# Editorial

## Reducing waste in research – what can editors do?

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Most people would agree that reducing waste in any aspect of life is a worthy aim. Reducing waste generally means reducing costs, which is also attractive to businesses. When I first heard of *The Lancet*'s waste in research series, I thought it was based in the green, low-carbon agenda, and would mean using less paper in the office, using teleconferencing instead of face-to-face meetings and perhaps encouraging cycling to work. The reality was far more profound. Poorly conducted or inappropriate research is a waste of resources, but it can also harm those it purports to study – most obviously in medicine, less often recognised in fields such as agriculture or climate change. In medicine, the best known initiative to address this is the Cochrane Collaboration (http://www.cochranelibrary.com/). Archie Cochrane had recognised that the results of controlled trials in pregnancy and childbirth were not being taken up by the research or the clinical community. Repeating a trial without acknowledging previous relevant studies is unethical: if the test intervention is superior, patients assigned to the control arm are being denied best treatment; if the test intervention is inferior, patients in that arm are being denied best treatment or even being exposed to harm. Led by Iain Chalmers, the Collaboration (now known simply as Cochrane), aims to collate up-to-date, systematic reviews of all relevant randomised controlled trials of health care.

While Cochrane has developed into a global independent network of researchers, professionals, patients and carers that has transformed the way health care decisions are made, further change is needed, within and beyond medicine. Thus a group of researchers, in association with *The Lancet,* published a Series of five papers that took a critical look at how funders should choose which research to support, how to improve research design, methods and analysis, research regulation and management, the accessibility of research results, and the importance of unbiased and usable research reports. This led to a successful meeting in Edinburgh in September 2015[1] and the launch of *The Lancet*'s REWARD (REduce research Waste And Reward Diligence) Campaign (http://www.thelancet.com/campaigns/efficiency).

At the EASE Conference in Strasbourg, we reviewed the progress of the Campaign and explored how editors could contribute. The Campaign itself is focusing on working with funders, to encourage them to evaluate proposals firmly in comparison with previously published research and to conduct research on the process of funding allocation. Evidence-based research should start 'at home'. Nathalie Percee du Sert described an example of the type of initiative that could be funded. The Experimental Design Assistant is an online tool that helps biologists to design their experiments to minimise the number of animals consistent with their scientific objectives, reduce subjective bias, and use appropriate statistical analysis. This could serve as a model for other disciplines.

So what can editors do? Since publication sits at the end of the process, some argue that editors have little influence, because the study has been completed and it is too late to change the methodology. That underestimates the power of journal editors as gatekeepers. Poorly conducted research should be rejected. More constructively, editors can help to educate researchers (particularly authors' editors[2]), improve the published record and encourage full reporting, so that optimal use can be made of results, even if the study was not perfectly designed. Here are some steps that are easy to implement, in any discipline, for large or small journals.

- Ask authors to provide the protocol of the study either as a published reference or via a link to an online source. They must have written one at some point – to obtain funding or just to plan within their laboratory. Direct authors of clinical trials to the SPIRIT guidelines: it might be too late for the study under question but should help the authors to develop their next protocol. In the REWARD session in Strasbourg, Pia Rotshtein described Registered Reports in the journal, Cortex, a new venture that peer reviews and publishes protocols in cognitive neuroscience.
- Ask authors to provide a flow chart of subjects in the study – patients, animals, plants, whatever they are studying. For medical studies, a standard form is available as part of the CONSORT statement (http://www.consort-statement.org/). This could easily be adapted for other subject areas and helps to ensure that authors are not cherry picking the subjects that responded as they predicted and ignoring the rest.
- Using the protocol, ensure that all planned outcomes are reported unless there is a clear publication plan for them to be reported in a separate paper. Again, this avoids the authors selecting the outcomes that support their hypothesis and ignoring others.
- Publish negative outcomes, as long as the methodology was sound (a clear distinction needs to be made between negative results and failed studies). Support for the null hypothesis is as informative as a rejection.
- Many studies fail because they lack sufficient statistical power. Sometimes this is due to poor planning, in which case the paper should probably be rejected. In others, it can be due to problems that arise during the course of the study, eg difficulties recruiting or retaining sufficient subjects, a smaller effect size than predicted, cost overruns. If the editor (and peer reviewers) consider the topic to be important, it might be worth publishing all the results obtained, so that these can be used in future meta-analyses.
- In medicine (and other disciplines?), all adverse events of an intervention should be recorded: this should not

be restricted to drug trials. Any intervention, biological, psychological or social, that has the potential to confer benefit also has the potential to do harm.
- Optimise use of peer reviewers. Giving reporting guidelines to peer reviewers has been shown to improve the quality of review. Share reviewer reports, before or after the final decision is made on a paper.
- Facilitate transfer of peer review comments to the next journal if a paper is rejected.

Finally, one increasing source of waste is the 'predatory' journals that are corrupting the publication record. There are initiatives to tackle this, such as the Coalition for Responsible Publication Resources (www.RPRcoalition.org).

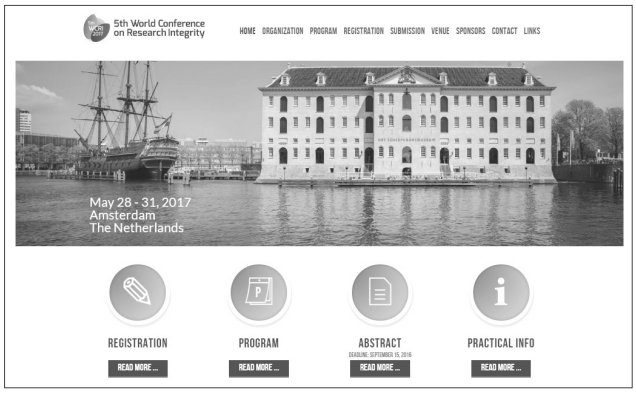

EASE will be organising a session addressing this problem at the 5th World Conference on Research Integrity in Amsterdam next year (http://www.wcri2017.org/). EASE and *The Lancet* REWARD Campaign would welcome suggestions for other ways in which editors could reduce waste in research: meanwhile, see if you can implement some of the ideas above.

***Joan Marsh***

## References

1 Marsh J. Annual General meeting. *European Science Editing.* 2015; 41 (4): 96-97

2 Shashok, K. Authors' editors in the 21st century: Promoters of publication quality and efficiency. *European Science Editing* 2014; 40(3): 60-62.




# New members of the team

*We would like to take this opportunity to welcome some new members to the EASE team*

### EASE Secretary - Tea Marasović

Tea has replaced Dalibora Behmen as EASE secretary.

Tea is the Head of the Research Office at the University of Split School of Medicine, where she undertakes all administrative tasks related to international cooperation and scientific and research projects. She also provides technical assistance for writing research proposals, project reports and documentation preparation, registration and administration of institutional projects, and the production of various reports concerning the institutional project activity. She is also responsible for monitoring scientific & research excellence on an individual and institutional level; providing information on conscientious and ethically correct research approach; organising expert lectures, seminars, symposiums for the professional development of scientists and Continuing Medical Education (CME) and financial monitoring of the individual use of allocated government funds for scientific institutional activity.

Tea studied at the University of Split, Croatia, has an MA in Sociology and is interested in Arts and Culture, Civil Rights and Social Action, Education, Health, Science and Technology.

### Editorial board member - Rhiannon Howe

Rhiannon has joined the ESE editorial board to take responsibility for the meeting reports section, replacing Hannah Cagney. Rhiannon has been an Assistant Editor at *The Lancet* since 2015. After graduating from Birmingham University with a BMedSc in Medical Science, specialising in cell and molecular biology, she worked in pharmacovigilance, periodic reporting, and signal detection for Roche, GSK, and Sanofi Aventis. Keen to utilise her love of language and writing, she moved to work in the Editorial team at the British National Formulary, before taking an editorial position at *The Lancet*. Rhiannon works extensively with the main *Lancet* journal as well as all *The Lancet* speciality titles, and was instrumental in the editing and publication of the 2015 Lancet Commission on Adolescent Health. Her interests include creative writing, baking, and the theatre.