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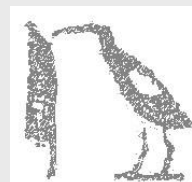


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## The ATLAS Experiment at the CERN Large Hadron Collider

**OPEN ACCESS THE CERN LARGE HADRON COLLIDER: ACCELERATOR AND EXPERIMENTS**

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# The NEW ENGLAND JOURNAL of MEDICINE

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## An International Randomized Trial Comparing Four Thrombolytic Strategies for Acute Myocardial Infarction

The GUSTO Investigators

N Engl J Med 1993; 329:673-682 | [September 2, 1993](#)

### The GUSTO study

- 1081 hospitals in 15 countries
- 41,021 patients
- 972 authors



# Biomedicine (life sciences)

- Often refer to ICMJE (International Committee of Medical Journal Editors)
- or follow similar criteria
- Used by:
  - journals
  - institutions
  - commercial companies





# ICMJE criteria (2013 version)

- 1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and
- 2. Drafting the work or revising it critically for important intellectual content; and
- 3. Final approval of the version to be published; and
- 4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any parts of the work are appropriately investigated and resolved.



# ICMJE: author selection

- “The criteria are not intended for use as a means to disqualify colleagues from authorship who otherwise meet authorship criteria by denying them the opportunity to meet criterion #s 2 or 3. Therefore, all individuals who meet the first criterion should have the opportunity to participate in the review, drafting, and final approval of the manuscript.”
- “The individuals who conduct the work are responsible for identifying who meets these criteria and ideally should do so when planning the work, making modifications as appropriate as the work progresses.”



# Journal authorship guidance

(n=234 biomedical journals)

No guidance	41% (100)
ICMJE criteria	29% (68)
Partial ICMJE (authors must approve ms)	14% (33)
Own criteria	14% (33)

*but 9/25 cited outdated ref!*

Wager, *Medscape Gen Med* 2007;9:16



# Many people don't know / disagree with ICMJE criteria

Of 66 UK researchers  
(univ med faculty)

- 51% unaware of any explicit criteria
- 62% disagreed that all 3 criteria should be met

Bhopal et al *BMJ* 1997;**314**:1009-12



# Many people don't know / disagree with ICMJE criteria

Of 39 French researchers (PIs)

- 49% unaware of ICMJE authorship criteria
- 77% disagreed that all 3 criteria should be met
- 41% had been left off articles
- 62% had learnt they were an author after publication

Pignatelli et al *JME* 2005;31:578-81



# American Institute of Physics

- Authorship should be limited to those who have made a significant contribution to the **concept, design, execution, or interpretation** of the research study. All those who have made significant contributions should be offered the opportunity to be listed as authors. Other individuals who have contributed to the study should be acknowledged, but not identified as authors.



# American Chemical Society

- To protect the integrity of authorship, only persons who have significantly contributed to the research or project and manuscript preparation shall be listed as co-authors. The corresponding author attests to the fact that any others named as co-authors have seen the final version of the manuscript and have agreed to its submission for publication. Deceased persons who meet the criterion for co-authorship shall be included, with a footnote reporting date of death. No fictitious name shall be given as an author or co-author. An author who submits a manuscript for publication accepts responsibility for having properly included all, and only, qualified co-authors.

also American Society of Mechanical Engineers



# One solution

- Contributorship
- List individuals' contributions (who did what)
- *“S&T were involved with study design and data interpretation, U performed statistical analysis, V&W collected data, T prepared the first draft, all authors reviewed the final version”*
- Can still acknowledge others





# How many journals list contributors?

- No recent global data
- ICMJE strongly recommends this
- Survey of 234 journal IforAs in 2006 found only 21 (9%) described individuals' contributions
  - *Wager Medscape General Medicine 2007;9:16*
- Survey of 59 Indian medical journals in 2010 found that 30 (51%) required contributions to be described
  - *Jaykaran et al Indian J Med Ethics 2011;8:36-8*
- Survey of 49 Pakistani medical journals in 2008 found that only 1 (3%) required contributions to be described
  - *Samad et al Pak J Med Sci 2009;6:879-82*



# How are “contributions” measured?

- Authorship is still used to measure research productivity / for appointments / tenure, etc.
- Do funders / institutions recognise that contributors may be different from authors?
- First authors usually get most ‘credit’ ...



# ICMJE: contributors

- “Contributors who meet fewer than all 4 of the above criteria for authorship should not be listed as authors, but they should be acknowledged. Examples include ... writing assistance, technical editing, language editing, and proofreading.”

There is confusion  
around the term  
'contributor'



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N Engl J Med. 2013 Dec 12;369(24):2283-93. doi: 10.1056/NEJMoa1310669. Epub 2013 Nov 19.

### A pharmacogenetic versus a clinical algorithm for warfarin dosing.

Kimmel SE, French B, Kasner SE, Johnson JA, Anderson JL, Gage BF, Rosenberg YD, Eby CS, Madigan RA, McBane RB, Abdel-Rahman SZ, Stevens SM, Yale S, Mohler ER 3rd, Fang MC, Shah V, Horenstein RB, Limdi NA, Muldowney JA 3rd, Gujral J, Delafontaine P, Desnick RJ, Ortel TL, Billett HH, Pendleton RC, Geller NL, Halperin JL, Goldhaber SZ, Caldwell MD, Califf RM, Ellenberg JH; COAG Investigators.

Collaborators (198)

#### Author information

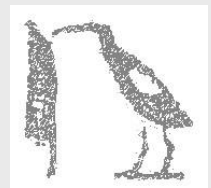
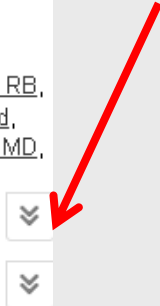
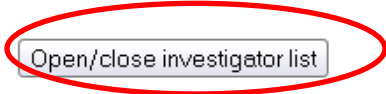
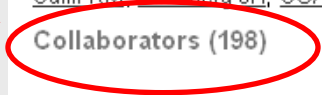
Open/close investigator list

#### Abstract

**BACKGROUND:** The clinical utility of genotype-guided (pharmacogenetically based) dosing of warfarin has been tested only in small clinical trials or observational studies, with equivocal results.

**METHODS:** We randomly assigned 1015 patients to receive doses of warfarin during the first 5 days of therapy that were determined according to a dosing algorithm that included both clinical variables and genotype data or to one that included clinical variables only. All patients and clinicians were unaware of the dose of warfarin during the first 4 weeks of therapy. The primary outcome was the percentage of time that the international normalized ratio (INR) was in the therapeutic range from day 4 or 5 through day 28 of therapy.

**RESULTS:** At 4 weeks, the mean percentage of time in the therapeutic range was 45.2% in the genotype-guided group and 45.4% in the clinically guided group (adjusted mean difference, [genotype-guided group minus clinically guided group], -0.2; 95% confidence interval, -3.4 to 3.1; P=0.91). There also was no significant between-group difference among patients with a predicted dose difference between the two algorithms of 1 mg per day or more. There was, however, a significant interaction between dosing strategy and race (P=0.003). Among black patients, the mean percentage of time in the therapeutic range was less in the genotype-guided group than in the clinically guided group (adjusted mean difference, [genotype-guided group minus clinically guided group], -4.5; 95% confidence interval, -8.1 to -0.9; P=0.01). There was no significant interaction between dosing strategy and race among white patients. The percentage of patients achieving a therapeutic outcome of any INR of 4 or more, major bleeding, or thromboembolism was similar between groups (46.2% vs 46.8%; P=0.89).



# Order of author listing remains problematic

- ?Should journals provide guidance on this
- Important in academic reward systems



# Harvard policy

- *“Many different ways of determining order of authorship exist across disciplines, research groups, and countries. Examples of authorship policies include descending order of contribution, placing the person who took the lead in writing the manuscript or doing the research first and the most experienced contributor last, and alphabetical or random order. While the significance of a particular order may be understood in a given setting, order of authorship has no generally agreed upon meaning.*
- *As a result, it is not possible to interpret from order of authorship the respective contributions of individual authors. Promotion committees, granting agencies, readers, and others who seek to understand how individual authors have contributed to the work should not read into order of authorship their own meaning, which may not be shared by the authors themselves.”*

<http://hms.harvard.edu/about-hms/integrity-academic-medicine/hms-policy/faculty-policies-integrity-science/authorship-guidelines>



# backup slides



# Group authorship

**2008**

- Increasingly, authorship of multicenter trials is attributed to a group. All members of the group who are named as authors should meet the above criteria for authorship/ contributorship

**2013**

- All members of the group named as authors should meet all four criteria for authorship, including approval of the final manuscript, and they should be able to take public responsibility for the work and should have full confidence in the accuracy and integrity of the work of other group authors.





# Group authorship (2)

2008



2013

- Some large multi-author groups designate authorship by a group name, with or without the names of individuals. When submitting a MS authored by a group, the corresponding author should ... clearly identify the group members who can take credit and responsibility for the work as authors.



# Collaborators (new in 2013)

- “The byline of the article identifies who is directly responsible for the MS, and MEDLINE lists as authors whichever names appear on the byline. If the byline includes a group name, MEDLINE will list the names of individual group members who are authors or who are **collaborators**, sometimes called non-author contributors, if there is a note associated with the byline clearly stating that the individual names are elsewhere in the paper and whether those names are authors or collaborators.”



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