REWARD Recommendations 5 years later: promises and results in reducing research waste

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www.crebp.net.au

The Reward Alliance

EBHC, Sicily November 2019
A very brief history of waste in research

1994 - “huge sums of money are spent annually on research that is seriously flawed through the use of inappropriate designs, unrepresentative samples, small samples, incorrect methods of analysis, and faulty interpretation” Doug Altman, The Scandal of Poor Medical Research, BMJ.

2009 – Chalmers & Glasziou, Lancet calculated that ~85% research is avoidably wasted

2012 - Begley & Ellis - Amgen not able to reproduce the seminal findings from 47 of 53 “top tier” publications (reproducibility crisis)

2014 - Lancet 5-part series on Adding Value, Avoiding Waste

2015 – REWARD-EQUATOR Conference, Edinburgh

2015 - Ensuring Value in Research (EVIR) funders forum initiated

2016 - Cochrane-REWARD Prize established

2020 - REWARD-EQUATOR Conference, Berlin (QUEST Centre)
Over 30% of trial interventions not sufficiently described
Over 50% of planned study outcomes not reported
Most new research not interpreted in the context of systematic assessment of other relevant evidence

Unbiased and usable report?

Avoidable waste in the production and reporting of research evidence

Iain Chalmers, Paul Glasziou

www.thelancet.com  Published online June 15, 2009

Questions relevant to clinicians and patients?
Appropriate design and methods?
Accessible full publication?
Unbiased and usable report?

Low priority questions

Problems from research questions to patient benefits?

85% Research waste = over $100 Billion / year
Annual **avoidable waste** in research estimated to be 85% from:

2. avoidable design flaws (50%),
4. non-publication (50%) and
5. unusable reports (50%)

– for a global total of over $140 Billion/year.


*Adding Value, Reducing Waste; Lancet Series 2014 (42 authors)*

[www.researchwaste.net](http://www.researchwaste.net)
50% of research is not published

Questions relevant to users of research → Appropriate design, conduct & analysis → Efficient regulation and delivery → Accessible full research reports → Accessible full research reports

Lancet 2014;383:257–66

Lancet

WASTE

USA or Canada and other
Not USA or Canada
USA or Canada

≥160
<160

4
2/3 or 3
1/2 or 2

Non-government, non-industry
Government
Industry

All trials

Reported (%)
Non-Publication: a solution
All Studies Registered; All Results Reported

www.alltrials.net/

PreclinicalTrials aims to provide a comprehensive listing of preclinical animal study protocols.
Preferably registered at inception in order to increase transparency, help avoid duplication, and reduce the risk of reporting bias by enabling comparison of the completed study with what was planned in the protocol.

Promoting transparency in preclinical research

Cochrane-REWARD Prize 2018
Cochrane-REWARD Prize 2019
RESULTS: At trial termination, (225 nimodipine, 229 placebo), no effect of nimodipine was found.

RESULTS “28 trials were included (7521 patients).
No effect on poor outcome (OR 1.07), or on death at end of follow-up (OR 1.10)”

“20 studies ... review did not show convincing evidence to substantiate the decision to perform trials with nimodipine in large numbers of patients.”
No new studies without prior systematic review of existing evidence

The aims of the EBRNetwork is to reduce waste in research by promoting:
1. No new studies without prior systematic review of existing evidence
2. Efficient production, updating and dissemination of systematic reviews

Systematic review time reduced from 1-2 years to 2 weeks (Clarke, submitted)
Using combination of:
• automated tools +
• ‘agile’ project management.
Reducing over-regulation of research

Streamlined process for low risk research (based on other country models) – possible $160M/year saving

Some Quotes:
“We run trials in SA and have in fact had to give grant money back as it took over two years to get approval for a trial in which time the funding time period had lapsed.”

“There is a huge burden of unnecessary tasks associated with ethics committees in australia. I work internationally and I avoid dealing with Australian ethics committees at all costs, thus research money and jobs go internationally because of the horrific duplication of efforts that occurs.”

Adrian Barnett, Queensland University of Technology
Jennifer Byrne, Amanda Rush, Natalie Taylor University of Sydney
Anna Scott, Bond University
Research on Research Efficiency

What is known about efficient trials?

Cochrane-REWARD Prize 2019

Questions relevant to users of research

Appropriate design, conduct & analysis

Efficient regulation and delivery

Accessible full research reports

Accessible full research reports

Funding Research on Research Efficiency

Studies Within a Trial (SWAT)

Our colleagues at Queen’s University Belfast host the Studies Within a Trial (SWAT) and Studies Within a Review (SWAR) initiative (site). It is being developed by the Northern Ireland Network for Trials Methodology Research in collaboration with the Medical Research Council’s Network of Hubs for Trials Methodology Research in the UK (HTMR Network), the Health Research Board’s Trials Methodology Research Network in Ireland (HRB-TMRN), and others.

More information, and a repository of existing SWATs can be found at the site. If you are interested in embedding methodology research into an ongoing trial and other prospective study, have a look at the SWAT (Studies Within A Trial) collection online to see examples, or to register a new SWAT.

www.qub.ac.uk/sites/TheNorthernIrelandNetworkforTrialsMethodologyResearch/SWATSWARInformation/
Improving reporting of research

Questions relevant to users of research

Appropriate design, conduct & analysis

Efficient regulation and delivery

Accessible full research reports

Accessible full research reports

Cochrane-REWARD Prize 2018 for GoodReports

Reporting checklists for medical researchers

Checklists will help you report your research clearly and fully.

For most study types there are specific checklists that medical journals will expect you to supply alongside your manuscript.

Using a checklist can help you get published faster and maximise the impact of your work.

This tool was made by the EQUATOR Network in collaboration with many other organisations.

Case-control study (STROBE case-control)

Need some help choosing?
RECOMMENDATIONS (key 7 of 17)

1. Research funders should make information available about how they decide what research to support, and fund investigations of the effects of initiatives to engage potential users of research in research prioritisation.

2. Research funders and regulators should demand that proposals for additional primary research are justified by systematic reviews showing what is already known, and increase funding for the required syntheses of existing evidence.

3. Make publicly available the full protocols, analysis plans or sequence of analytical choices, and raw data for all designed and undertaken biomedical research.

4. Reward (with funding, and academic or other recognition) reproducibility practices and reproducible research, and enable an efficient culture for replication of research.

5. Regulators and policy makers should work with researchers, patients, and health professionals to streamline and harmonise the laws, regulations, guidelines, and processes that govern whether and how research can be done, and ensure that they are proportionate to the plausible risks associated with the research.

6. Funders, sponsors, regulators, research ethics committees, journals, and legislators should endorse and enforce study registration policies, wide availability of full study information, and sharing of participant-level data for all health research.

7. Research funders should take responsibility for reporting infrastructure that supports good reporting and archiving.
Funder activities

Cochrane-REWARD prize – 2017 Award Winner: Adding Value in Research, NIHR

Cochrane Community Blog

The UK National Institute for Health Research receive the first Cochrane-REWARD prize in 2017 for its Adding Value in Research programme, which promoted a range of activities tackling waste at every stage of research. We asked Matt Westmore, NIHR lead for this work and Operations Director at NIHR’s Evaluation, Trials and Studies Coordinating Centre about how things have developed receiving the prize.

Could you introduce NIHR’s Adding Value in Research framework?

Adding Value in Research (AViR) has been a long-running initiative for us. It goes back to 2009, with the Lancet paper on research waste by Iain Chalmers and Paul Glasziou.

We started talking about our role in reducing research waste as a funder and have been working on it since.
Why is research waste important to EBM?

- EBM is not “in crisis”, but ...
- EBM has been uncovering problems in the production of research
- Many changes occurring, but are likely to require decades