The objectives of the Strategy are to:

1. support a **research culture** in NHMRC-funded institutions that is conducive to the conduct of high quality research

2. support **high quality** in the development, design, methodology, conduct and analysis of NHMRC-funded research

3. support **transparency** of NHMRC-funded research

4. support **accountability** for high quality research by NHMRC-funded institutions and their institutional review committees

5. ensure the need for incremental and breakthrough **innovations** is balanced with the need for necessary **replication**, and

6. ensure NHMRC’s processes are **efficient** while supporting high quality research.
**Status update**

**Phase 1**
- Draft NHMRC Research Quality Strategy (the Strategy) developed by Research Quality Steering Committee (July 2018-Feb 2019).
- Consideration by NHMRC's Research Committee and Council (March 2019).
- CEO approval and release of the Strategy (mid-2019).

**Phase 1-Early initiatives**
- Research Quality Steering Committee and its subgroups progressing early initiatives identified during the development of the Strategy (July 2018 – Ongoing).

**Phase 2**
- Ongoing consultation and engagement with the sector about implementation of the Strategy.
- Progression of activities and tasks identified in the Strategy and associated Action Plan.
- Ongoing consultation with national and international agencies and partners.
Outline

1. The problems

2. NHMRC & International plans

3. Today’s workshop themes

Lex Bouter, VMC, Netherlands
Begley’s Bombshell

Between 2002-2012, Amgen was not able to reproduce the seminal findings from 47 of 53 “top tier” publications.

- publications that reported something completely “new”

The major finding was not reproduced!

In the majority, data was not reproduced by the original investigators with their reagents in their lab

Amgen’s experience is not unique....
A very brief history

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 published

2014 Ensuring Value in Research (EVIR) funders forum initiated

2018 NHMRC Research Quality Committee set up
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.

Calculation at: http://blogs.bmj.com/bmj/2016/01/14/paul-glasziou-and-iain-chalmers-is-85-of-health-research-really-wasted/

Adding Value, Reducing Waste
Lancet Series 2014
www.researchwaste.net
50% of research is not published

Lancet 2014;383:257–66
Poor reporting of non-pharmacological interventions in 6 major medical journals

Of 133 trials in 2010

59% adequate after contacting author

39% adequate in primary sources

Hoffmann, Erueti, Glasziou. BMJ 2013
Unavoidable “waste” in research

"Young man, why would I feel like a failure? And why would I ever give up? I now know definitively over 2,000 ways that an electric light bulb will not work. Success is almost in my grasp."

Thomas Edison

99% perspiration
1% innovation
Some international work

- EVIR funders forum
- EQUATOR network
- Hong Kong Principles
- Open Science Framework
Some international work

- EVIR funders forum
- EQUATOR network
- Open Science Framework
- Hong Kong Principles
Some international work

- EVIR funders forum
- EQUATOR network
- Open Science Framework
- Hong Kong Principles
Some international work

• EVIR funders forum
• EQUATOR network
• Open Science Framework
• Hong Kong Principles
What to change?

1. Blinding, blinding, blinding
2. Good reporting
3. Study registration
4. ..... 

99. Lack of computing power
100. Spelling mistakes

How to change it?

Strategy for Culture Change
June 11th, 2019, Brian Nosek
Tags: Behavior Change, Open Science, Reproducibility, Culture Change

- Make it required
- Make it rewarding
- Make it normative
- Make it easy
- Make it possible
NHMRC Research Quality Steering Committee

Terms of Reference:

• Advise NHMRC’s CEO on mechanisms for enhancing quality in NHMRC-funded research through rigour, transparency and reproducibility, including:
  • identification of factors that enable or hinder **rigour, transparency and reproducibility** in research
  • **short and long-term strategies for improving** rigour, transparency and reproducibility in NHMRC-funded research, and
  • measuring and reporting effectiveness of strategies.
Where are we now?

Survey

Infrastructure
eg
Study
Registration

Training

Institutional
Support
Education & Training

Curriculae

Training processes

Designing integrated research integrity training: authorship, publication, and peer review

Mark Hooper, Virginia Barbour, Anne Walsh, Stephanie Bradbury and Jane Jacobs

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COMPETENCIES FOR AUSTRALIAN ACADEMIC CLINICAL TRIALISTS
Infrastructure & Tools

Tools to aid better study design

The Experimental Design Assistant - EDA

The Experimental Design Assistant (EDA) is a free online tool from the NC3Rs, designed to guide researchers through the design of their experiments, helping to ensure that they use the minimum number of animals consistent with their scientific objectives, methods to reduce subjective bias, and appropriate statistical analysis.

Click here to access the EDA

Trial registration

The ANZCTR is an online registry of clinical trials being undertaken in Australia, New Zealand and elsewhere.

Search for a trial

Search all registered trials

Advanced search

Click here to use our advanced search feature.

For instructions on how to search and alternative search options, please visit the ‘How to search’ page here.
Institutional Support

UKRN Activities

- Registered Reports
- Registered Reports Funding
- Editors4BetterResearch
- Accountable Replication Policies
- Octopus
- Open Research Working Groups
- ReproducibiliTea
- Hiring Policies Certification Scheme
- Laboratory Efficiency Assessment Framework (LEAF)
Research on Research

Research on Research Problems

Research on Research Efficiency

"By ensuring that efforts are infused with rigour from start to finish, the research community might protect itself from the sophistry of politicians, disentangle the conflicted motivations of capital and science, and secure real value for money for charitable givers and taxpayers through increased value and reduced waste."

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**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/