

Embedding trials in clinical practice

Ian Harris

2012

THE CONVERSATION

Academic rigour, journalistic flair

[Arts + Culture](#) [Business + Economy](#) [Cities](#) [Education](#) [Environment + Energy](#) [FactCheck](#) [Health + Medicine](#)

McKeon review: we need to integrate research and health services

Essay

Why Most Published Research Findings Are False

John P. A. Ioannidis

ESSAY

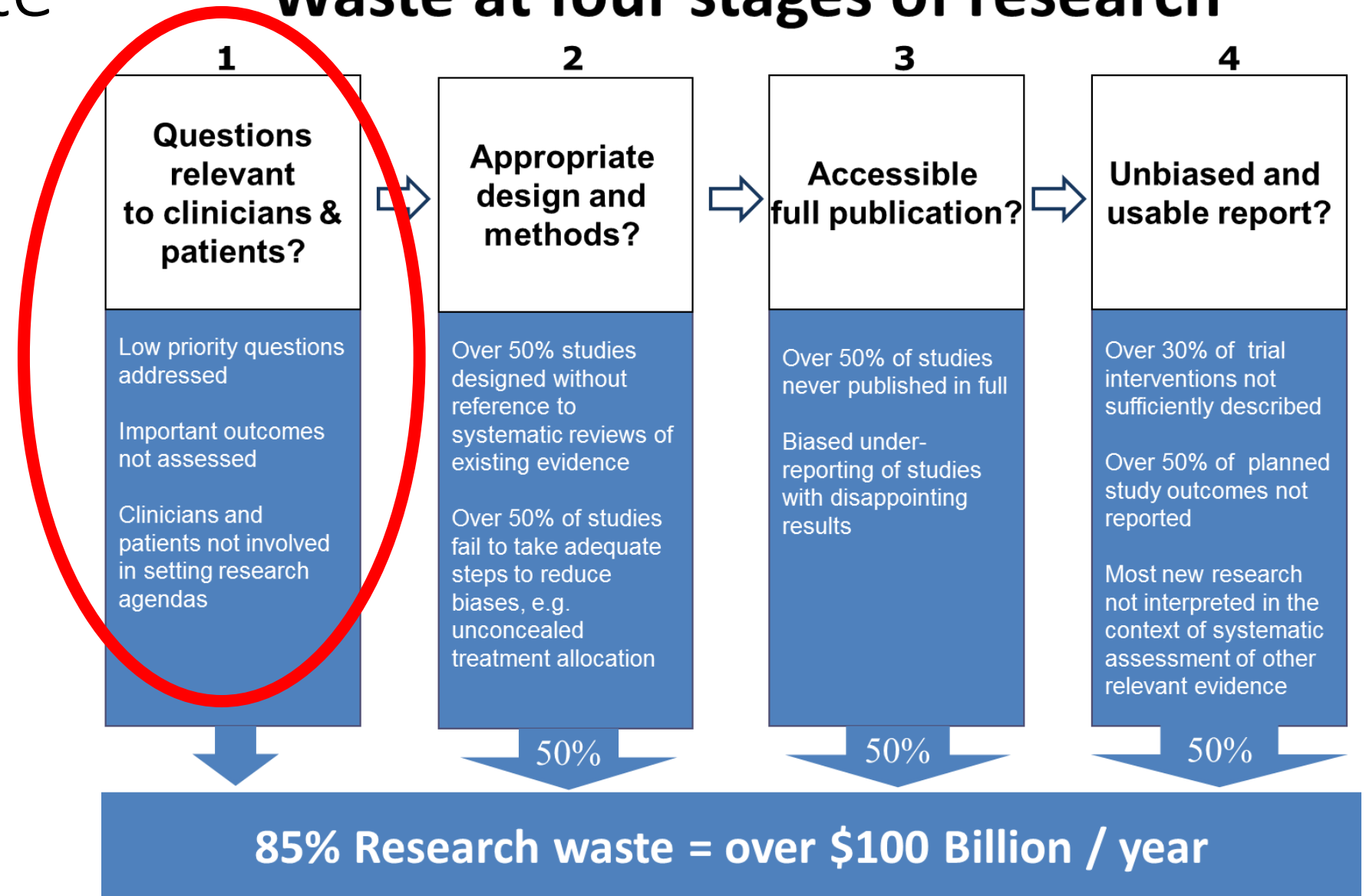
Why Most Clinical Research Is Not Useful

John P. A. Ioannidis^{1,2*}

Research waste

(Macleod Lancet 2014)

Waste at four stages of research



Since 2012

- Academic Health Science Centres
- Academic Health Research Technology Centres
- Academic Health Research Translation Centres
- Partnerships for Health, Education, Research and Enterprise
- **NHMRC Advanced Health Research and Translation Centres**

AHRTCs

- Collaboration
- Innovation
- Translation

The aim of embedding research (in general)

- Collaboration between practitioners, academics, consumers, policy makers
- Knowledge generated 'on the ground' to be used 'on the ground' to improve care
- Bridge the gap between research and practice
- Improve usefulness, (generalisability, implementation, acceptance)

Why we do clinical trials

- Control for confounding
- Low bias estimates of comparative effectiveness
- Provide us with evidence needed to improve health care

The problems with trials

- Not enough
- Often not reflective of real life
- Often low quality
- Often not relevant

Inherent problems with trials?

- Expensive
- One-off events
- Small
- Slow

What is embedding?

- Using existing *patients* as participants
- Using existing *clinicians* as researchers
- Using existing *systems* to recruit, intervene and follow

The aim of embedding trials?

- Making trials easier to do?
- Cheaper?
- More relevant?
- More generalisable?
- More effective?

Leveraging current systems

- Registries

Registries

- Large numbers
- Everywhere
- Long term, continuing
- Capture common practice
- Low cost
- Confounding

Clinical trials

- Small
- Rare
- Short term
- Not generalisable
- Expensive
- Minimise confounding

How can RCTs be improved?

High quality

Pragmatic

Believable

Multicentre

Clinician buy-in

Addressing important question

Relevant

Dissemination

Economic analysis of clinical quality registries

**AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE**

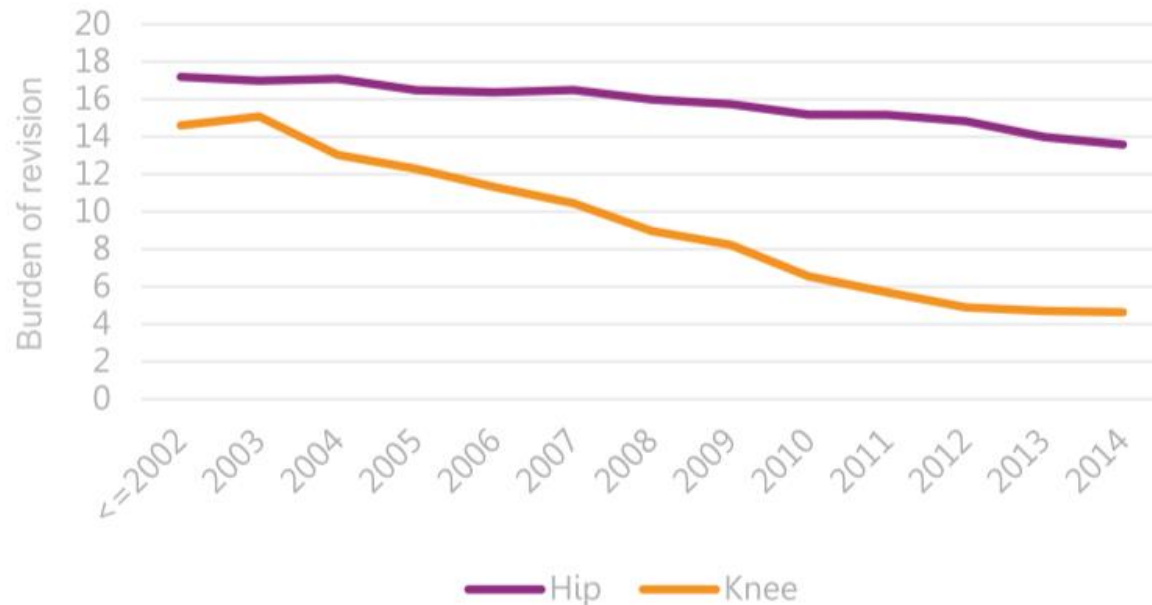
November 2016

**Economic evaluation of
clinical quality registries**

Economic analysis of clinical quality registries

The overall reduction in revisions of hip and knee arthroplasties is equivalent to a benefit of **\$618 million** from 2003 to 2014

Burden of hip and knee replacement revision in Australia



If the full reduction in revision burden between 2002 to 2014 were to be attributed to the AOANJRR, this would be equivalent to a benefit of **\$361 million** and **\$257 million** for avoided hip and knee arthroplasty revisions respectively.

Economic analysis of clinical trials networks

**AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE**

July 2017

**Economic evaluation of
investigator-initiated clinical
trials conducted by networks**

Economic analysis of clinical trials networks

- Overall benefit: \$5.80 for each \$1 invested
- Benefit remains if trials only 11% implemented
- For NHMRC trials, return is \$51 for each \$1 invested

Registry nested trials

- Leverage data and systems in place
- Low cost
- Large scale
- Multicentre
- Pragmatic

Leveraging current data systems

- Electronic health records
- Current data systems

Why are these now possible?

- Technology
- Expertise (trials, statistics, data science...)
- Clinical trials landscape
- Registry landscape
- Research funding landscape

Embedding trials – ongoing benefits

- Provide infrastructure
- Enhance and expand expertise in trials
- Enhance understanding of trials
- Expand trial activity
- Enhance believability and therefore practice change

Not for everyone?

- Suited to studying current practice

Barriers

- Inertia in current health systems
- Lack of motivation in providers
- Lack of awareness in patients
- Regulatory framework

Solutions

- Incentivise providers
- Inspire / lead by example
- Education / awareness
- Regulatory changes

Examples

- NSW Health performance indicators
- NSW Health PROMs platform
- ANZ Hip Fracture Registry and eMR
- National Joint Replacement Registry PROMs program
- MRFF
- ACTA

The next phase

The Platform Trial

An Efficient Strategy for Evaluating Multiple Treatments

JAMA 2015

- Testing multiple treatments
- Aiming for best outcomes for a condition
- Finding the best patient groups
- Responsive adaptive randomisation
- Rolling interventions

Extending beyond the clinic

- Involving / tracking people in the community
 - Personally
 - Large datasets

Getting research into practice

- Doing research in clinical practice
 - Increase quantity
 - Generalisable
 - Generates awareness and understanding of research
 - Believable – more likely to be adopted locally

Embedding research into routine practice addresses

- Research quantity
- Sample size
- Length of follow up
- Generalisability
- Research knowledge and awareness
- Translation into practice (believable, relevant, feasible)
- Cost