

Editorial

Rewarding systematic approaches to reducing research waste

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Part of research integrity is ensuring that research is designed well, conducted efficiently, and reported completely, avoiding waste and bias. In a landmark study in 2009, Iain Chalmers and Paul Glasziou¹ estimated that there was a 50% loss during the design, publication, and reporting stages of research, implying a cumulative waste of at least 85%. As Chalmers and Glasziou observed last year in a follow-up blog post: “If research was a transport business, we would be appalled by these data. Half the goods carried would be badly designed, half lost in shipping, and half of the remainder broken by the time they arrived.”² Despite much of this waste seeming to be avoidable or remediable, a lack of awareness was preventing change. This led to the formation of the REWARD Alliance (rewardalliance.net), supported by *The Lancet*, Cochrane, EASE and others, aiming to raise awareness and highlight solutions.

Last year in *European Science Editing*, Joan Marsh wrote about the background and development of REWARD, and highlighted that editors can play a role in helping to reduce waste in research.³ In this issue, Rhiannon Howe explores editors’ contributions in more detail. Also this year, to recognise what has been achieved, the Cochrane-REWARD prize was instigated, to recognise both underused ‘remedies’ and the need to invest in research to identify problems and solutions. Cochrane has been working on efficiently answering research questions in health care since its founding in 1993, and is now a global network of contributors and partners (cochrane.org).

An award committee, including representatives of Cochrane, EASE, *The Lancet*, and the REWARD Campaign, identified initiatives with the most potential to reduce waste in research if scaled up globally. There were 18 applicants, and the three winners were announced at the 5th World Conference on Research Integrity in Amsterdam on 30 May 2017.

The first prize went to the UK National Institute for Health Research (NIHR) for its Adding Value in Research (AViR) programme. AViR was set up to ensure that NIHR-funded research addresses questions that are relevant, uses appropriate design and methods, is delivered efficiently, is published in full, and results in unbiased and usable reports. This approach to tackling waste at every level offers an example to other funders seeking to reduce waste and add value to funding programmes. As an example of what the programme has put in place, those seeking funding for primary research from NIHR must reference systematic reviews (showing what is already known), commit to full reporting of the findings, and include patients at all stages.

Authors of systematic reviews often struggle to obtain unpublished results of trials, so the full registration and reporting has long been a focus for Cochrane and for initiatives such as AllTrials (alltrials.net). An announcement by a group of research funders, just before the Amsterdam meeting, provided some good news on this front. The Indian

Council of Medical Research, the Norwegian Research Council, the UK Medical Research Council, Médecins Sans Frontières and Epicentre, PATH, the Coalition for Epidemic Preparedness Innovations, Institut Pasteur, the Bill & Melinda Gates Foundation, and the Wellcome Trust agreed to implement World Health Organization (WHO) policies that require all trials they fund or support to be registered and results disclosed within specified timeframes.

Aside from clinical trials, what about waste in animal research? The second recipient of a Cochrane-REWARD prize was SYRCLE, based at Radboud University in Nijmegen, in the Netherlands. SYRCLE promotes the use of systematic reviews for animal studies, to improve the evidence base for animal research and its relevance for clinical research. The reduction of waste comes both from the improved quality of the evidence base, both for future animal research and to underpin clinical research, and from the resulting reduction in the use of animals in research (a 15% drop in the Netherlands since SYRCLE was set up). SYRCLE undertakes many training and promotion activities and is building a global network of ambassadors. You can find your local representative on the SYRCLE website (www.syracle.nl).



Prize winners: (from left) Merel Ritskes-Hoitinga (SYRCLE), Matt Westmore (NIHR), Paula Williamson (COMET)

The joint-second prize-winner was the COMET Initiative (comet-initiative.org), which brings together people interested in the development and application of core outcome sets - standardised sets of research outcomes relevant to health service users and clinicians. These outcome sets represent the minimum outcomes that should be measured and reported in all clinical trials of a specific condition. Without such standardised outcomes, it's difficult to effectively compare the findings of clinical trials or incorporate those results in systematic reviews, thus hindering evidence synthesis, reducing the value of the studies, and contributing to waste.

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encompasses manuscripts already rejected elsewhere. A few other examples are *European Journal of Transport Research and Infrastructure*, *Journal of Consumer Research* and *Transactions of the American Mathematical Society*. Besides Elsevier, the Genetic Society of America, the Federation of European Biology Societies, European Molecular Biology Press, the Company of Biologists, the EMBO Journal and Rockefeller University Press have all adopted this approach. These journals are “taking back the formatting baton” as suggested recently by John Moore in his letter to *Nature*, a call for days past “when publishers took responsibility for the full production process”.

To sum up, after following the discussion mentioned above and the few others that exist on this topic (none very recent, however) I got the impression that some journals are a bit more ‘enlightened’ and regard formatting so precisely to be a waste of valuable research time, and anyway a job for a typesetter. These tended to be mathematical and physics journals which commonly use LaTeX software. Others however, in particular some of the clinical medicine journals, have their roots in old establishments and perhaps like to retain their ‘traditions’. It could, however, just as easily be a case of not fixing something which is not per se ‘broken’: while authors continue to jump through the formatting hoops, and journals get more submissions than they can possibly publish, why change the way things are? Despite both authors and editors getting exasperated at yet another round of seemingly fruitless reformatting, it appears to me that there is no great movement to change the way things are for the majority of journals. Or will the more pragmatic journals, such as those mentioned above, gradually become more popular venues to submit – and bring about change ‘by stealth’?

It would be interesting to hear from our membership, particularly those who are chief editors, how they feel about this. Do you favour strict adherence to journal style, even at

submission, or do you regard styling beyond word count and numbers of display items secondary to manuscript content? Submission aside, that journals continue to have their layout and style foibles is understandable and not a bad thing at all when some journals can be instantly recognised simply by seeing the layout of the pages. I would also be interested to find out from the chief editors among our membership how their journal style came to be, how it has evolved over time, and whether they think some of the conventions could usefully be harmonised between journals. Perhaps, as editors, we can ‘wave the flag’ for spending less time on pedantry, and more time on content, at least at the pre-peer review stages.

References

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- 2 Academia Stack Exchange at: <https://academia.stackexchange.com/questions/36677/should-you-conform-to-journal-formatting-requirements-for-the-initial-submission/36696>
- 3 Elsevier. *Your Paper, Your Way*. At: <https://www.elsevier.com/editors-update/story/author-support/your-paper-your-way-now-available-to-all-journals>
- 4 Brown K, Pourquie O. 2017. Editorial: Going format-free. *Development* 144: 1919 doi: 10.1242/dev.154161. Available at: <http://dev.biologists.org/content/144/11/1919>

Further reading

- Brischoux, F, Legagneux, P. 2009. Don't Format Manuscripts. *The Scientist*. Available at: <http://www.the-scientist.com/?articles.view/articleNo/27482/title/Don-t-Format-Manuscripts/>
- CofactorScience.com at: <http://cofactorscience.com/blog/do-you-really-have-to-reformat-for-each-new-submission>
- Sack, J. “Format-neutral”: Why doesn't every journal accept submissions this way? *Highwire* at: <https://blog.highwire.org/2016/05/16/format-neutral-why-doesnt-every-journal-accept-submissions-this-way/>

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COMET is planning to raise awareness about its work with research funding agencies and is seeking representatives from different countries who are best placed to start that dialogue with funders in their country. Those outcome sets are available in a searchable database on the COMET website, and COMET is also working with the ISRCTN trials registry to provide advice at the time of registration.

What all the prize winners have in common is a focus on the role of systematic reviews and the need to exert influence via networks. A well-conducted systematic review will identify what research is still needed in terms of the research outcomes and the study design, and what research is not needed, to answer a particular question. And while preparing a systematic review can be an intensive ‘head-down’ process for authors and editors, the best results are achieved by teamwork and transparent processes, and a really useful systematic review will inevitably rely on, and build on, the work and decisions of countless other funders, institutions, researchers, editors, and consumers. The Cochrane-REWARD Prize will be awarded again in 2018.

Details for applicants for the 2018 prize will be announced in late 2017 for submission by mid 2018.

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Competing interests

JH is a full-time employee of Cochrane.

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- 2 Glasziou P, Chalmers I. Is 85% of health research really wasted? <http://blogs.bmj.com/bmj/2016/01/14/paul-glasziou-and-iain-chalmers-is-85-of-health-research-really-wasted/> (Accessed 2 July 2017)
- 3 Marsh J. Reducing waste in research – what can editors do? *European Science Editing*. 2016; 42 (3): 58-59.