DEVELOPING CORE COMPETENCIES FOR SCIENTIFIC EDITORS OF BIOMEDICAL JOURNALS

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I have no conflicts of interest to declare.

Research Sponsors:
- Ottawa Hospital Research Institute
- Cochrane
- Elsevier
- BioMed Central
Focus is on initiatives that have relevant downstream consequences for the conduct and reporting of biomedical research:

- Research program on predatory journals
- Instituting, piloting, and evaluating a publications officer
- Developing online courses on journalology
- Developing core competencies for journal editors
PRESENTATION OVERVIEW

- Background
- Objectives
- Process
- Where we are now
- Next steps
Biomedical journals are the main route for disseminating the results of health-related research. (Smith R. 2006. J R Soc Med)

- Important details often missing or poorly reported. (Duff, JM. 2010. JNCI)
- Reduced quality, transparency, reproducibility, and usefulness for decision makers. (Glasziou P. 2014. Lancet)

This is wasteful, diminishes scientific and fiscal value, and is unethical. (Kleinert S. 2014. Lancet)
BACKGROUND

Many scientific editors of biomedical journals operate largely without formal training and universal certification is not yet a high priority. (Moher, D. 2015. PLoS)

No known body of literature systematically identifying core competencies for scientific editors of biomedical journals

No known broad agreement on or attempt at a process to determine these core competencies

Scientific editors: Editors who are tasked with making decisions about the content and policies of journals and who are accountable for all material published in their journals.
OBJECTIVES

▶ To collect what is known from the literature on the competency requirements of scientific editors of peer reviewed biomedical journals
▶ To assess the needs of scientific editors across the globe
▶ To engage editors in a consensus-based effort to develop a minimum set of core competencies
▶ To develop a comprehensive training program based on the core competencies
7 Major Components:

- Environmental Scan
- Scoping Review
- Needs Assessment
- Delphi Process
- Consensus Meeting
- Course Development
- Training and Certification
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1. Searched results of a previous environmental scan of training programs for authors, peer reviewers, and editors.
   • Used combinations of 3 keywords/terms (e.g., “training” and “editor” and “academic”)

2. Conducted a new environmental scan using other keywords
   • Combinations of 2 keywords/terms (e.g., “knowledge” and “scientific editor”)

Environmental Scan:
Systematic Google searches using relevant keywords:
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SCOPING REVIEW

Searches:

- MEDLINE®, Cochrane Library, Embase®, CINAHL, PsycINFO, and ERIC databases
- Grey literature (research and non-research articles)
- Websites of existing networks, major biomedical journal publishers, and organizations that offer resources for editors.
Collated overlapping or duplicate statements which produced a list of 202* unique statements.

- 7 emergent themes:
  - 1) Dealing with authors (25 items)
  - 2) Dealing with peer reviewers (22 items)
  - 3) Journal publishing (25 items)
  - 4) Journal promotion (21 items)
  - 5) Journal editing (42 items)
  - 6) Publication ethics and research integrity (23 items)
  - 7) Qualities and characteristics of scientific editors (44 items)

*Items relating exclusively to the Editor-in-Chief position were removed
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NEEDS ASSESSMENT

- Participants = 149
- Duration = 6 weeks
- Advertised: Cochrane, COPE, WAME, CSE, EASE, PLoS One, and others

Questions

- Demographic questions = 15
- Training questions (editing, methods, statistics) = 5
- Perceptions of importance of:
  - Specific knowledge (18 items) = 1
  - Skills (20 items) = 1
- Degree to which participants felt they possess:
  - Specific knowledge (18 items) = 1
  - Skills (20 items) = 1
- Top 10 (ranked) training needs
WHAT IS YOUR SEX?

Demographic Questions

- Male: 60%
- Female: 40%
- Prefer not to answer: 0%
WHAT IS YOUR AGE?
How long have you been working as a scientific editor?

- Less than 1 year: 0%
- 1-3 years: 10%
- 4-6 years: 20%
- 7-10 years: 30%
- 10-15 years: 30%
- 15-20 years: 10%
- 20+ years: 0%
WHAT IS THE HIGHEST LEVEL OF EDUCATION OBTAINED?

- Bachelor degree
- Master degree
- PhD degree
- MD or equivalent
WHAT TYPE OF JOURNAL DO YOU CURRENTLY WORK AT?

- General journal
- Specialty journal
- Other (please specify)
WHERE IS THE JOURNAL LOCATED?
HOW MANY ARTICLES (ALL ARTICLE TYPES) DID YOUR JOURNAL PUBLISH IN 2014?
HAS THE CURRENT JOURNAL FOR WHICH YOU WORK PROVIDED YOU WITH FORMAL OR INFORMAL TRAINING RELATED TO YOUR WORK AS A SCIENTIFIC EDITOR?

Questions About Training

- Yes (please provide details...)
- No
HAVE YOU ACQUIRED ANY OTHER FORMAL TRAINING RELATED TO SCIENTIFIC EDITING?
HAVE YOU ACQUIRED ANY OTHER INFORMAL TRAINING OR KNOWLEDGE RELATED TO SCIENTIFIC EDITING?
DO YOU HAVE ANY FORMAL OR INFORMAL TRAINING IN RESEARCH METHODS?
DO YOU HAVE ANY FORMAL OR INFORMAL TRAINING IN STATISTICS?
### Importance of Expertise to the Performance of Your Job as Editor

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expertise in research methods</td>
<td>85.4%</td>
</tr>
<tr>
<td>Expertise in dealing with publication ethics including conflicts of interest of authors, reviewers, and editors and the editorial board</td>
<td>80.4%</td>
</tr>
<tr>
<td>Expertise in dealing with research misconduct (falsification, fraud, plagiarism, duplicate publication); how to deal with allegations of misconduct; retraction</td>
<td>76.2%</td>
</tr>
<tr>
<td>Expertise with journal indexing and how to get a journal indexed</td>
<td>20.2%</td>
</tr>
<tr>
<td>Expertise with the role of social media for journals</td>
<td>18.0%</td>
</tr>
<tr>
<td>Expertise in understanding copyright/CC-BY (Creative Commons)</td>
<td>11.9%</td>
</tr>
</tbody>
</table>
### Importance of Skills and Experience to the Performance of Your Job as Editor

<table>
<thead>
<tr>
<th>Skill</th>
<th>Ranking</th>
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<tbody>
<tr>
<td>Behaving with integrity/professionalism</td>
<td>94.4%</td>
</tr>
<tr>
<td>Using good judgment in decision-making</td>
<td>94.4%</td>
</tr>
<tr>
<td>Language/writing skills</td>
<td>90.1%</td>
</tr>
<tr>
<td>Interactions/maintaining a working relationship with the third party company that manages your journal’s submission management system</td>
<td>20.4%</td>
</tr>
<tr>
<td>Business skills</td>
<td>19.7%</td>
</tr>
<tr>
<td>Writing news releases and maintaining relationships with the news media</td>
<td>17.6%</td>
</tr>
</tbody>
</table>

*Ranking of 6 or 7 on a 7-point Likert scale*
Expertise in research methods

72.1%

Expertise in the publication process (decision-making aspects) for research papers, commentary, and correspondence

70.6%

Expertise in the subject areas in which your journal publishes

69.9%

Expertise with journal indexing and how to get a journal indexed

28.1%

Expertise with the role of social media for journals

25.0%

Expertise in post-publication peer review

24.2%
HOW WELL YOU PERFORM SKILLS / HOW MUCH EXPERIENCE YOU POSSESS IN YOUR JOB AS EDITOR

- Behaving with integrity/professionalism: 90.2%
- Using good judgment in decision-making: 87.5%
- Language/writing skills: 81.5%
- Interactions/maintaining a working relationship with the third party company that manages your journal’s submission management system: 34.8%
- Writing news releases and maintaining relationships with the news media: 29.6%
- Business skills: 28.1%

**Legend:**
- Ranking of 6 or 7 on a 7-point Likert scale
- Ranking of 1 or 2 on a 7-point Likert scale
## TOP 10 PARTICIPANT TRAINING NEEDS

### Ranking:
Participants asked to list their top 10 training needs in order of preference (1 = most important)

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<td>2</td>
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<td>2.5</td>
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<td>3</td>
<td>Managerial Skills</td>
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<td>4</td>
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Delphi process:
Uses a group of experts to collectively reduce a set of options through a consensus-based process.

- 3 rounds, ~1 month per round
- Invited participants from needs assessment (n=149)
- Built using findings from:
  - Scoping Review (202 items)
  - Needs Assessment (12 items)
- Seeking 80% consensus:
  - Inclusion (rating of 4 out of 5 or above)
  - Exclusion (rating of 2 out of 5 or below)
88 participants

214 items

Participants ranked each item between 1 (Not At All Important) and 5 (Absolutely Essential)

Suggestions for missing items
Results

- 104 items with 80% consensus of ≥4 out of 5
  - 24 items with average score of 4.5 and 90% consensus of ≥4 out of 5
  - 1 item with 80% consensus of 5 out of 5
- 0 items with 80% consensus of ≤2
- 16 new items included from suggestions
84 Participants

Same 214 items from Round 1

For each item, participants provided with:
  • Average score of entire group from Round 1
  • Their score from Round 1
  • Section comments from Round 1

Asked to ONLY change answers where they disagree with the average score
  • Provide rationale

Rate 16 new items
  • Rank items using same 5-point scale as Round 1
Results

- 104 items with 80% consensus of ≥4 out of 5
  - 23 items with 90% consensus of ≥4.5 out of 5
- 0 items with 80% consensus of ≤2
- New items included from suggestions
  - 4 items with 80% consensus of ≥4 out of 5

TOTAL = 108 items
77 Participants

Participants provided with Round 1 & 2 average scores of the group

- Items that did not reach 80% consensus of ≥4 out of 5 (122 items – including 12 new) were highlighted
- Comments from Round 2 were provided for these items
- Participants asked to rate these items on a scale of 1 (Not At All Important) to 3 (Absolutely Essential)
Results

- No additional items achieved 80% consensus for the “Absolutely Essential” category
FINAL DELPHI RESULTS

- Highly Ranked:
  • 23 items with 90% consensus of $\geq 4.5$ out of 5

- Included:
  • 85 additional items with 80% consensus of $\geq 4$ out of 5

- Excluded:
  • 0 items with 80% consensus of $\leq 2$ out of 5

- Not Included:
  • 122 items that did not reach consensus
1. Demonstrate accountability to authors and ensure they are treated with fairness, courtesy, and objectivity

2. Provide constructive criticism to authors

3. Act on concerns about plagiarism, data fabrication, or an authorship issue and follow up with authors and then institutions

4. Request full disclosure of potential conflicts of interest by the authors
5. Develop, facilitate, and monitor the peer review process

6. Ensure that peer review panels for individual papers are not biased

7. Synthesize reviews and make ultimate editorial decisions in light of peer reviewers' comments

8. Evaluate manuscripts in light of reviewers' critiques and various selection criteria
9. Demonstrate knowledge of the goals of the journal

10. Ensure decisions are based on the validity of the work and its importance to the journal's readers

11. Demonstrate the ability to assess the quality of papers

12. Ensure papers selected are suitable to the journal

13. Demonstrate familiarity with the principles of scientific investigation
14. Demonstrate knowledge of and adherence to the principles of editorial independence
15. Demonstrate expertise in ensuring the ethical integrity of publications
16. Identify and address allegations of fraud or plagiarism
17. Demonstrate understanding of privacy, confidentiality, and anonymity issues
18. Identify and address issues related to conflicts of interest
19. Separate decision-making from commercial considerations
20. Ensure the respect and privacy of patients described in clinical studies
21. Communicate clearly with others
22. Demonstrate effective critical appraisal skills
23. Act with integrity and accountability
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June 8 & 9, 2016 (1.5 day) in Strasbourg, France

- Immediately before EASE Meeting
- 22 invited experts from around the world
  - Editors of large journals
  - Editors of smaller journals
  - Publishers
  - Researchers
Goal:
- Bring all the collected evidence to a small round table meeting of scientific editors and other stakeholders
- Settle on an agreed upon list of core competencies for scientific editors

Will use data from:
- Environmental Scan(s)
- Scoping Review
- Needs Assessment
- Delphi
7 Major Components:

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Course Development
- Develop educational modules based on each of the core competencies

Training & Certification
- Create an online training course and a certification process for scientific editors who complete it
THANK YOU!!!

▶ David Moher
▶ Kelly Cobey
▶ Larissa Shamseer
▶ Virginia Barbour
▶ Patricia Baskin
▶ Sally Bell-Syer
▶ Miranda Cumpston
▶ Jon Deeks
▶ Paul Garner
▶ Harriet MacLehose
▶ Sharon Straus
▶ Peter Tugwell
▶ Liz Wager
▶ Margaret Winker

ORGANIZATIONS:
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• Cochrane
• Elsevier
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