# Research papers that make a difference:

## How to increase research value, reputation, … and impact

Dr Iveta Simera

Deputy Director, UK EQUATOR Centre | Programme Manager, EQUATOR Network
Centre for Statistics in Medicine, NDORMS, University of Oxford, UK

14 March 2016, PAHO, Washington

# Outline

- Research output & impact
- University reputation & rankings
- Maximising the value of research & building strong research reputation for your institution
- *Will focus on health research but similar issues exist in other research fields*

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**Dr Iveta Simera**

Lab scientist by training

Last 16 years in health related research & management:

- Systematic reviews
- Clinical practice guidelines
- Improving research publications – EQUATOR Network
- Teaching, training
- Research ethics Oxford NHS B REC

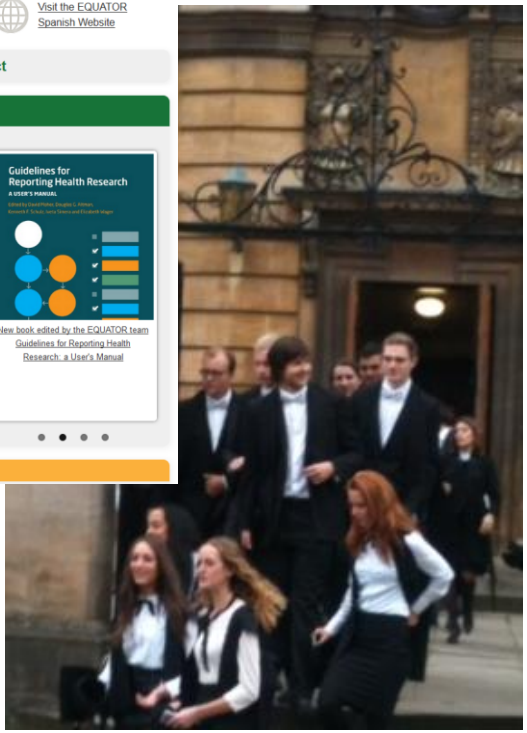
Parent of a student (and a future scientist)

UCL

Royal College of Nursing

The Cochrane Collaboration
Trusted evidence. Informed decisions. Better health.

UNIVERSITY OF OXFORD

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# Who is in the room? *

- Responsibility for (involvement in) health research
- Responsibility for influencing curriculum (course contents)
- Responsibility for recruiting students
- Responsibility for international development
- Other key role

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# Research output

# &

# Impact

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# The impact gap:

# SOUTH AMERICA
## *by the numbers*

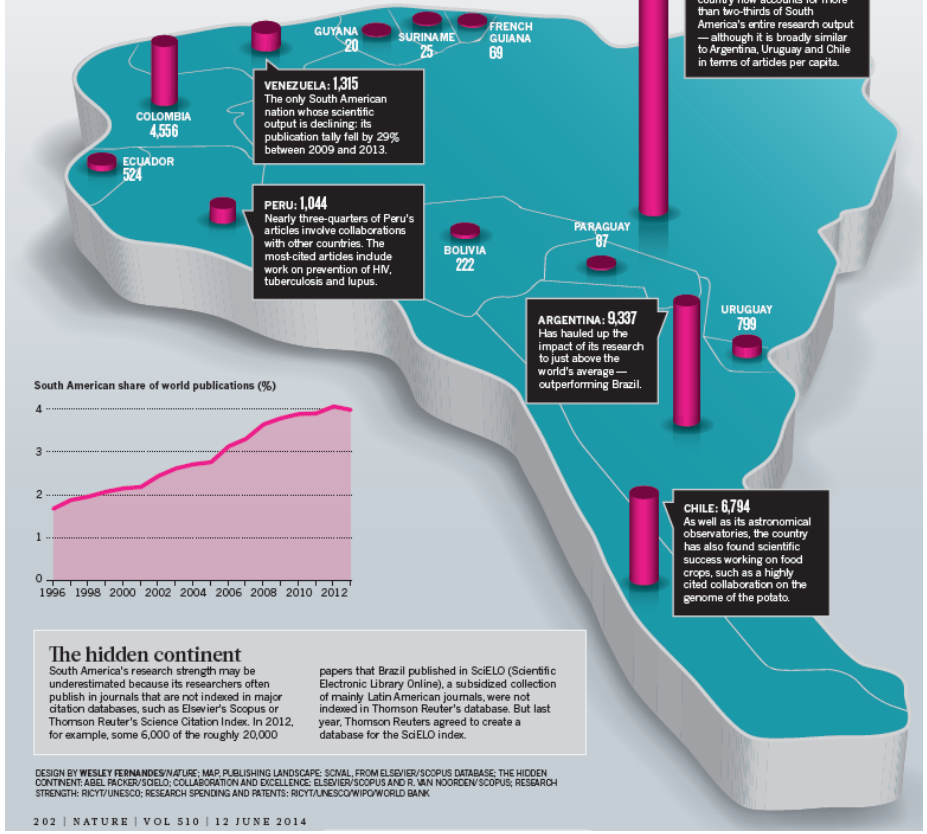
By Richard Van Noorden

The expanding economies of South America have led to a significant rise in scientific output over the past two decades, and research spending has increased in most countries. But given the region's share of the world's population and gross domestic product (GDP), publication rates still fall short of what would be expected. Research quality has not kept pace with rising output, and the continent's research papers still struggle to attract citations from the rest of the world. There are huge inequalities across the region, too: Brazil dominates the publication record, for example, whereas Chile takes pole position in the patent landscape and Argentina scores highly in terms of the proportion of its population working in science.

### THE PUBLISHING LANDSCAPE

South America has boosted its share of the world's research articles — but at 4%, it still underperforms slightly relative to its 5–6% share of world population and GDP.

NUMBER OF ARTICLES PUBLISHED IN ELSEVIER'S CITATION DATABASE SCOPUS IN 2013 (see 'The hidden continent' below)




### The hidden continent

South America's research strength may be underestimated because its researchers often publish in journals that are not indexed in major citation databases, such as Elsevier's Scopus or Thomson Reuter's Science Citation Index. In 2012, for example, some 6,000 of the roughly 20,000 papers that Brazil published in SciELO (Scientific Electronic Library Online), a subsidized collection of mainly Latin American journals, were not indexed in Thomson Reuter's database. But last year, Thomson Reuters agreed to create a database for the SciELO index.

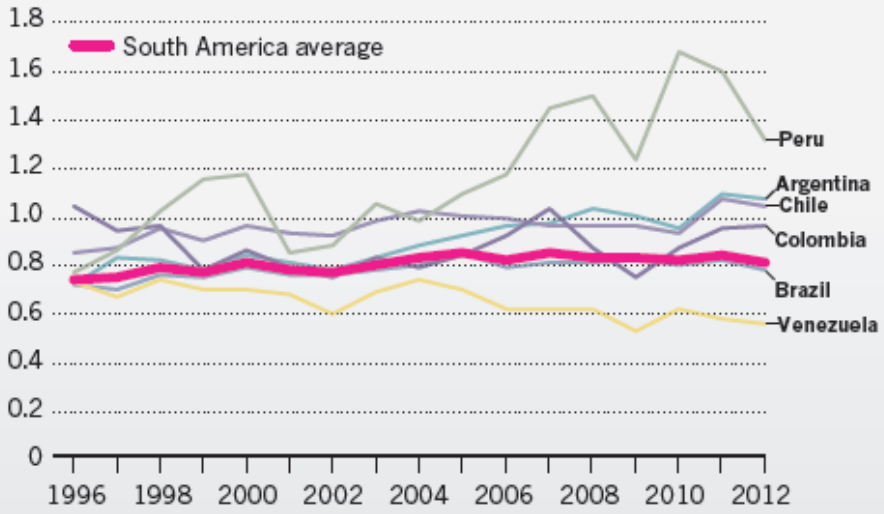
DESIGN BY WESLEY FERNANDES/NATURE; MAP, PUBLISHING LANDSCAPE: SCIVAL, FROM ELSEVIER/SCOPUS DATABASE; THE HIDDEN CONTINENT: ABEL PACKER/SCIELO; COLLABORATION AND EXCELLENCE: ELSEVIER/SCOPUS AND R. VAN NOORDEN/SCOPUS; RESEARCH STRENGTH: RICYT/UNESCO; RESEARCH SPENDING AND PATENTS: RICYT/UNESCO/WIPO/WORLD BANK



## COLLABORATION AND EXCELLENCE

South America's scholarly impact remains relatively low — its citation rate last year was around 80% of the world's average (below). Peru's articles do best, largely because most are co-authored with scientists outside the continent. Indeed, the region's less-developed countries are generally more likely to collaborate beyond South America. In Brazil, less than one-quarter of its articles in 2008–12 involved such partnerships (right).

**Citation impact weighted by research field (1 = world average)**




## RESEARCH STRENGTH

Brazil has more than 100,000 full-time researchers, single-handedly providing nearly two-thirds of South America's science personnel. But Argentina has the greatest proportion of researchers, with almost 3 scientists for every 1,000 workers.

**Full-time equivalent researchers per 1,000 labour force**


http://www.nature.com/news/the-impact-gap-south-america-by-the-numbers-1.15393

# How do we measure research impact? *

- Numbers
  - Publications in high IF journals, citations, …
- Change in our knowledge
  - Advancing our understanding
- Change in how we do things
  - Processes - how we work, produce goods, treat patients, …
- Change in what happens
  - Outcomes – how many people we cured from a disease

- Impact on
  - Research, economy, society, …

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# Impact of medical research


Laboratory research
Animal pre-clinical research

Phase I, II trials

Phase III trials
Observational research

Qualitative research, Diagnostic & prognostic; economic analyses, surveys

Phase IV / pragmatic trials
Outcomes research

Research synthesis / Systematic reviews

Clinical guidelines

*Policies*

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# Example 1: Randomised trial

## Features of Whey Protein Concentrate Supplementation in Children with Rapidly Progressive HIV Infection

*by* Y. F. Moreno,[a] V. C. Sgarbieri,[b] M. N. da Silva,[a] AADC Toro,[a] *and* M. M. S. Vilela[a]
[a]*Center for Investigation in Pediatrics (CIPED), Pediatrics Department, and* [b]*Food and Nutrition Department, Food Engineering School, State University of Campinas, São Paulo, Brazil*

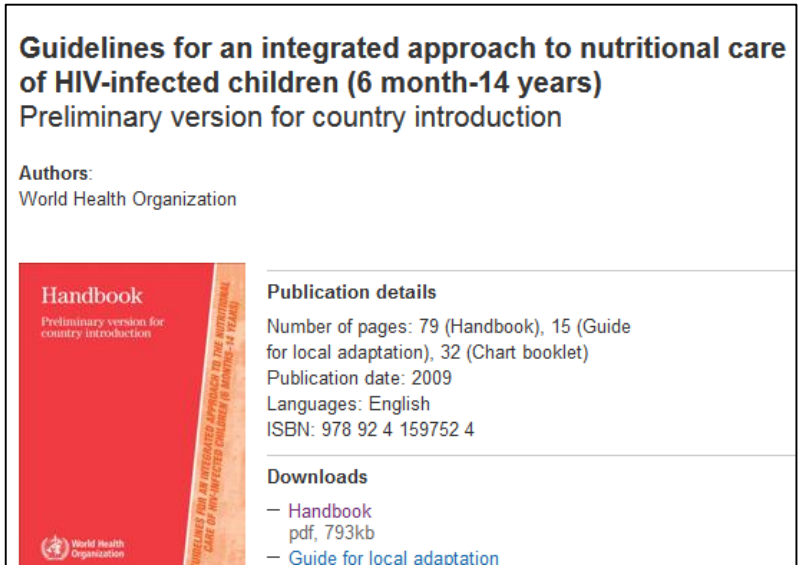
**Summary**

**HIV infection is associated with subnormal GSH levels. An increase in glutathione levels has been observed in HIV-infected adults under oral whey protein supplementation. We studied the features associated with a whey protein concentrate supplementation in children with rapidly progressive AIDS. A prospective double-blind clinical trial was carried out for 4 months with 18 vertically HIV-infected children (1.98–6.37 years), under antiretroviral therapy, who had received whey protein, maltodextrin (placebo) or none. Erythrocyte glutathione concentration, T lymphocyte counts ($CD4^+$ and $CD8^+$) and occurrence of associated co-infections were evaluated. Wilcoxon's and Fischer's Exact tests were used to assess differences between whey protein-supplemented and control (placebo and non-supplemented) groups. A significant median increase of 16.14 mg/dl ($p = 0.018$) in erythrocyte glutathione levels was observed in the whey protein-supplemented group; the TCD4/CD8 lymphocyte ratio showed a non significant increase and lower occurrence of associated co-infections was also observed. In conclusion, whey protein concentrate supplementation can stimulate glutathione synthesis and, possibly, decrease the occurrence of associated co-infections.**

*J Trop Pediatr (February 2006) 52 (1): 34-38. doi: 10.1093/tropej/fmi074*

# Included in a systematic review


Cochrane Database of Systematic Reviews 2013, Issue 2. Art. No.: CD004536. DOI: 10.1002/14651858.CD004536.pub3.




Possibly to inform the update of the 2009 WHO guidelines

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# Systematic reviews


- **Key steps:**
  - Formulation of a clear question
  - Eligibility criteria for studies
  - Search for potentially relevant studies
  - Selection of studies into the review
  - Extraction of data
  - Assessment of methodological quality of included studies (risk of bias)
  - Synthesis of findings (possibly using meta-analysis)
  - Presentation of data and results
  - Interpretation and drawing conclusions

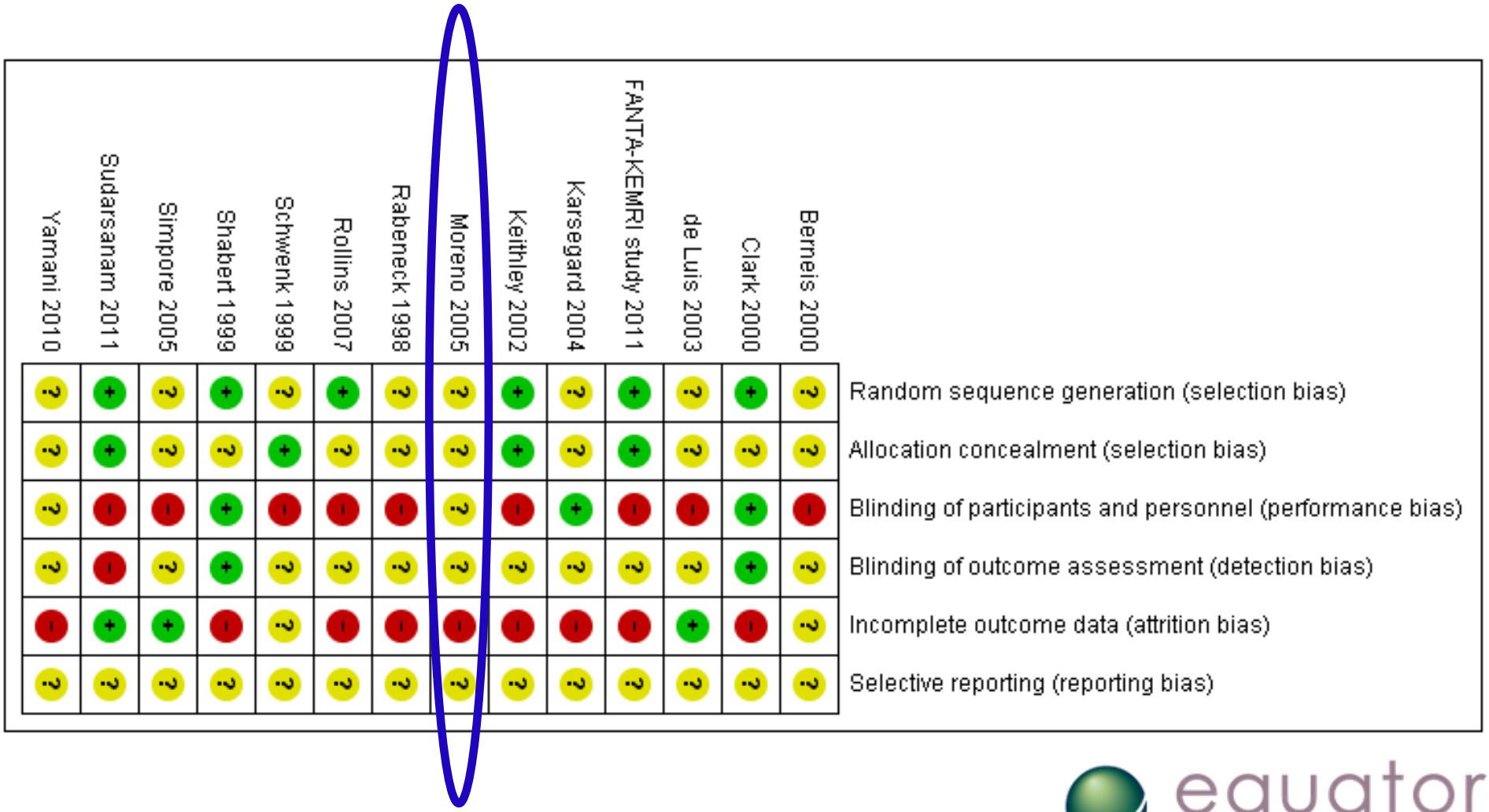
# Assessing risk of bias

## A critical element of a systematic review

- Risk of bias results from suboptimal methods
- Methods need to be reported well to allow assessment of risk of bias

**METHODS – each aspect of the methods**

| | Done well | Done poorly | Not done |
|---|---|---|---|
| **Fully reported (=reproducible)** | | | |
| **Ambiguously or incompletely reported** | | | |
| **Not reported** | | | |

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# Example 2:

OPEN ACCESS Freely available online

PLOS ONE

## Characteristics of Randomized Trials Published in Latin America and the Caribbean According to Funding Source

**Ludovic Reveiz[1]*, Stephanie Sangalang[1], Demian Glujovsky[2], Carlos E. Pinzon[3], Claudia Asenjo Lobos[4], Marcela Cortes[5], Martin Cañón[6], Ariel Bardach[2], Xavier Bonfill[7]**

**1** Health Systems Based on Primary Health Care, Pan American Health Organization (PAHO), Washington D.C., United States of America, **2** Argentine Cochrane Centre - Institute for Clinical Effectiveness and Health Policy (IECS), Buenos Aires, Argentina, **3** Instituto de Investigaciones, Fundación Universitaria Sanitas, Bogotá, Colombia, **4** Centro Rehabilitación Oral Avanzada e Implantología (CRAI) Universidad de Concepción (Centro Adherido Chileno de la Red Cochrane Iberoamericana), Santiago, Chile, **5** Chilean Branch of the Iberoamerican Cochrane Network, Universidad Católica de la Santísima Concepción, Santiago, Chile, **6** Facultad de Medicina, Fundación Universitaria Sanitas, Bogotá, Colombia, **7** Iberoamerican Cochrane Centre. Sant Pau Biomedical Research Institute (IIB-Sant Pau), The Biomedical Research Centre Network for Epidemiology and Public Health (CIBERESP) - Universitat Autònoma de Barcelona, Barcelona, Spain

**Abstract**

*Introduction:* Few studies have assessed the nature and quality of randomized controlled trials (RCTs) in Latin America and the Caribbean (LAC).

*Methods and Findings:* The aims of this systematic review are to evaluate the characteristics (including the risk of bias assessment) of RCT conducted in LAC according to funding source. A review of RCTs published in 2010 in which the author's

**Citation:** Reveiz L, Sangalang S, Glujovsky D, Pinzon CE, Asenjo Lobos C, et al. (2013) Characteristics of Randomized Trials Published in Latin America and the Caribbean According to Funding Source. PLoS ONE 8(2): e56410. doi:10.1371/journal.pone.0056410

# Key findings

- 526 RCTs published in 2010 conducted in LAC:
  - 369 (70%) from Brazil
- Researchers assessed strength of methodology in 162 Brazilian trials (where funding source was known)

| | **Risk of bias** (n=162 RCTs) | | |
|---|---|---|---|
| | **Low** | **High** | **Unclear** |
| Sequence generation | **70** | **4** | **88** |
| Allocation concealment | **48** | **8** | **106** |
| Blinding | **73** | **13** | **76** |
| Incomplete outcome data | **124** | **12** | **26** |
| Free of selective reporting | **34** | **2** | **126** |
| Other sources of bias | **98** | **22** | **42** |

*Acknowledgement:*
*With grateful thanks to Dr L. Reveiz, PAHO for sharing his study raw data*

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# Widespread deficiencies in research reporting

**What is missing from descriptions of treatment in trials and reviews?**

Replicating non-pharmacological treatments in practice depends on how well they have been described in research studies, say **Paul Glasziou** and **colleagues**

Have you ever read a trial or review and wondered exactly how to carry out treatments such as a "behavioural intervention," "salt reduction," or "exercise programme"? Although CONSORT and related ini-

receiving numerous requests for additional details from doctors and patients, the author of a randomised trial on graded exercise for chronic fatigue syndrome[5] subsequently published a supplementary article with a more

Exercise prescription: a case for standardised reporting

Clin Chem Lab Med 2012;50(3):411–413 © 2012 by Walter de Gruyter • Berlin • Boston. DOI 10.1515/cclm-2011-0904

**An appeal to medical journal editors: the need for a full description of laboratory methods and specimen handling in clinical study reports**

ARTICLE

**Adequacy of Published Oncology Randomized Controlled Trials to Provide Therapeutic Details Needed for Clinical Application**

Jennifer M. Duff, Helen Leather, Edmund O. Walden, Kourtney D. LaPlant, Thomas J. George Jr

Manuscript received July 9, 2009; revised March 15, 2010; accepted March 16, 2010.

**Correspondence to:** Thomas J. George Jr, MD, FACP, Division of Hematology Oncology, Department of Medicine, Health Science Center, University of Florida, PO Box 100278, Gainesville, FL 32610-0278 (e-mail: thom.george@medicine.ufl.edu).

of exercise reporting practices using the
e of exercise effects for chronic conditions as the
material. Inclusion criteria: systematic reviews
nmarised the effects of exercise programmes

as any kind of physical training to promote physical health.[12–14] Exercise can vary with respect to the type of muscle contraction, load, speed and range of movement, number of repetitions and

OPEN ACCESS Freely available online

**Publication Bias in Antipsychotic Trials: A Efficacy Comparing the Published Literat Food and Drug Administration Database**

Reporting of adverse events in randomized controlled trials of highly active antiretroviral therapy: systematic review

Michal Y. Chowers[1,2*], Bat Sheva Gottesman[1,2], Leonard Le
Steen Andreassen[4] and Mical Pau

[1]*Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel;* [2]*Mei*
[3]*Rabin Medical Center, Beilinson Campus, Petah-Tiqva, Israel;* [4]*Center*
*Support, Aalborg University, Aalborg, De*

*Received 5 February 2009; returned 3 April 2009; revised 20 April 20*

translation of the trial findings to clinical practice. Potential solutions
of submission guidelines, use of online appendices, and providing o

ee Shapley[5]

egon, United States of America, 2 Departme
ealth Care, Oregon Health & Science Universi
edical Center, Portland, Oregon, United Sta

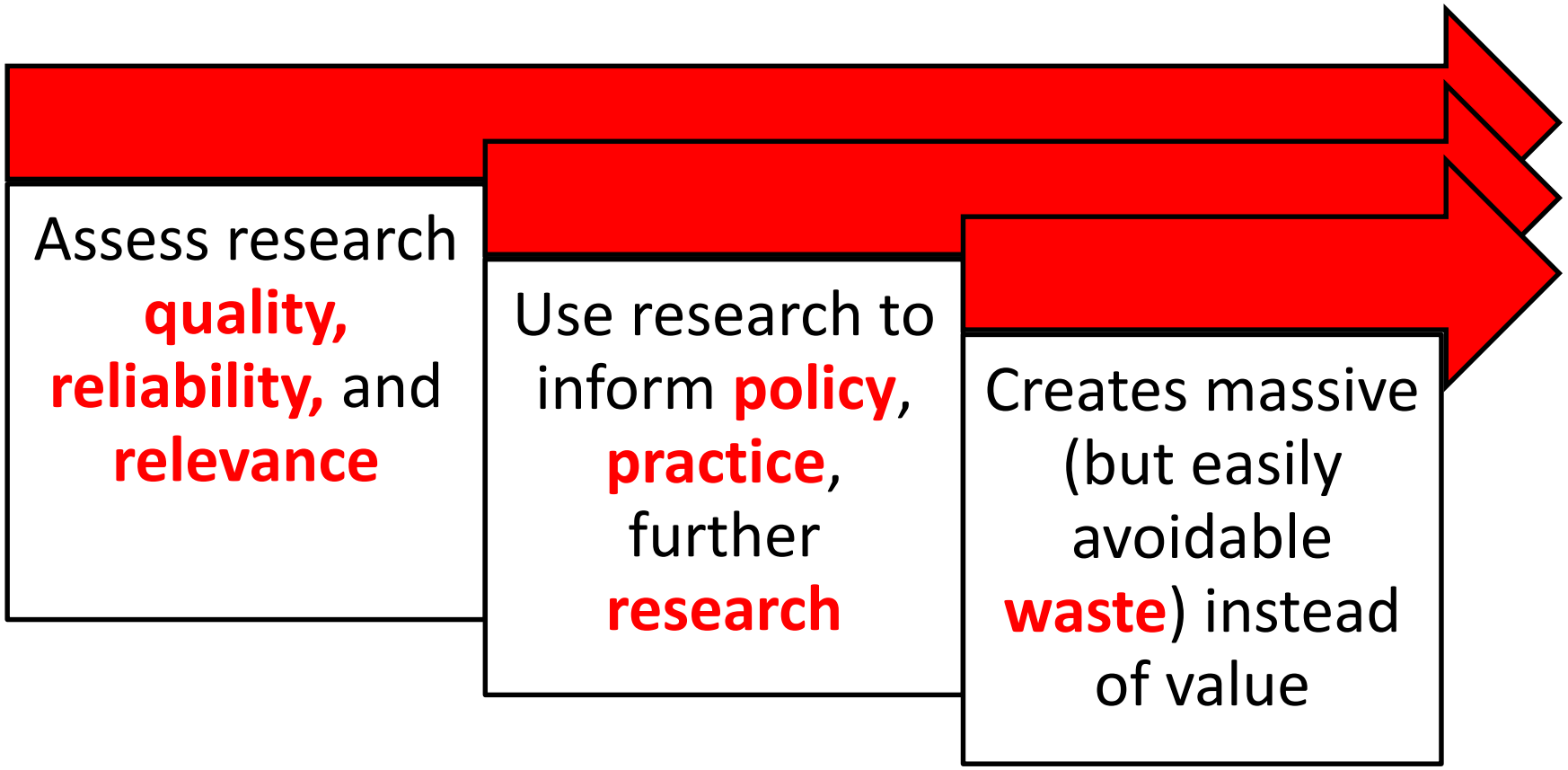
RESEARCH ARTICLE Open Access

**Electronic search strategies to identify reports of cluster randomized trials in MEDLINE: low precision will improve with adherence to reporting standards**

Monica Taljaard[1,2*], Jessie McGowan[1,3,4,5], Jeremy M Grimshaw[1,6], Jamie C Brehaut[1,2], Andrew McRae[7], Martin P Eccles[8], Allan Donner[7,9]

f evidence-based medicine, yet a
g regulatory agencies, e.g., the US
h data in journal articles can be ch
tent to which it inflates apparent

**Unclear description** & **insufficient information** about research **PREVENTS** us to

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# Research under more scrutiny

- Systematic review development (research synthesis) highlighted problems

Research integrity, reproducibility, selective reporting, harmonising core outcomes, standardisation, data sharing, transparency, ….

- More ‘research into research’

Focus on research
- Is my research published?
- Is my research published & useful & useable & reproducible?

# Research can only have an impact if:

- It is reliable (well designed and well conducted)
- It is reported completely, accurately and timely
- Accessible, widely available

- Other factors (answering needed questions, ..)

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# University reputation

# &

# Rankings

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# QS World University Rankings


- http://www.topuniversities.com/university-rankings-articles/world-university-rankings/qs-world-university-rankings-methodology

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# Top Universities - ranking

- 6 key indicators with different weighting :
  - **Academic reputation** (40%)
  - Employer reputation (10%)
  - Students to faculty ratio (20%)
  - **Citations per faculty** (20%)
  - International faculty ratio (5 %)
  - International student ratio (5%)

Supportive research environment:
- Provide resources
- Provide training
- Create 'right' culture

BRAZIL

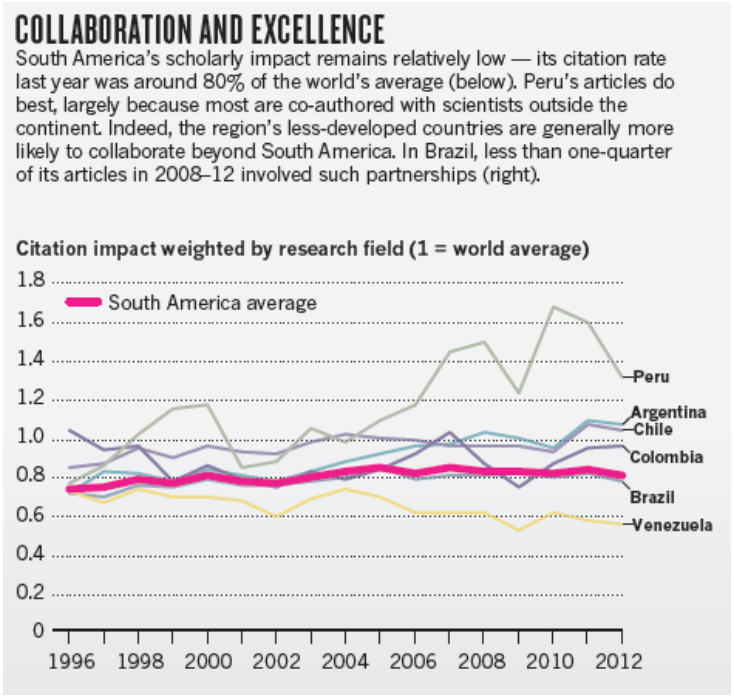
**Reward quality not quantity**

Sidarta Ribeiro *is director of the Brain Institute at the Federal University of Rio Grande do Norte, Brazil*

# Publishing in leading journals

- Large range of journals with great reputation

- Key to the success
  - Good research
  - Well prepared manuscript
    - Well written
    - Well reported – no information missing or ambiguous

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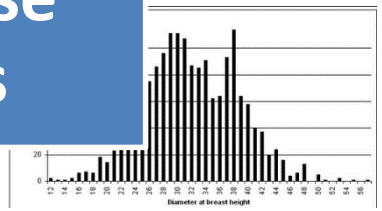
# What to include in a research article?

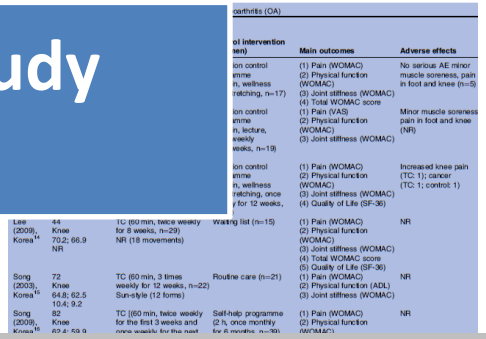
**Electronic patient-level dataset**

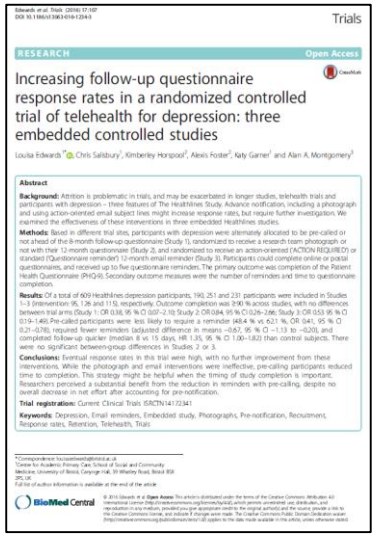
**Completed case report forms**

**Clinical study report**

| Time | flow rate (FR) | dilution rate (D) | Specific perfusion rate (SPR) | Viable count (VC) | Viability | product concentration | Specific production rate of IgG1 | Volumetric production rate |
|---|---|---|---|---|---|---|---|---|
| | | | | | % | g/L | pg/(cell .day) | g/L.day |
| | | | | | 90 | 0.012 | NA | NA |
| | | | | | 77 | 0.008 | NA | 0.000 |
| | | | | | 73 | 0.008 | 0.0 | 0.000 |
| | | | | | 80 | 0.013 | 12.1 | 0.000 |
| | | | | | 87 | 0.019 | 9.3 | 0.000 |
| | | | | | 92 | 0.033 | 12.0 | 0.000 |
| | | | | | 95 | 0.035 | 5.5 | 0.009 |
| | | | | | 95 | 0.054 | 9.5 | 0.017 |
| | | | | | 97 | 0.073 | 7.2 | 0.026 |
| | | | | | 97 | 0.067 | 3.5 | 0.040 |
| 10 | 4.29 | 0.95 | 0.05 | 18.6 | 97 | 0.115 | 7.8 | 0.069 |
| 11 | 5.40 | 1.20 | 0.04 | 26.9 | 97 | 0.140 | 7.0 | 0.137 |
| | | | | | 96 | 0.127 | 5.6 | 0.179 |
| | | | | | 99 | 0.129 | 5.6 | 0.202 |
| | | | | | 98 | 0.139 | 5.8 | 0.238 |





Trials

RESEARCH Open Access

Increasing follow-up questionnaire response rates in a randomized controlled trial of telehealth for depression: three embedded controlled studies

Louisa Edwards, Chris Salisbury, Kimberley Horspool, Alexis Foster, Katy Garner and Alan A. Montgomery

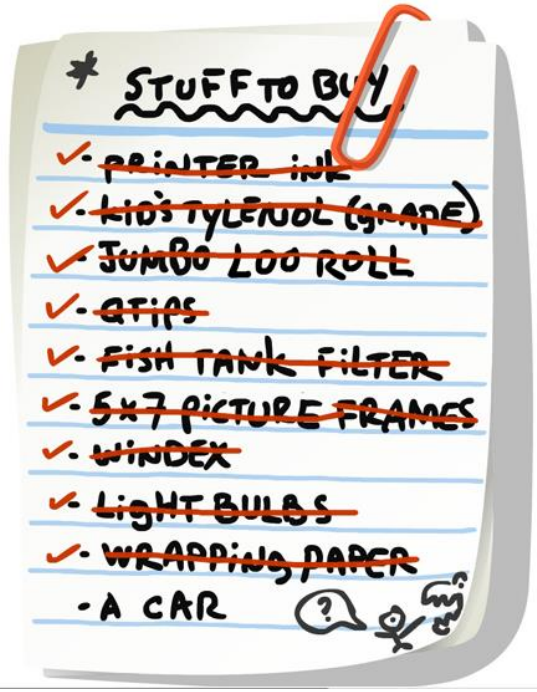
Abstract

BioMed Central

**Reporting guidelines**

# Reporting guidelines

- ‘Reminders’ of scientific content
  - Methodology
  - Clinical / Research related focus
- Form:
  - Structured text, checklist
  - Move towards e-templates / writing tools
- Most internationally accepted RGs
  - Based on evidence
  - Consensus of relevant stakeholders (multidisciplinary group)
- Can be viewed as ‘social innovation’ – by scientists & users



# Reporting guidelines

## Reporting guidelines for main study types

| | |
|---|---|
| Randomised trials | CONSORT |
| Observational studies | STROBE |
| Systematic reviews | PRISMA |
| Case reports | CARE |
| Qualitative research | SRQR |
| Diagnostic / prognostic studies | STARD |
| Quality improvement studies | SQUIRE |
| Economic evaluations | CHEERS |
| Animal pre-clinical studies | ARRIVE |
| Study protocols | SPIRIT |

See all 297 reporting guidelines

**CONSORT 2010 Checklist** www.consort-statem

| Section / topic | # | Checklist item |
|---|---|---|
| TITLE & ABSTRACT | 1a | Identification as a randomised trial in the title |
| | 1b | Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts) |
| **INTRODUCTION** | | |
| Background and objectives | 2a | Scientific background and explanation of rationale |
| | 2b | Specific objectives or hypotheses |
| **METHODS** | | |
| Trial design | 3a | Description of trial design (such as parallel, factorial) including allocation ratio |
| | 3b | Important changes to methods after trial commencement (such as eligibility criteria), with reasons |
| Participants | 4a | Eligibility criteria for participants |
| | 4b | Settings and locations where the data were collected |
| Interventions | 5 | The interventions for each group with sufficient details to allow replication, including how and when they were actually administered |
| Outcomes | 6a | Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed |
| | 6b | Any changes to trial outcomes after the trial commenced, with reasons |
| Sample size | 7a | How sample size was determined |
| | 7b | When applicable, explanation of any interim analyses and stopping guidelines |
| Randomisation | | |
| Sequence generation | 8a | Method used to generate the random allocation sequence |
| | 8b | Type of randomisation; details of any restriction (such as blocking and block size) |
| Allocation concealment | 9 | Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal |

# Journals increasingly require adherence to reporting guidelines

| | Full Journal Title | Total Cites | Journal Impact Factor |
|---|---|---|---|
| 1 | NEW ENGLAND JOURNAL OF MEDICINE | 268,652 | 55.873 |
| 2 | LANCET | 185,361 | 45.217 |
| 3 | JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION | 126,479 | 35.289 |
| 4 | ANNALS OF INTERNAL MEDICINE | 48,356 | 17.810 |
| 5 | BMJ-British Medical Journal | 89,031 | 17.445 |
| 6 | ARCHIVES OF INTERNAL MEDICINE | 38,021 | 17.333 |
| 7 | PLOS MEDICINE | 18,649 | 14.429 |
| 8 | JAMA Internal Medicine | 2,934 | 13.116 |
| 9 | BMC Medicine | 5,708 | 7.356 |
| 10 | Journal of Cachexia Sarcopenia and Muscle | 713 | 7.315 |

Yes – all reporting guidelines for the main study design

Link to EQUATOR resources

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# Types of article and manuscript requirements

Please ensure that anything you submit to *The Lancet* follows the guidelines provided for each article type. For instruction on how to format the text of your paper, including tables, figures, panels, and references, please see our Formatting guidelines.

## Red section (Articles and Clinical pictures)

### Articles

- *The Lancet* prioritises reports of original research that are likely to change clinical practice or thinking about a disease (Lancet 2000; 356: 2–4)
- We offer fast-track peer review and publication of randomised controlled trials that we judge of importance to practice or research (see Fast-track publication)
- We invite submission of all clinical trials, whether phase 1, 2, 3, or 4 (see Lancet 2006; 368: 827–28). For phase 1 trials, we especially encourage those of a novel substance for a novel indication, if there is a strong or unexpected beneficial or adverse response, or a novel mechanism of action
- We encourage researchers to enrol women and ethnic groups into clinical trials of all phases, and to plan to analyse data by sex and by race
- Systematic reviews of randomised trials about diseases that have a major effect on human health also might warrant rapid peer review and publication
- Global public-health and health-policy research are other areas of interest to *The Lancet*
- We require the registration of all interventional trials, whether early or late phase, in a primary register that participates in WHO's International Clinical Trial Registry Platform (see Lancet 2007; 369: 1909–11). We also encourage full public disclosure of the minimum 20-item trial registration dataset at the time of registration and before recruitment of the first participant (see Lancet 2006; 367: 1631–35. The registry must be independent of for-profit interest
- Reports of trials must conform to CONSORT 2010 guidelines, and should be submitted with their protocols
- All reports of randomised trials should include a section entitled Randomisation and masking, within the Methods section. Please refer to *The Lancet*'s formatting guidelines for randomised trials.
- Cluster-randomised trials must be reported according to CONSORT extended guidelines
- Randomised trials that report harms must be described according to extended CONSORT guidelines
- Studies of diagnostic accuracy must be reported according to STARD guidelines
- Observational studies (cohort, case-control, or cross-sectional designs) must be reported according to the STROBE statement, and should be submitted with their protocols
- We encourage the registration of all observational studies on a WHO-compliant registry (see Lancet 2010; 375: 348)
- Genetic association studies must be reported according to STREGA guidelines
- Systematic reviews and meta-analyses must be reported according to PRISMA guidelines
- To find reporting guidelines see http://www.equator-network.org

# Most biomedical journal follow ICMJE

ICMJE INTERNATIONAL COMMITTEE of MEDICAL JOURNAL EDITORS

Enter search terms SEARCH

Recommendations | Conflicts of Interest | Journals Following the ICMJE Recommendations | About ICMJE | News & Editorials

## *Recommendations*


**Read the Recommendations** for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals.

## *Conflicts of Interest*


**Use the ICMJE Form** for Disclosure of Potential Conflicts of Interest to generate a disclosure statement for your manuscript.

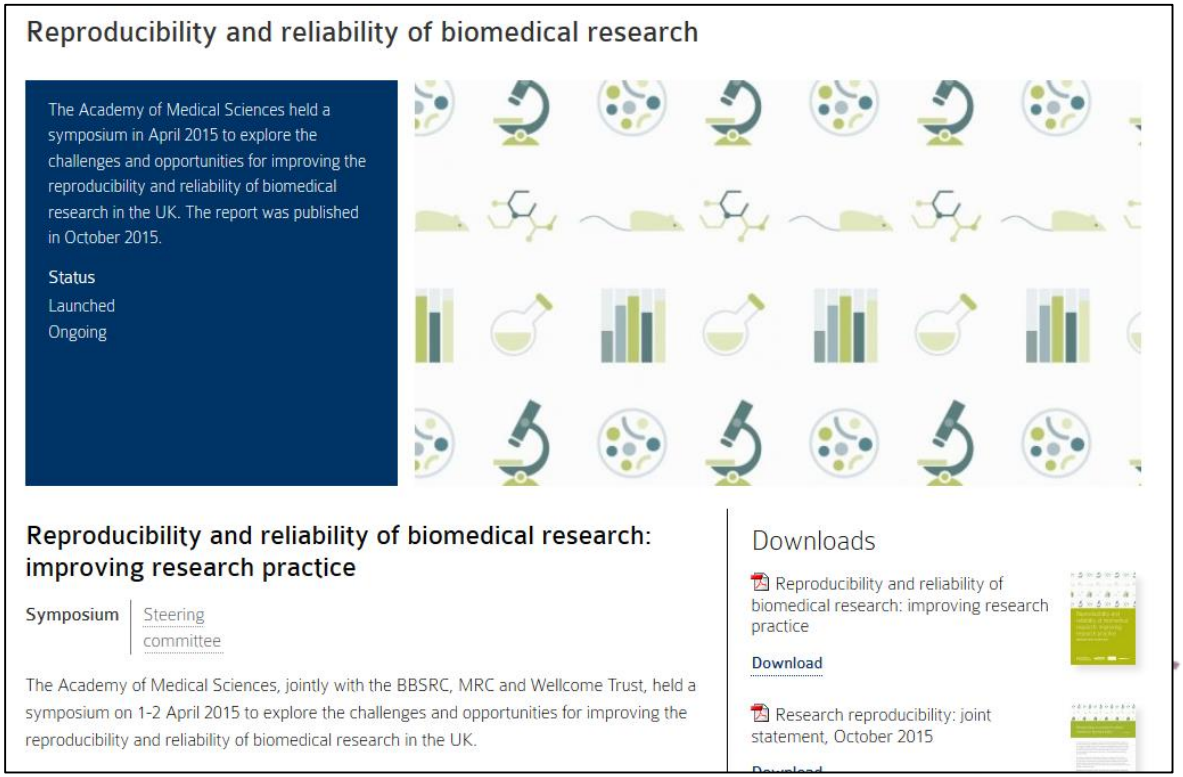
## *2. Reporting Guidelines*

Reporting guidelines have been developed for different study designs; examples include CONSORT for randomized trials, STROBE for observational studies, PRISMA for systematic reviews and meta-analyses, and STARD for studies of diagnostic accuracy. Journals are encouraged to ask authors to follow these guidelines because they help authors describe the study in enough detail for it to be evaluated by editors, reviewers, readers, and other researchers evaluating the medical literature. Authors of review manuscripts are encouraged to describe the methods used for locating, selecting, extracting, and synthesizing data; this is mandatory for systematic reviews. Good sources for reporting guidelines are the EQUATOR Network and the NLM's Research Reporting Guidelines and Initiatives.

# International collaborations

- New requirements of ‘local’ research funders - important for international collaborations to be aware of these initiatives

- UK example



# Reproducibility and the conduct of research

## Issues

**Data dredging**
Also known as p-hacking, this involves repeatedly searching a dataset or trying alternative analyses until a 'significant' result is found.

**Omitting null results**
When scientists or journals decide not to publish studies unless results are statistically significant.

**Underpowered study**
Statistical power is the ability of an analysis to detect an effect, if the effect exists – an underpowered study is too small to reliably indicate whether or not an effect exists.

**Errors**
Technical errors may exist within a study, such as misidentified reagents or computational errors.

**Underspecified methods**
A study may be very robust, but its methods not shared with other scientists in enough detail, so others cannot precisely replicate it.

**Weak experimental design**
A study may have one or more methodological flaws that mean it is unlikely to produce reliable or valid results.

**Improving reproducibility will ensure that research is as efficient and productive as possible. This figure summarises aspects of the conduct of research that can cause irreproducible results, and potential strategies for counteracting poor practice in these areas. Overarching factors can further contribute to the causes of irreproducibility, but can also drive the implementation of specific measures to address these causes. The culture and environment in which research takes place is an important 'top-down' overarching factor. From a 'bottom-up' perspective, continuing education and training for researchers can raise awareness and disseminate good practice.**

Figure taken from the report of the symposium, 'Reproducibility and reliability of biomedical research', organised by the Academy of Medical Sciences, BBSRC, MRC and Wellcome Trust in April 2015. The full report is available from http://www.acmedsci.ac.uk/researchreproducibility.

## Possible strategies

**Open data**
Openly sharing results and the underlying data with other scientists.

**Pre-registration**
Publicly registering the protocol before a study is conducted.

**Collaboration**
Working with other research groups, both formally and informally.

**Automation**
Finding technological ways of standardising practices, thereby reducing the opportunity for human error.

**Open methods**
Publicly publishing the detail of a study protocol.

**Post-publication review**
Continuing discussion of a study in a public forum after it has been published (most are reviewed before publication).

**Reporting guidelines**
Guidelines and checklists that help researchers meet certain criteria when publishing studies.

HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND hefce

RESEARCH POLICY | November 10th 2015

# Research impact: learning lessons from the REF

- **Lesson 5: Researchers who deliver high-quality academic research also deliver high-quality impact**

http://blog.hefce.ac.uk/2015/11/10/research-impact-learning-lessons-from-the-ref/

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PLOS ONE

RESEARCH ARTICLE

# Is Quality and Completeness of Reporting of Systematic Reviews and Meta-Analyses Published in High Impact Radiology Journals Associated with Citation Rates?

## Conclusion

There is a positive correlation between the quality and the completeness of a reported SR or MA with citation rate which persists when adjusted for journal IF and journal 5-year IF.



## Abstract

### Purpose

The purpose of this study is to determine whether study quality and completeness of reporting of systematic reviews (SR) and meta-analyses (MA) published in high impact factor (IF) radiology journals is associated with citation rates.



**Citation:** van der Pol CB, McInnes MDF, Petrcich W, Tunis AS, Hanna R (2015) Is Quality and Completeness of Reporting of Systematic Reviews

# Maximising the value of research

# &

# Building strong research reputation

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- What we do and how it can help your researchers, students and organisation as a whole

- What you can consider doing

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# In 2006 we set up EQUATOR

- **E**nhancing the **QUA**lity and **T**ransparency **O**f health **R**esearch
- **We foster best practices & standards**

- Immediate goal
  - To support better publication of research for health through the **use of reporting guidelines**
    - Well documented shortcomings
    - A large number of reporting guidelines that are not routinely used

- Longer term goal
  - Through improved reporting of current studies improve the quality of future research

# EQUATOR Network

**Steering group**

**UK EQUATOR Centre**


**Since 2014French EQUATOR Centre**

**Canadian EQUATOR Centre**

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# Where do we want to make a difference? EQUATOR core programme

- Raise **awareness**
  - Problems resulting from inadequate reporting
  - Existence of helpful resources / tools
- Provide **resources**
  - Ensure people have easy access to reliable, up-to-date resources
- Develop an education and **training** programme
  - Improve people's research reporting skills

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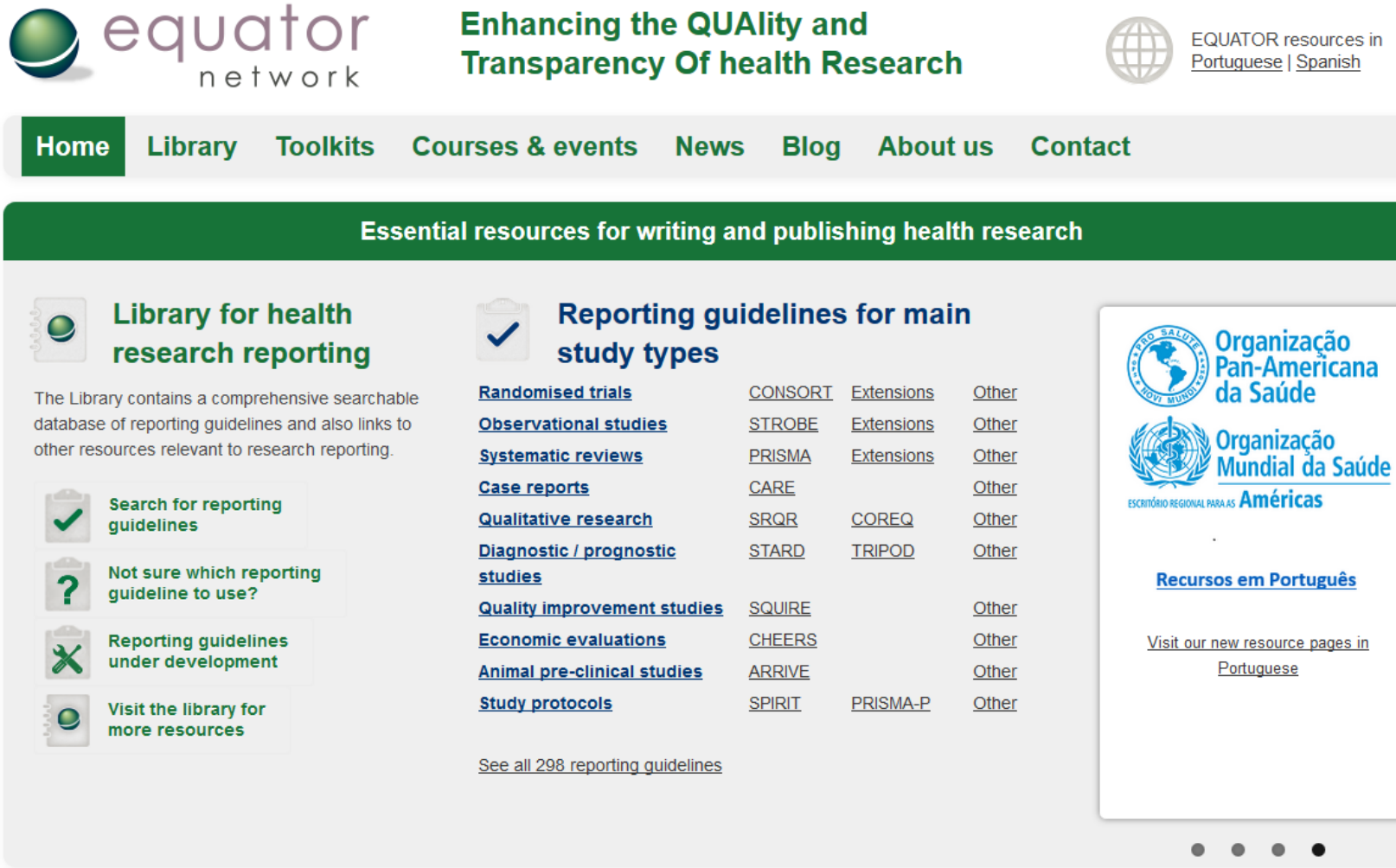
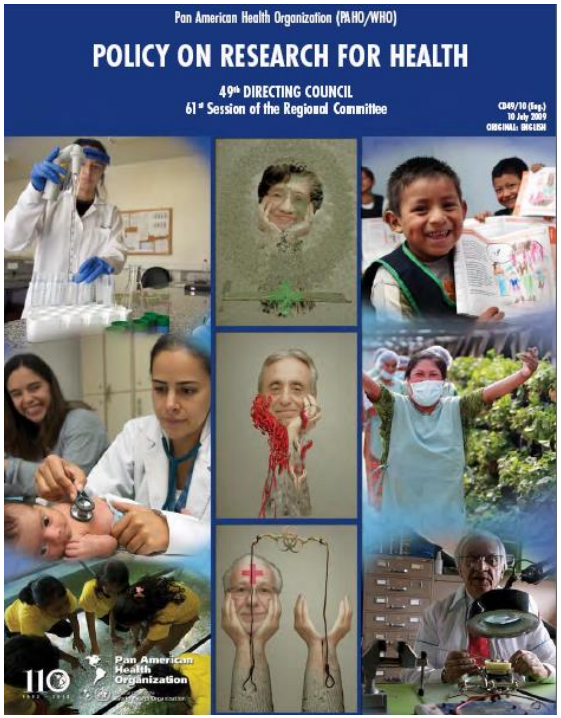
# EQUATOR online resources

**www.equator-network.org**



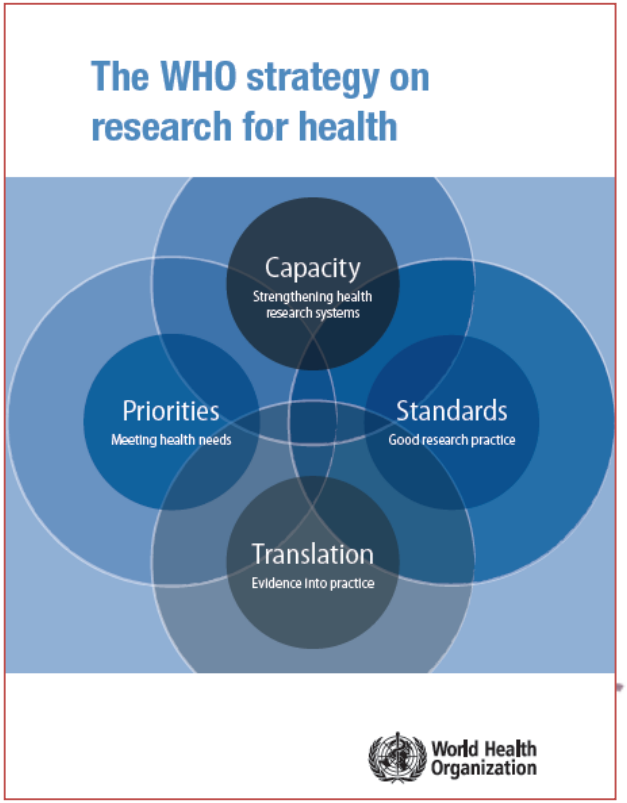
# EQUATOR – PAHO collaboration

- Adequate reporting of health research, the development of research reporting standards, improving competencies of and support for human resources involved in research, among other things, are central to leading policies on research for health




**Policy on Research for Health (Americas) CD49/10 2009**

**63rd WHA. WHO Strategy on Research for Health 2010**




## Six objectives

1. Promote the generation of relevant, ethical, and quality research.
2. Strengthen research governance and promote the definition of research agendas.
3. Improve competencies of and support for human resources involved in research.
4. Seek efficiencies and enhanced impact and appropriation of research through effective and strategic alliances, collaboration, and the building of public trust and engagement in research.
5. Foster best practices and enhanced standards for research.
6. Promote the dissemination and utilization of research findings.

# EQUATOR – PAHO collaboration

- **Memorandum of understanding, 2010**
  - Support the Policy on Research for Health of the Americas by raising the standards in the reporting
- **First projects carried under the memorandum**
  - EQUATOR website and main reporting guidelines translated to Spanish
  - Promotion of reporting guidelines in Latin America and the Caribbean; awareness raising
  - Dissemination and promotion of new guidelines (PAJPH)
- **Other projects**
  - Further development of Spanish / Portuguese resources
  - Series of webinars on research reporting and reporting guidelines, workshop for journal editors
  - Librarians' Network
  - Integration with scholarships (e.g. OAS, Grupo Coimbra de Universidades Brasileras) and other capacity development programs

Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

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# Resources in Portuguese / Recursos em Português

Organização Pan-Americana da Saúde

Organização Mundial da Saúde
Escritório Regional para as Américas

## Bem-vindo às páginas em português do site EQUATOR Network

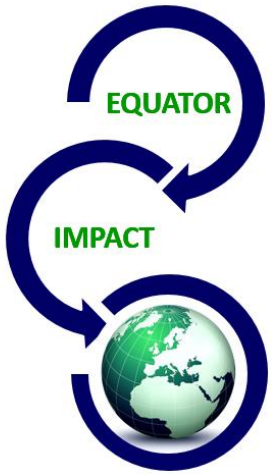
Essas páginas foram elaboradas em colaboração com a Organização Pan-Americana da Saúde (OPAS/ OMS), com quem estamos trabalhando para promover relatos responsáveis de pesquisa em saúde, principalmente nas Américas. Aqui, define-se relato de pesquisa como todo e qualquer documento proveniente de pesquisa científica na área de saúde; especialmente artigos científicos.

Os recursos relacionados abaixo foram traduzidos para o português (não considerando a base de dados de diretrizes para relatos).

## Biblioteca para relatos de pesquisa em saúde

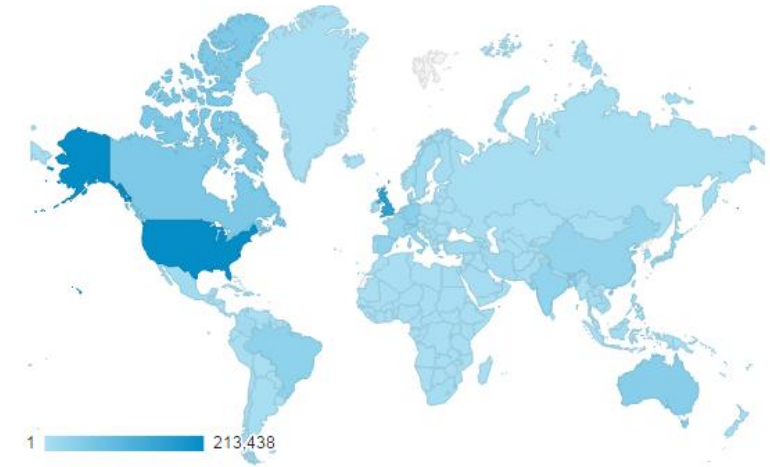
A Biblioteca para relatos de pesquisa em saúde oferece uma compilação atualizada das diretrizes e documentos de política relacionados a esses relatos destinados principalmente a autores de artigos de pesquisa, editores de periódicos, revisores e desenvolvedores de diretrizes para relatos.

- Busca de diretrizes para relatos
- Diretrizes para relatos em formulação
- Traduções de diretrizes para relatos
- Orientação sobre redação científica
- Diretrizes formuladas por grupos editoriais
- Orientação dos financiadores de pesquisa sobre requisitos para relatos
- Pesquisa patrocinada pela indústria: orientação adicional
- Ética na pesquisa e publicação e diretrizes de boas práticas
- Links
- Ajuda
- Sobre a biblioteca




# Awareness raising and resource uptake

- **1,042,900** users from **230 countries**


From **0** to **35,000** users per month

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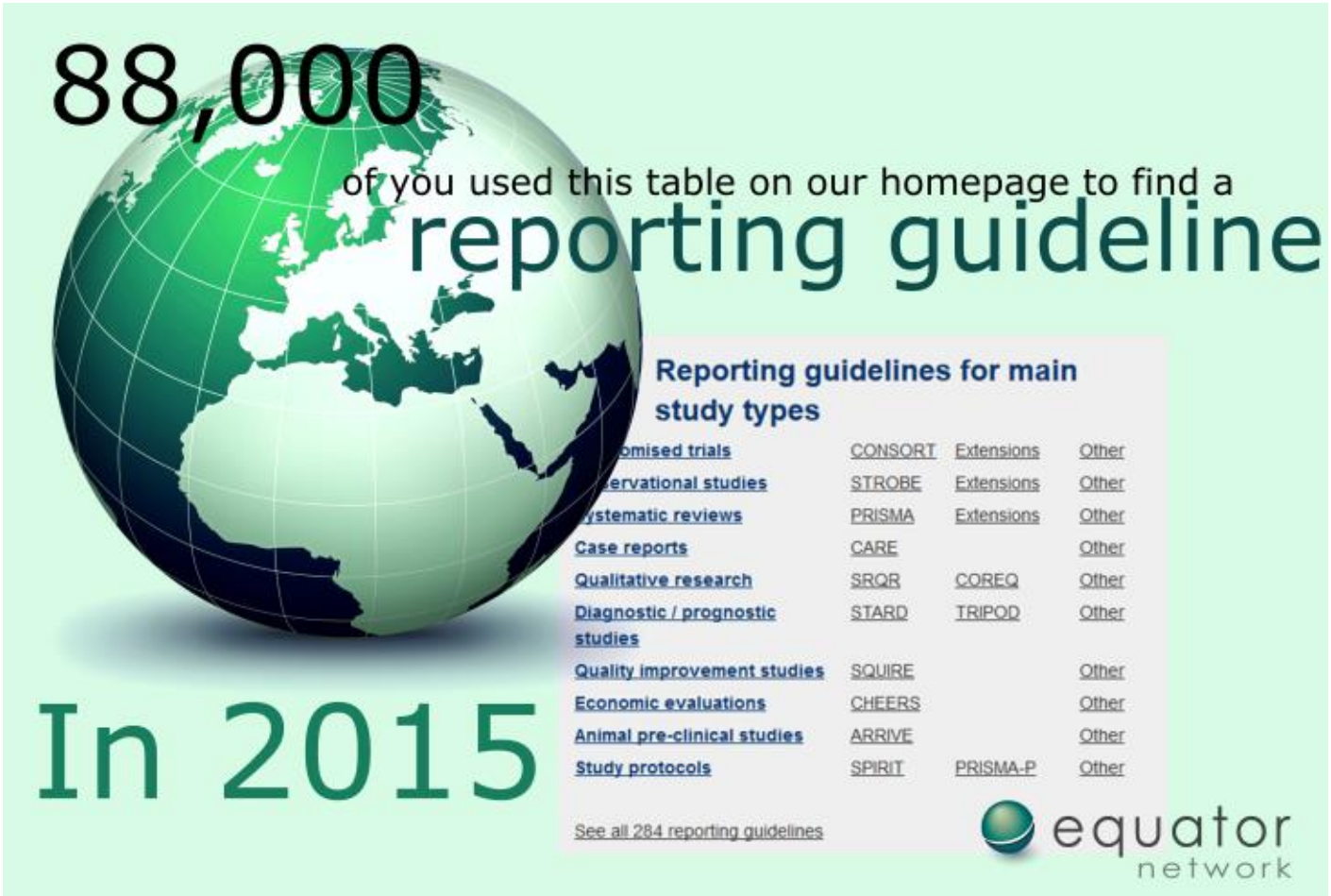
# Easy access to reporting guidelines




# Improving people's skills through our education activities

- **4** international conferences
- **9** workshops for journal editors
- **16** courses for researchers & students
- **+++** talks, presentations, webinars

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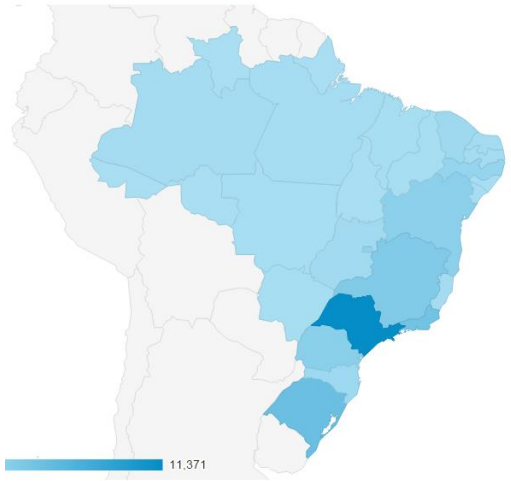
# EQUATOR uptake in Brazil

- Accessed our resources in Eng
- Attended our courses




| | 1,042,851<br>% of Total: 100.00%<br>(1,042,851) |
|---|---|
| 1. United States | 213,438 (20.47%) |
| 2. United Kingdom | 160,751 (15.41%) |
| 3. Canada | 57,579 (5.52%) |
| 4. Australia | 44,504 (4.27%) |
| 5. Germany | 38,679 (3.71%) |
| 6. Brazil | 35,035 (3.36%) |
| 7. Spain | 33,393 (3.20%) |
| 8. Netherlands | 32,510 (3.12%) |
| 9. India | 31,197 (2.99%) |
| 10. China | 28,388 (2.72%) |

| | |
|---|---|
| 1. State of Sao Paulo | 11,371 (32.46%) |
| 2. State of Rio Grande do Sul | 4,418 (12.61%) |
| 3. State of Rio de Janeiro | 3,834 (10.94%) |
| 4. State of Minas Gerais | 2,734 (7.80%) |
| 5. State of Parana | 2,144 (6.12%) |
| 6. State of Bahia | 2,056 (5.87%) |
| 7. Federal District | 1,723 (4.92%) |
| 8. State of Pernambuco | 1,391 (3.97%) |
| 9. State of Santa Catarina | 894 (2.55%) |
| 10. State of Ceara | 785 (2.24%) |

# EQUATOR in Brazil – WCRI 2015, Rio

- High prominence to issues of responsible reporting of research studies


# EQUATOR in Brazil

Review

**Use of guidelines to improve the quality and transparency of reporting oral health research**

*Rafael Sarkis-Onofre [a,d], Maximiliano Sérgio Cenci [a], Flávio Fernando Demarco [a,d,*], Christopher D. Lynch [b], Padhraig S. Fleming [c], Tatiana Pereira-Cenci [a], David Moher [e,f]*

[a] Graduate Program in Dentistry, Federal University of Pelotas, Rua Gonçalves Chaves, 457, Pelotas, RS 96015-560, Brazil
[b] Learning & Scholarship, School of Dentistry, College of Biomedical and Life Sciences, Cardiff University, Heath Park, Cardiff, CF14 4XY, UK
[c] Barts and The London School of Medicine and Dentistry, Institute of Dentistry, Queen Mary University of London, New Road, E1 2BA London, UK
[d] Clinical Epidemiology Program, Ottawa Hospital Research Institute, 725 Parkdale Avenue, Ottawa, ON K1Y 4E9, Canada
[e] Post-Graduate Program in Epidemiology, Federal University of Pelotas, Rua Mal. Deodoro, 1160, Pelotas, RS 96020-220, Brazil
[f] Department of Epidemiology and Community Medicine, University of Ottawa, 451 Smyth Road, Ottawa, ON K1H 8M5, Canada

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http://dx.doi.org/10.1590/S0102-311X2011001000001

EDITORIAL

**La mejora de la calidad y transparencia en la investigación en salud puede conducir a mejoras en la toma de decisiones sobre políticas de salud pública: ayuda de la red EQUATOR**

**Gilberto Kac[I]; Allison Hirst[II]**

[I]Instituto de Nutrição, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil. kacetal@gmail.com

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http://dx.doi.org/10.5935/0004-2749.20140017

EDITORIAL

**Endorsement of reporting guidelines is our next step**

**O endosso das diretrizes de publicação é o nosso próximo passo**

**Rodrigo Pessoa Cavalcanti Lira[1]**

[1]Departamento de Oftalmologia, Universidade Federal de Pernambuco (UFPE), Recife, PE, Brazil. Departamento de Oftalmologia, Universidade Estadual de Campinas (UNICAMP), Campinas, SP, Brazil.

Training means learning to follow rules, experience is recognizing exceptions[(1)]. Unfortunately the latter is provided exclusively by the time, however initiatives such as the EQUATOR (**E**nhancing the **QU**ality **A**nd **T**ransparency **O**f health **R**esearch) Network and its reporting guidelines may help with the former. The purpose of this international initiative (launched in June 2008) is to improve the value and reliability of the research literature by p reporting[(2)].

## Transparent reporting of studies relevant to physical therapy practice

Como
prática

Leonardo C

**Abstract**

Background: The
therapy practice
and results. Mo
guidelines that w
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others, the CON
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to reporting of a
is mandatory. Th
possible quality

Keywords: phys

**Resumo**

Contextualizaçã
são diretamente
à transparência
ao redor do mundo têm feito tentativas bem sucedidas para resolver esse problema por meio da criação de diretrizes que auxiliam os pesquisadores não apenas na preparação dos manuscritos, mas também garantem que detalhes importantes relacionados ao

The use of these statements can benefit authors, journal reviewers and readers of physical therapy journals. From the author's perspective, these statements have the potential to ease the writing of manuscripts as these minimum set of recommendations are likely to guarantee that all relevant aspects of research design will be covered. Journal reviewers can use the statements to check if all necessary information from submitted articles was presented or not, which can guide their decision to accept the manuscript, or provide feedback to the author on how to improve their manuscript. Finally and most importantly, from the reader's point of view, articles that are written based on the recommendations from these statements are easier to interpret and appraise, and ultimately, they will help readers to make better decisions in clinical practice.

# Why should we support high standards in research reporting?

- Moral imperative

- Widespread benefits
  - Individuals (researchers, clinicians, policy makers, patients)
  - Institutions – universities
    - Strong international research & education reputation

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# Accurate, complete and transparent reporting should be a norm

- How to achieve this?
  - Leadership and influence at every level
  - Clearly defined policies, requirements and expectations
  - Provision of tools, standards, and other resources
  - Education, training, advocacy and examples
  - Motivation and incentives
  - Application of safeguards and checks
- Collaboration of all key stakeholders
  - Researchers, research organisations, sponsors and regulators
  - Journals (editors, peer reviewers, publishers)
  - Other organisations (higher education, IRBs, REC, development and intergovernmental agencies, ...)

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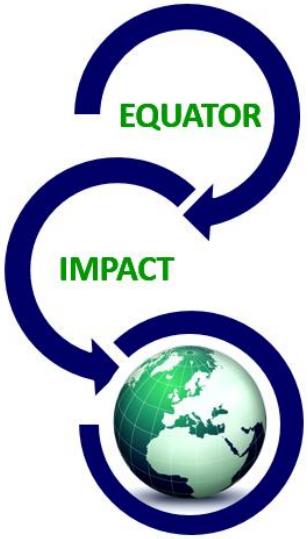
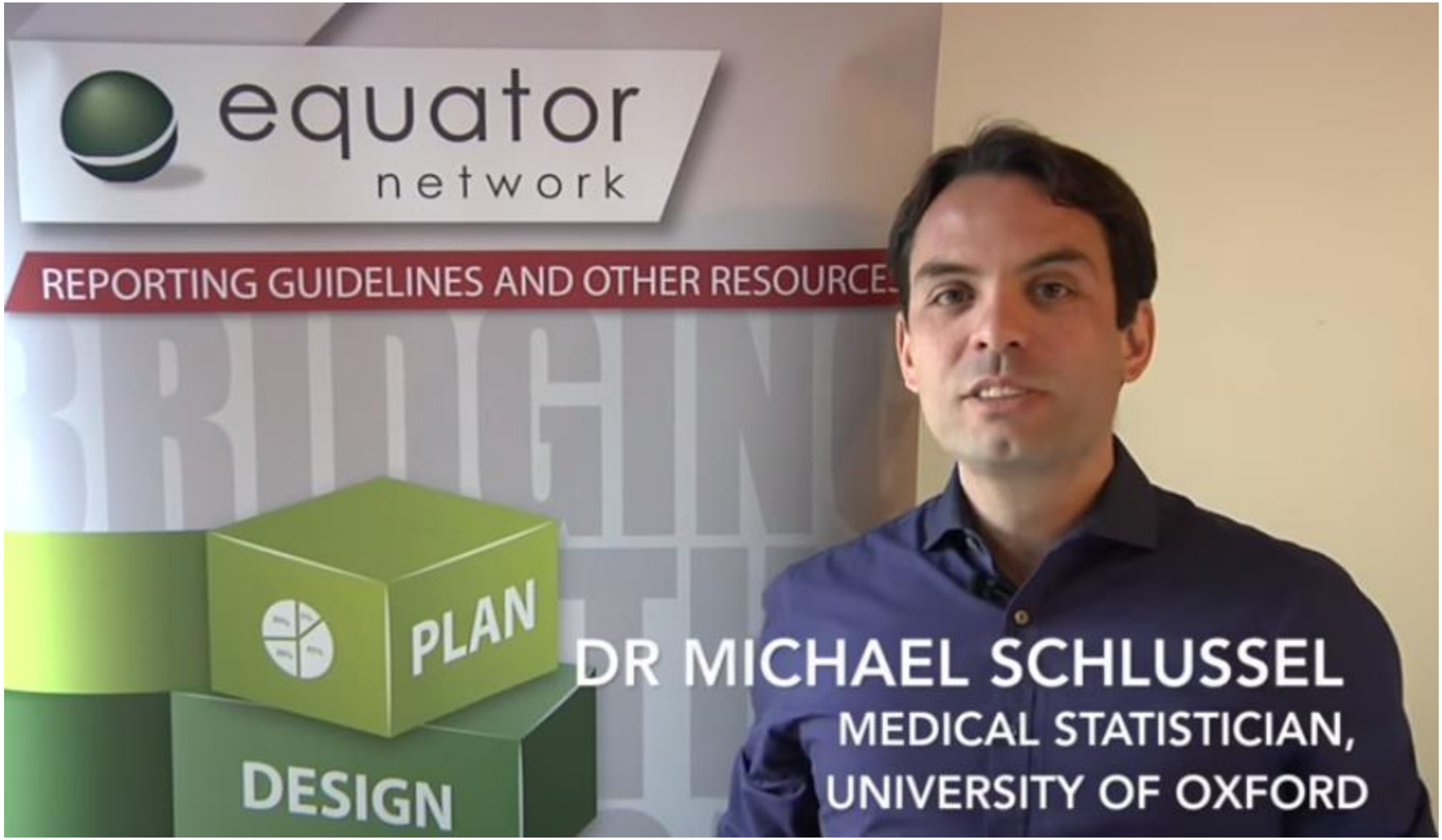
**“Without accessible and usable reports, research cannot help patients and their clinicians.”**

*Chalmers I. & Glasziou P. Avoidable waste in the production and reporting of research evidence. Lancet 2009*

# www.equator-network.org

iveta.simera@csm.ox.ac.uk






https://www.youtube.com/watch?v=z9a_ub_n484&list=PL6hS8Moik7ku2Luc8YDsZfDzNkEv08Kow&index=2