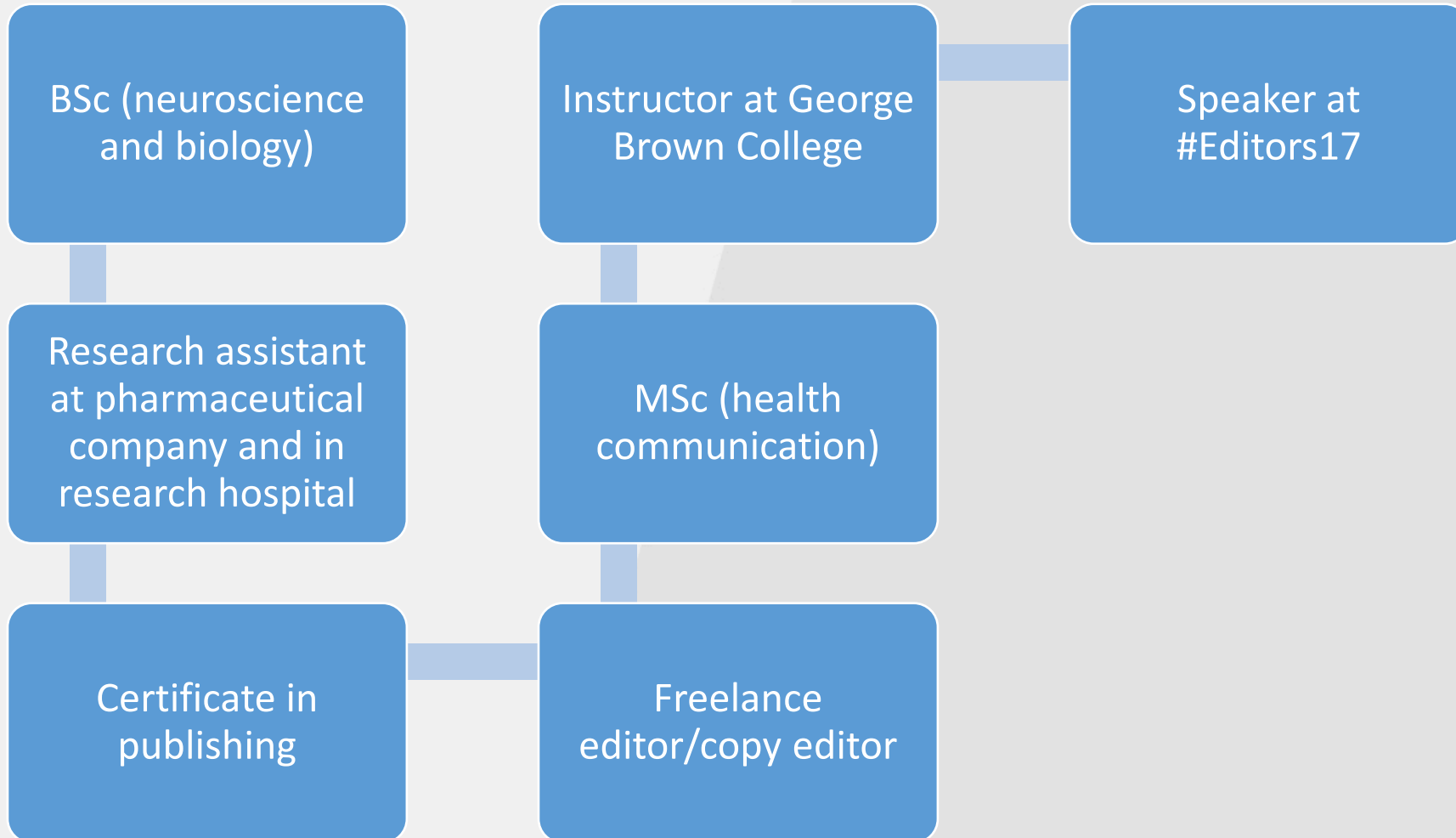
Why become a medical copy editor?



Getting started as a medical copy editor



# Kristine Thornley



# Medical Communication Issues



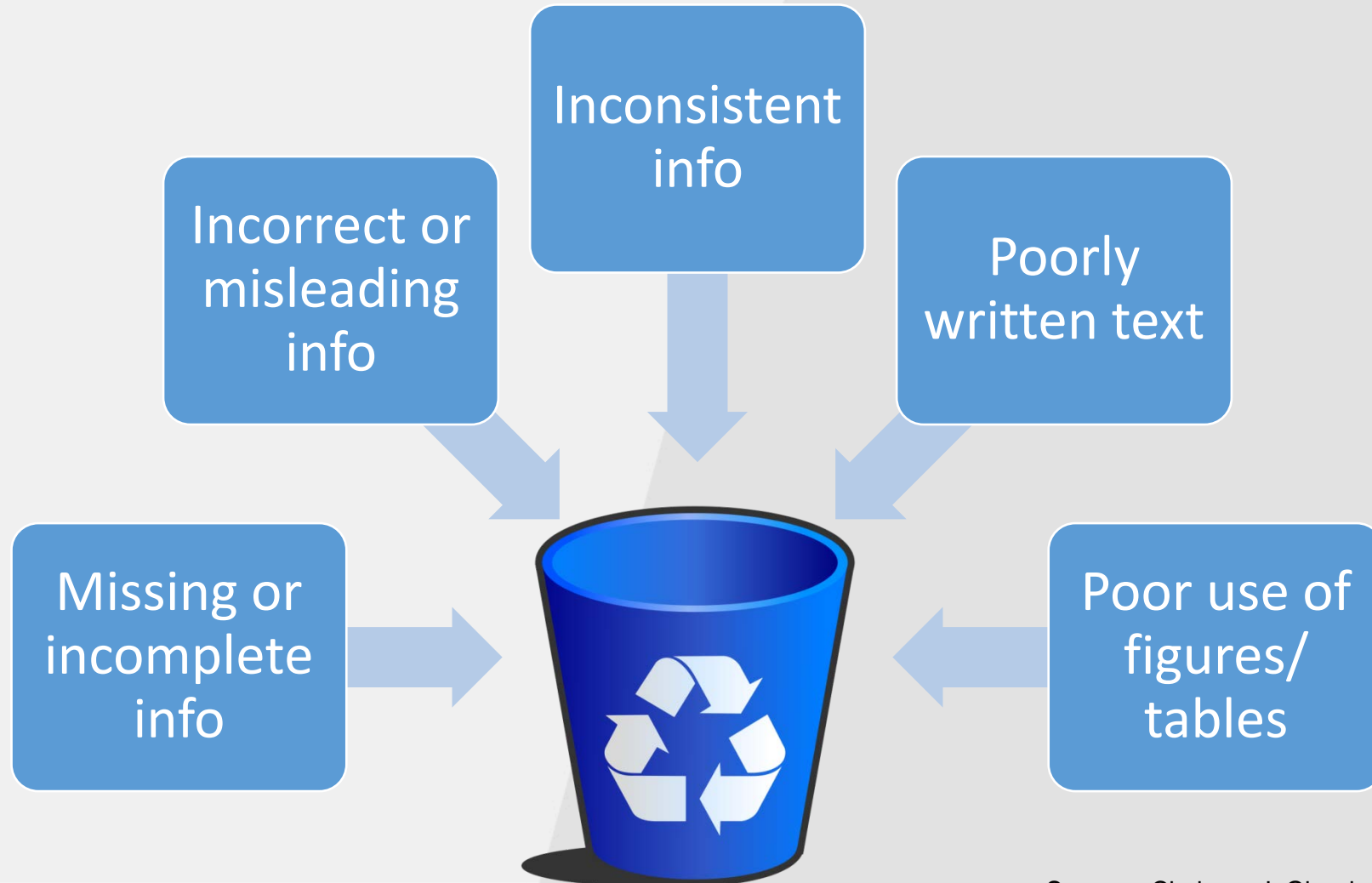
“I never cease to be amazed by the general inability of physicians, other health professionals, and scientists to communicate through the written word. Their scholarly and creative ideas and insightful data interpretation often seem to get lost in the translation from brain to page.”

Catherine D. DeAngelis, MD, MPH

Editor in Chief, *JAMA* and the *Archives* Journals



# More than half of research reports are unusable



# Issues and consequences

## Authors

- Poor communication skills
- English as a second language
- Insufficient training
- Too close to work

## Publishers

- Lack of time
- Lack of money
- Insufficient staff

## Results

- Decreased credibility
- Replication is impossible
- Patients are potentially harmed



# Medical Copy Editing





# The 4 Cs of medical copy editing

## The 4 Cs



**Clarity**



**Correctness**



**Conciseness**



**Consistency**





# Personal qualities

- Detail oriented
- Multitasker
- Lifelong learner
- Strong ethics
- Independent worker
- Good communicator
- Deadline driven



# Knowledge needed for success

## Copy editing skills

Grammar

Punctuation

Spelling and usage

## Medical knowledge

Terminology

Medical/scientific style/guidelines

Medicine and health concepts

## Also need to know

Numbers and basic statistics

Tables and figures

Bibliographic references



# Do you need a science background?

- Typically work in areas for health care professionals

Science/Medical



- Typically work in areas more for the general public

Humanities



# Different levels of medical copy editing

Basic copy  
editing



Total  
overhaul



# Medical Copy Editing

The Other Things You Need to Know



# Medical terminology



Body's systems and parts that comprise them



Basic physiology



Common medical terms and medical root words



Latin and Greek influence of medical words



Correct spelling and common errors (eg, hemorrhoid, diphtheria)



# Medical terminology

## Resources

- *Stedman's Medical Dictionary*
- *The Merck Manual of Diagnosis and Therapy*
- Wikipedia: List of Medical Roots, Suffixes, and Prefixes
- AMWA self-study workbook on Elements of Medical Terminology





# Numbers and statistics (sorry!)

- Knowledge of appropriate, accurate, and consistent presentation of numerical values in text
- Recognition of medical accuracy
- Recognition of standard forms of mathematical presentation
  - *How to Report Statistics in Medicine: Annotated Guidelines for Authors, Editors and Reviewers*
  - *Statistics for Medical Writers and Editors: An Essential Skills Workshop of the American Medical Writers Association*

**zzz**

Sound made by most people after only a short period of reading any book on statistics.



# Tables and figures

- Tables and figures are able to present information that text alone cannot
- Tables summarize, organize, and condense complex or vast amounts of data
- Figures are graphical representations of information or data

**Table 7.** Physical Risks From Sports in the Daily Lives of Healthy Children Older Than 6 Years<sup>a</sup>

Sport	Risk per Million Instances of Participation				
	Total Injuries	Permanent Disability	Total Level IV Injuries <sup>b</sup>	Surgeries	Broken Bones
Football	3800	42	500	270	910
Soccer	2400	38	300	NA	NA
Basketball	1900	58	300	160	180
Cheerleading	1700	NA	100	NA	NA
Baseball	1400	61	300	120	30
Skateboarding	800	NA	200	20	170

Abbreviation: NA, not available.

<sup>a</sup>Data adapted from American Sports Data Inc.<sup>28</sup>

<sup>b</sup>Those resulting in emergency department treatment, overnight hospital stay, surgery, or ongoing physical therapy and preventing participation in sports for at least 1 month.

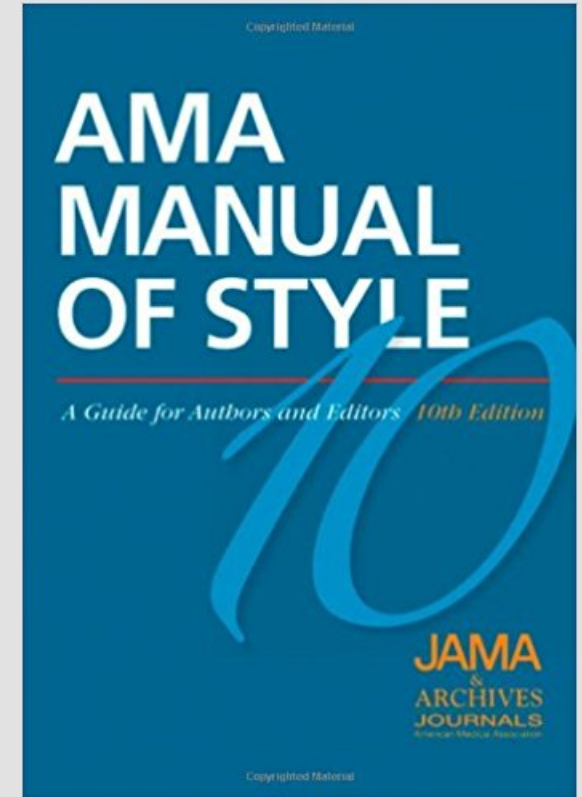
# Guidelines

- *Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals* (ICMJE Recommendations)
- Consolidated Standards of Reporting Trials (CONSORT) Transparent Reporting of Trials
- Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Transparent Reporting of Systematic Reviews and Meta-Analyses



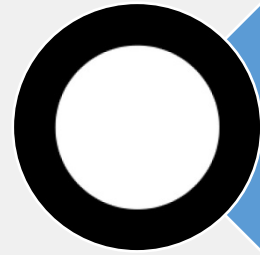
# AMA Manual of Style

- 1000-page style guide of the American Medical Association
- Widely used (in whole or with modifications) by hundreds of other medical and scientific journals, many textbooks, and in academia
- Online version includes style quizzes and a blog for discussions

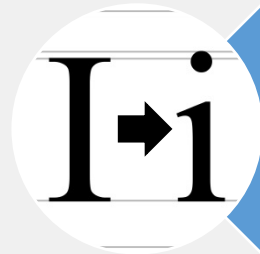


# *AMA Manual of Style*

General style



Clean, minimalist style

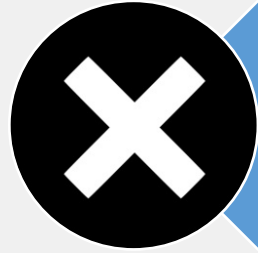


General “down” style

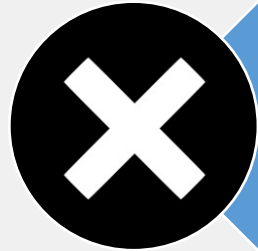


Own reference citation  
style

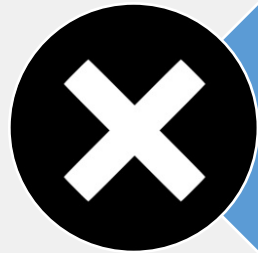




No contractions (eg, can't)



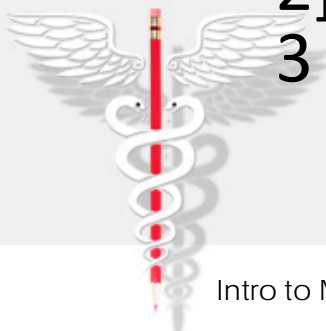
No emotion (eg, we were thrilled with the results)



Avoid the passive voice



“The greater pain caused by larger-sized tubes was the result of increased pain during the insertion of the tube and pain while the tube was in situ, with no pain difference during tube removal (insertion: size <10F, MPS 2 [IQR 1–2]; size 10–14F, MPS 2 [IQR 1–3]; size 15–20F, MPS 2 [IQR 1–3]; size >20F, MPS 2 [IQR 2–3];  $\chi^2$ , 3 df = 8.12, P=.044, Kruskal-Wallis;  $\chi^2$  trend, 1 df = 7.2, P =.009. in situ: size <10F, MPS 2 [IQR 1–3]; size 10–14F, MPS 2 [IQR 1–2]; size 15–20F, MPS 2 [IQR 2–3]; size >20F, MPS 2 [IQR 2–3];  $\chi^2$ , 3 df = 11.75, P=.008, Kruskal-Wallis;  $\chi^2$  trend, 1 df = 6.2, P =.015. removal: size <10F, MPS 2 [IQR 1–2]; size 10–14F, MPS 1 [IQR 1–2]; size 15–20F, MPS 2 [IQR 1–2]; size >20F, MPS 1 [IQR 1–2];  $\chi^2$ , 3 df = 2.7, P=.44, Kruskal-Wallis;  $\chi^2$  trend, 1 df = 1.0, P=.31.”



**“If you can’t explain it simply,  
you don’t understand it well  
enough.” -Albert Einstein**





- ✓ Keep most sentences short (<20 words)
- ✓ Use active vs passive voice
- ✓ Use common, everyday words
- ✓ Use the positive vs negative
- ✗ Avoid redundant and ambiguous words



# “TBA for OT HHC vs OPC f/u”





No periods in abbreviations (eg, CHF)



Define/expand most on first use



Avoid using/introducing in headings or subheadings



Use consistently once introduced



Avoid author-invented abbreviations



Alzheimer  
disease;  
Down  
syndrome

Fisher exact  
test;  
Bonferroni  
test;  
Cronbach  $\alpha$

Parkinson  
disease (but  
parkinsonism,  
parkinsonian  
gait)

Stein-  
Leventhal  
(polycystic  
ovary)  
syndrome



# *AMA Manual of Style*

## Hyphens

Common prefixes (eg, coauthor, antimicrobial, nonresident, posttraumatic)

Words read as a unit (eg, bone marrow biopsy)

After adverbs ending in *-ly* (eg, clinically relevant results)

Number ranges in the text (eg, 3 to 4)

Temporary compounds (eg, placebo-controlled trial)

Some prefixes before proper noun or number (eg, mid-1970s)

En dash for complex modifying phrases (eg, non-English-language journals)

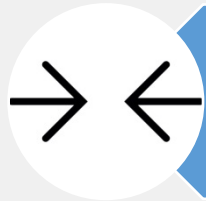




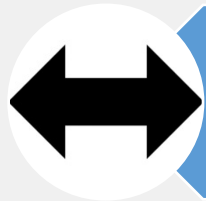
Use numerals in most circumstances



Ordinals *first* through *ninth* (10th on)



4-digit numbers are set closed up (eg, 5214 )



Use thin space between every 3 digits for numbers  $\geq 10\,000$





Avoid labeling people with their disease (eg, schizophrenics) and put person first (eg, persons with diabetes vs diabetic people)



Use humanizing, nonvictiming language (eg, participant vs subject; patient vs case; person with AIDS vs AIDS victim)



Use sex-neutral terms (eg, firefighter vs fireman) and avoid sex-specific pronouns



Use race/ethnicity designations that individuals/groups prefer and avoid convenience groupings (eg, nonwhite)

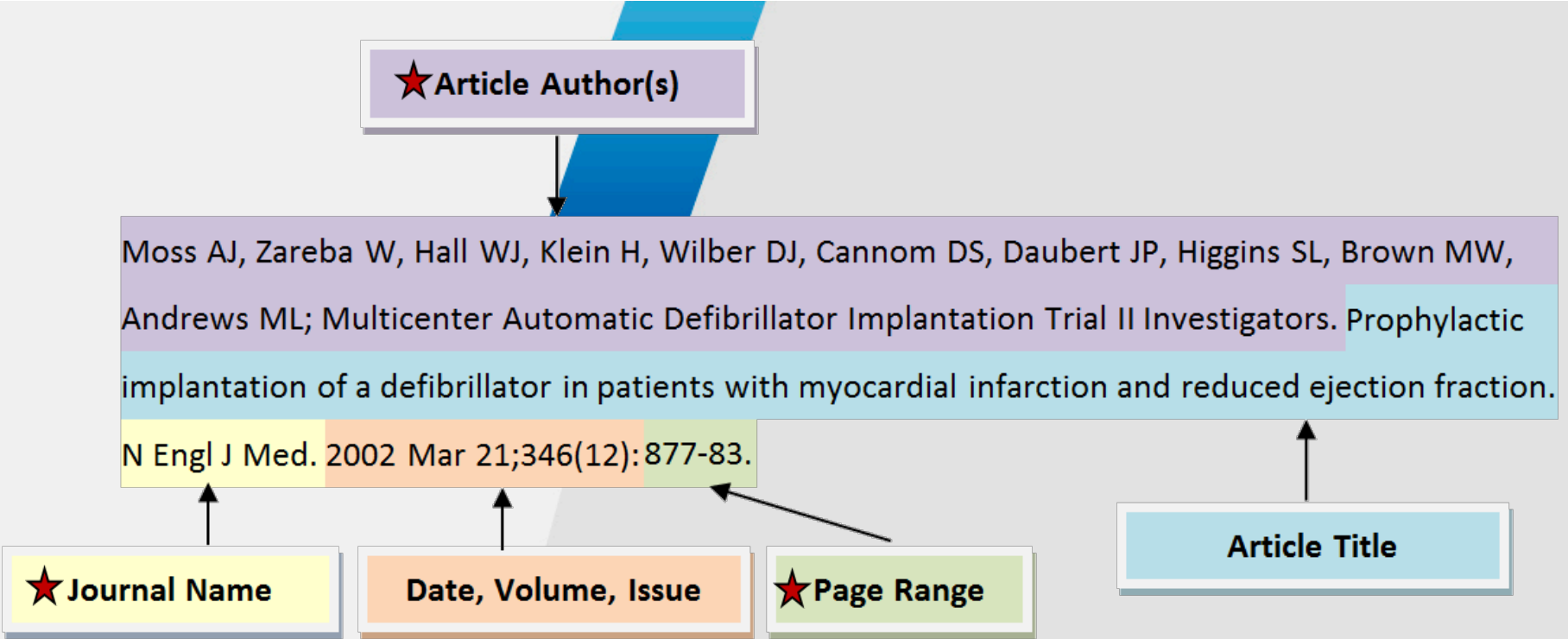


Avoid generalizations, stereotypes, and inappropriate metaphors (ie, blind to the truth)

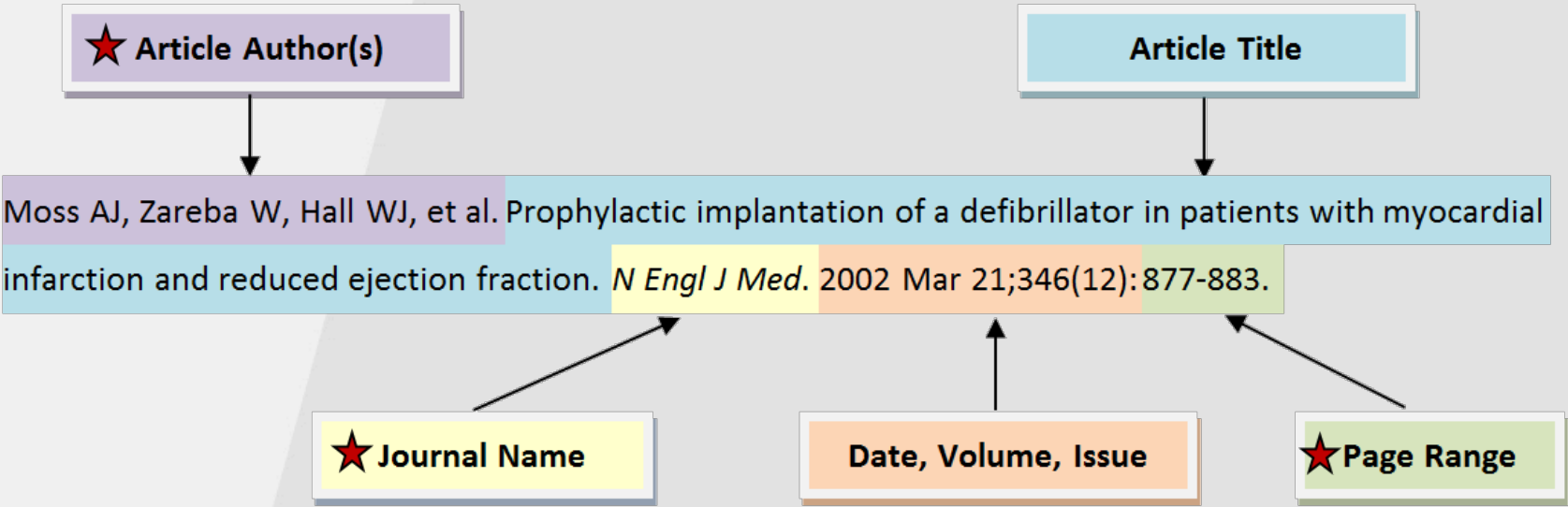


# References

## Vancouver



## AMA





# Why Become a Medical Copy Editor?



# Medical copy editors work in many places

Pharmaceutical  
companies

Hospitals and  
medical centres

Academic  
institutions

Medical/health  
websites/apps

Journals

Government  
agencies

Newspapers

Contract  
research  
organizations

Medical/health  
publishers

Medical  
education  
companies

Health  
advocacy  
groups

Medical device  
companies



# Some documents medical copy editors work on

## Pharmaceutical/ Regulatory docs

Clinical  
protocols

Drug  
applications

New device  
documents

## Medical publications

Journal articles

Books/textbooks

Clinical practice  
guidelines

## Patient education

Disease-specific  
resources

General health  
articles

Web content

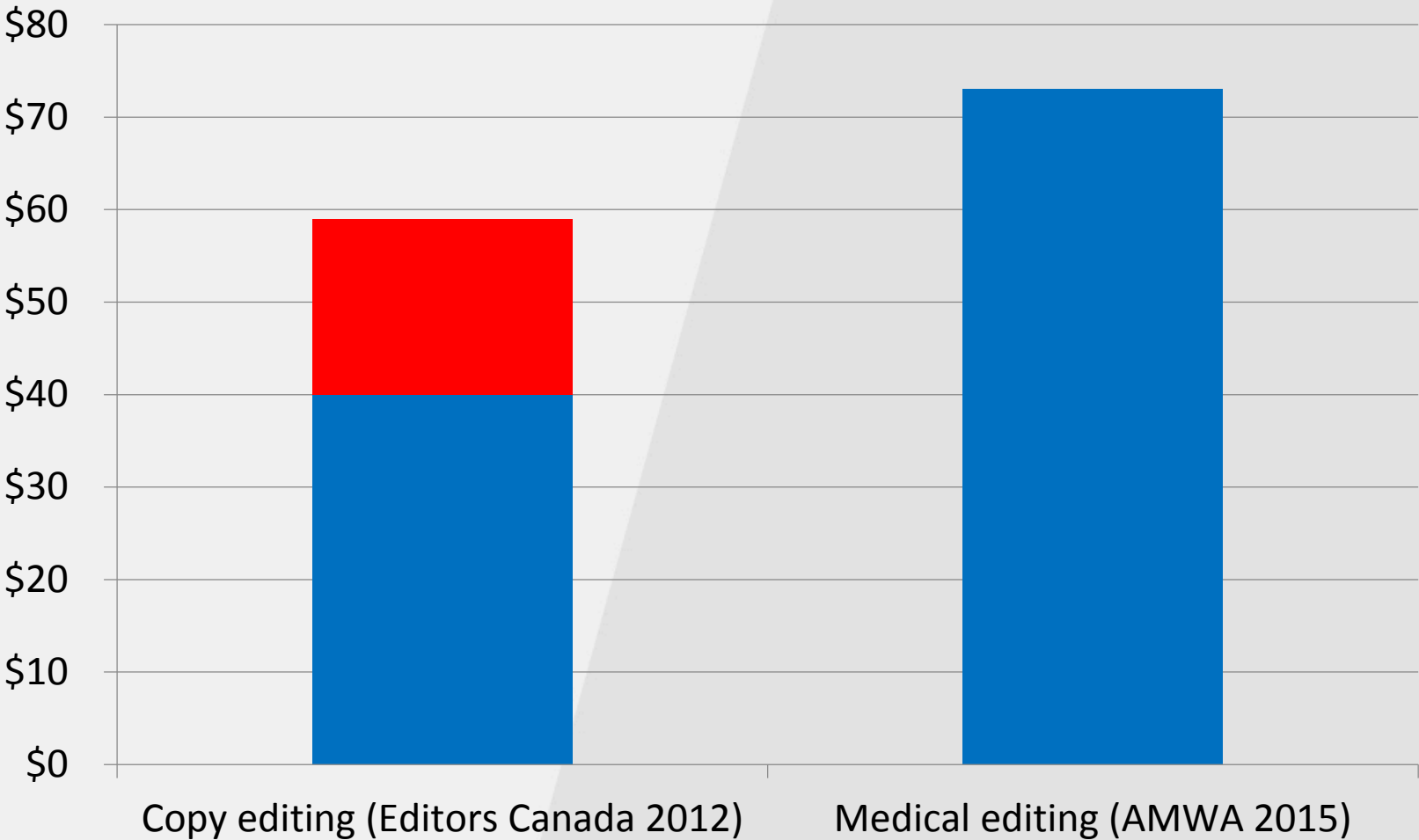
## Other

PowerPoint  
slides

Marketing  
materials

CE documents

# Potentially higher pay



# Factors affecting salaries



# Advantages of being a medical copy editor



Get to learn new things and exercise different parts of your brain



Projects are usually smaller, more containable (more variety)



Authors are usually very appreciative that you (vs their peers) caught errors



May play a part in bringing a huge medical discovery out into world!



# Where to start

- Check handout for list of resources
- Read medical journals to familiarize yourself with the style/conventions
- Take a course in medical terminology (AMWA)
- Study the *AMA Manual of Style*
  - Learn a chapter a day
  - Use the online quizzes to self-test
  - Practice putting references into AMA style
  - Create your own style sheet for easy reference





# Thank you!

Please feel free to contact me with your comments or questions or if you would like more information.

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