

An Introduction to Cochrane Collaboration and its Impact on Medical Practices

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REHA-Kolloquium
Frankfurt 20. März 2017

Conflicts of interest

- The Cochrane Germany is a central unit of the University Medical Centre Freiburg
- G. Antes is 100% employed by the University Hospital
- Potential conflict:
Long-lasting commitment to Evidence and Systematic Reviews

Contents

- Evidence to answer the crucial question: What works?
- Systematic reviews as key technology for knowledge synthesis
- Cochrane as host for global knowledge and rigorous methodology

Transfer of Research into Practice

Answers to medical questions

- Clinical (randomised / controlled) studies
- Epidemiological (observational -) studies

....

Body of Evidence



**1968 McMaster Univ.
Hamilton, Canada
1971 Archie Cochrane, UK
1993 Cochrane Collab.
1998 Cochrane Germany**

Evidence
production

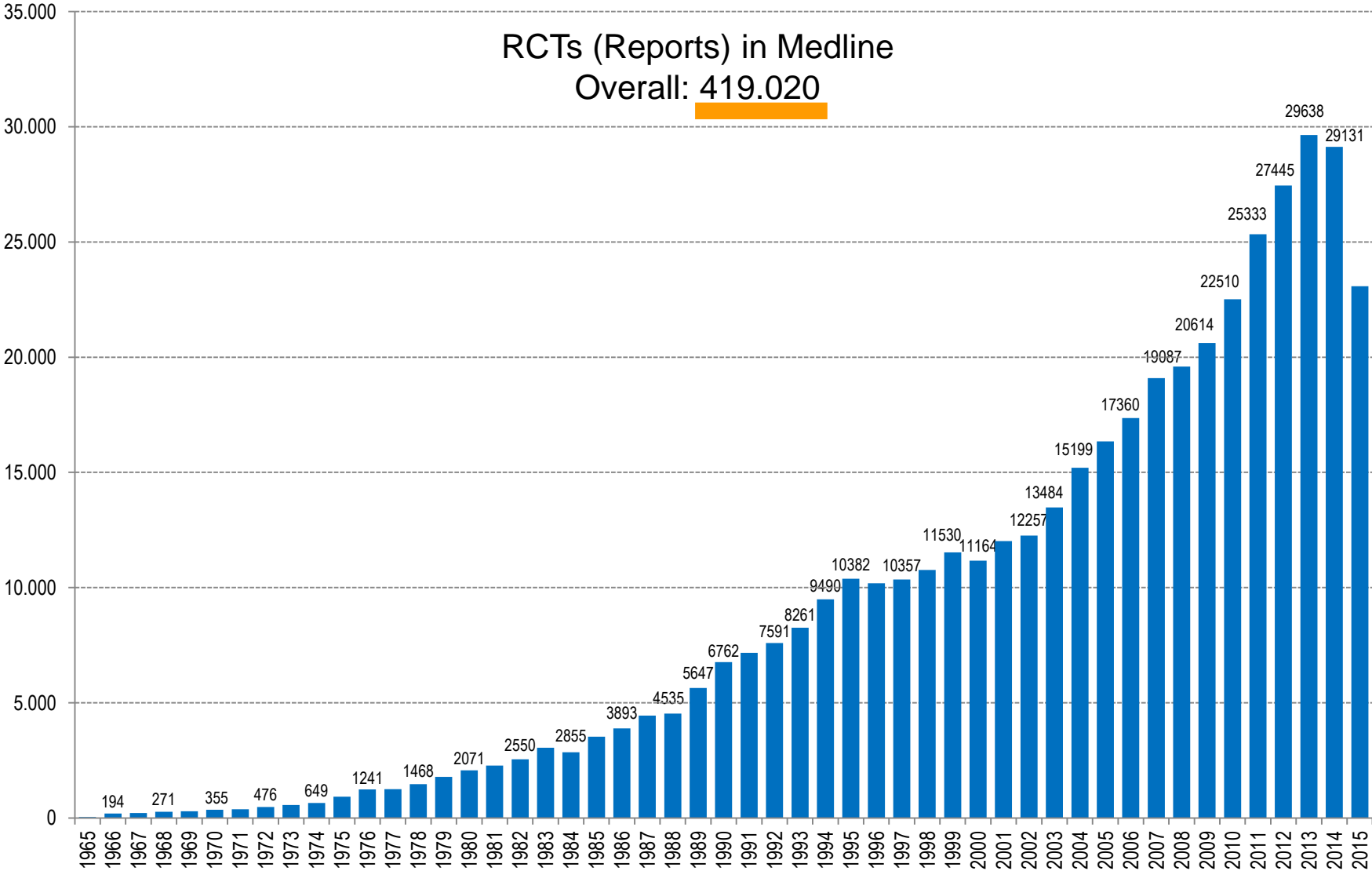
Evidence
application

Knowledge Translation

- Practicing physicians
- Health authorities, sickness funds, insurances, institutions
- Clinical research
- Patients

The trial deluge

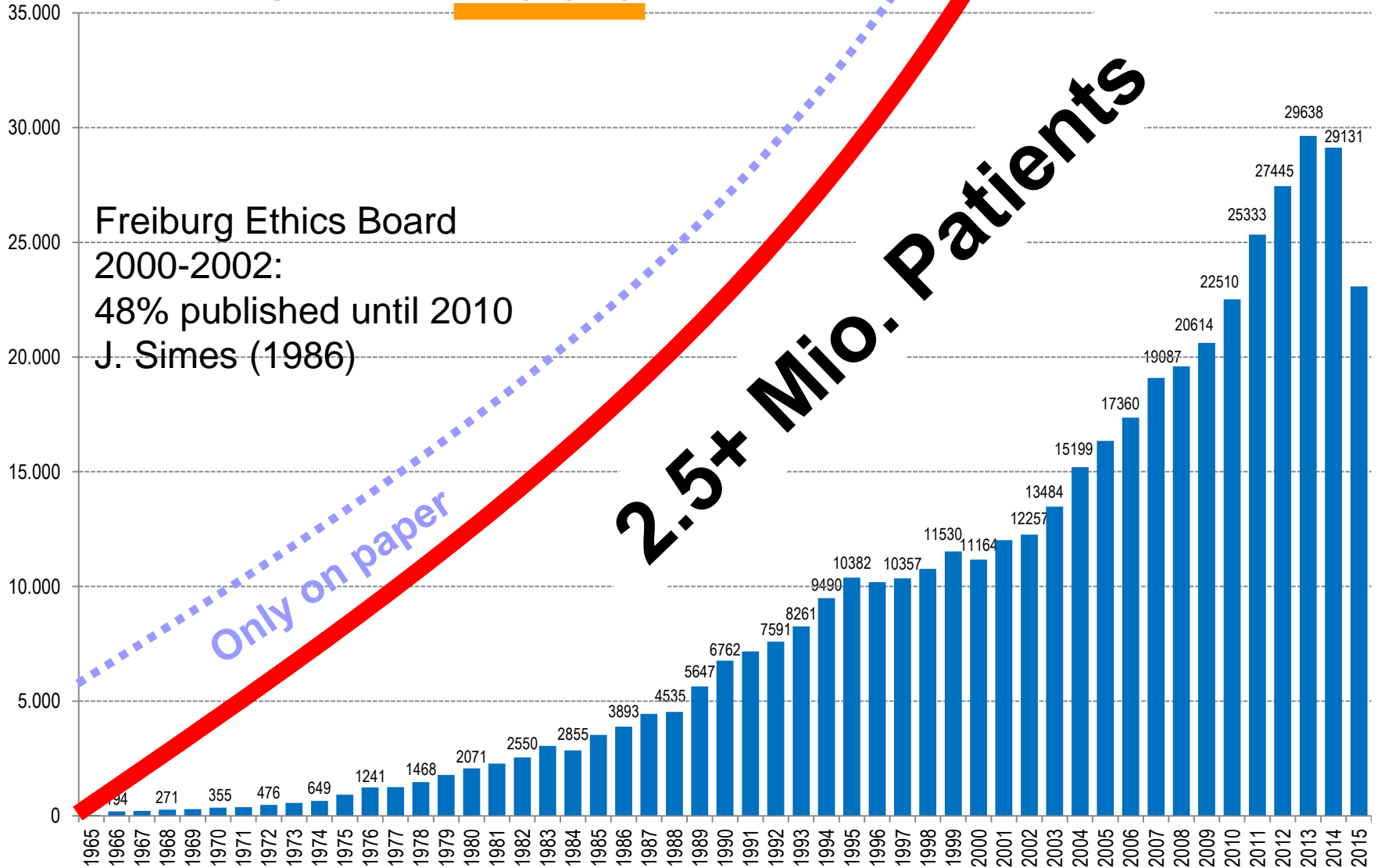
RCTs (Reports) in Medline Overall: 419.020



The truth

RCTs (Reports) in Medline (PubMed)

Overall: **419.020**



Transfer of Research into Practice

Clinical studies (experimental, randomised, controlled, prospective)

Epidemiological studies (observational, retrospective)

Systematic Reviews

global



EBM

Health Technology Assessment (HTA)

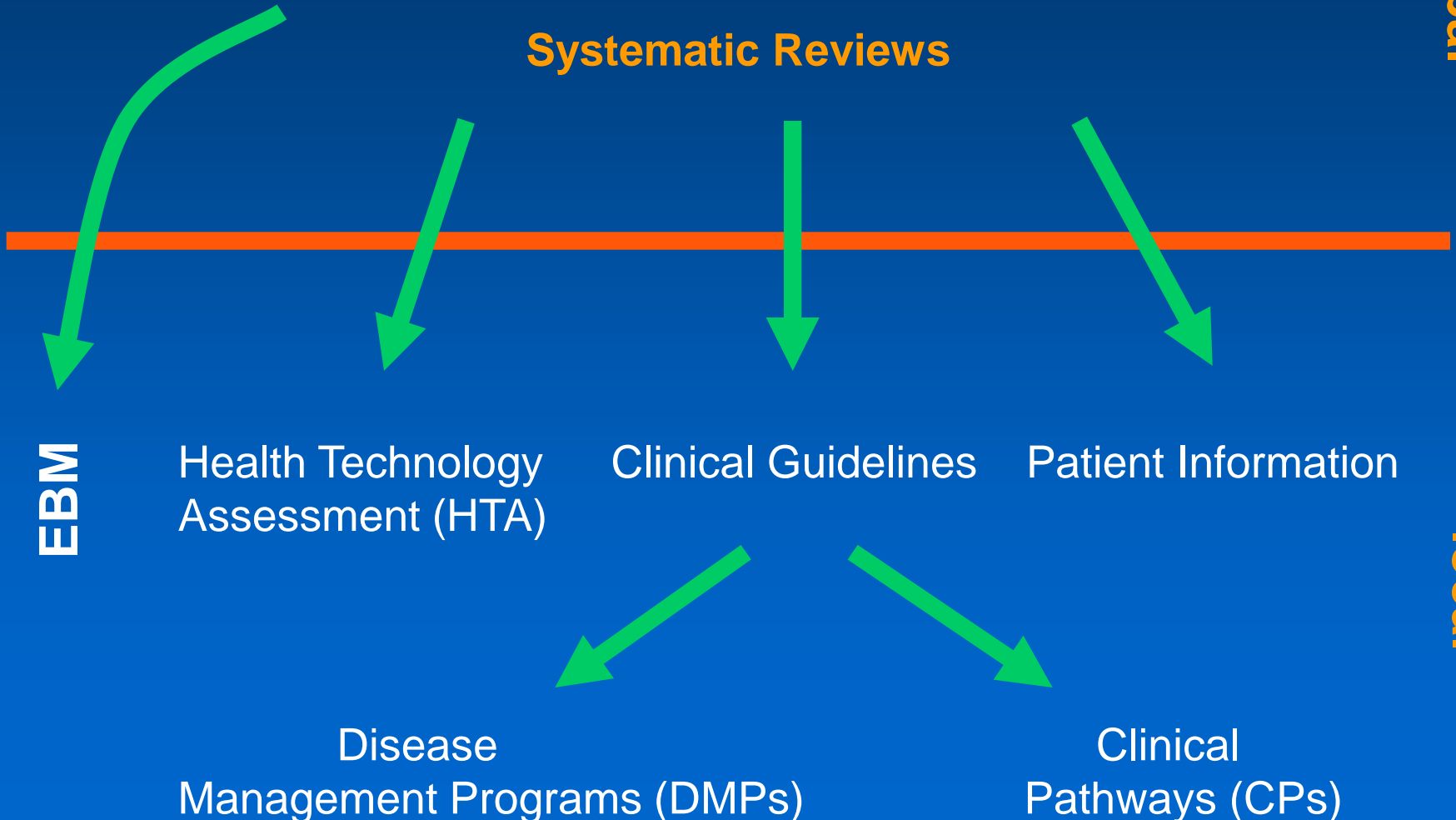
Clinical Guidelines

Patient Information

local

Disease Management Programs (DMPs)

Clinical Pathways (CPs)



The knowledge refinery

„All“ trials ?

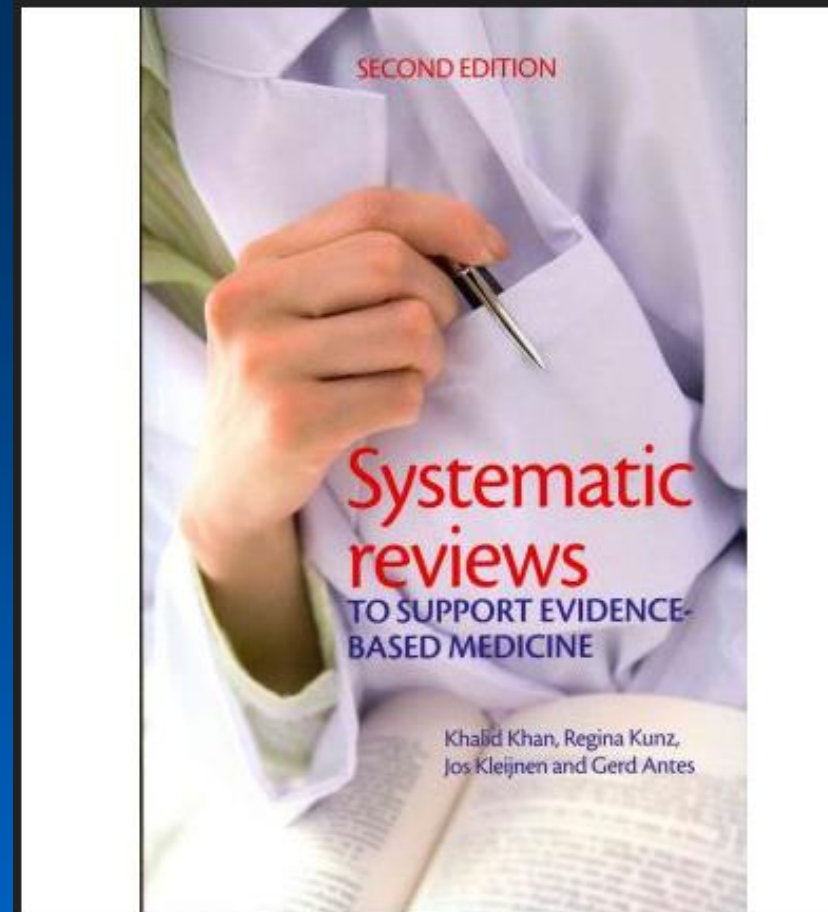


?

Quality?

Review

1. Framing the question (PICO)
2. Systematic search for evidence from relevant trials and studies
3. Critical appraisal of trials - inclusion
4. Summary and quantitative synthesis (if possible)
5. Interpreting and putting in context



July 2011

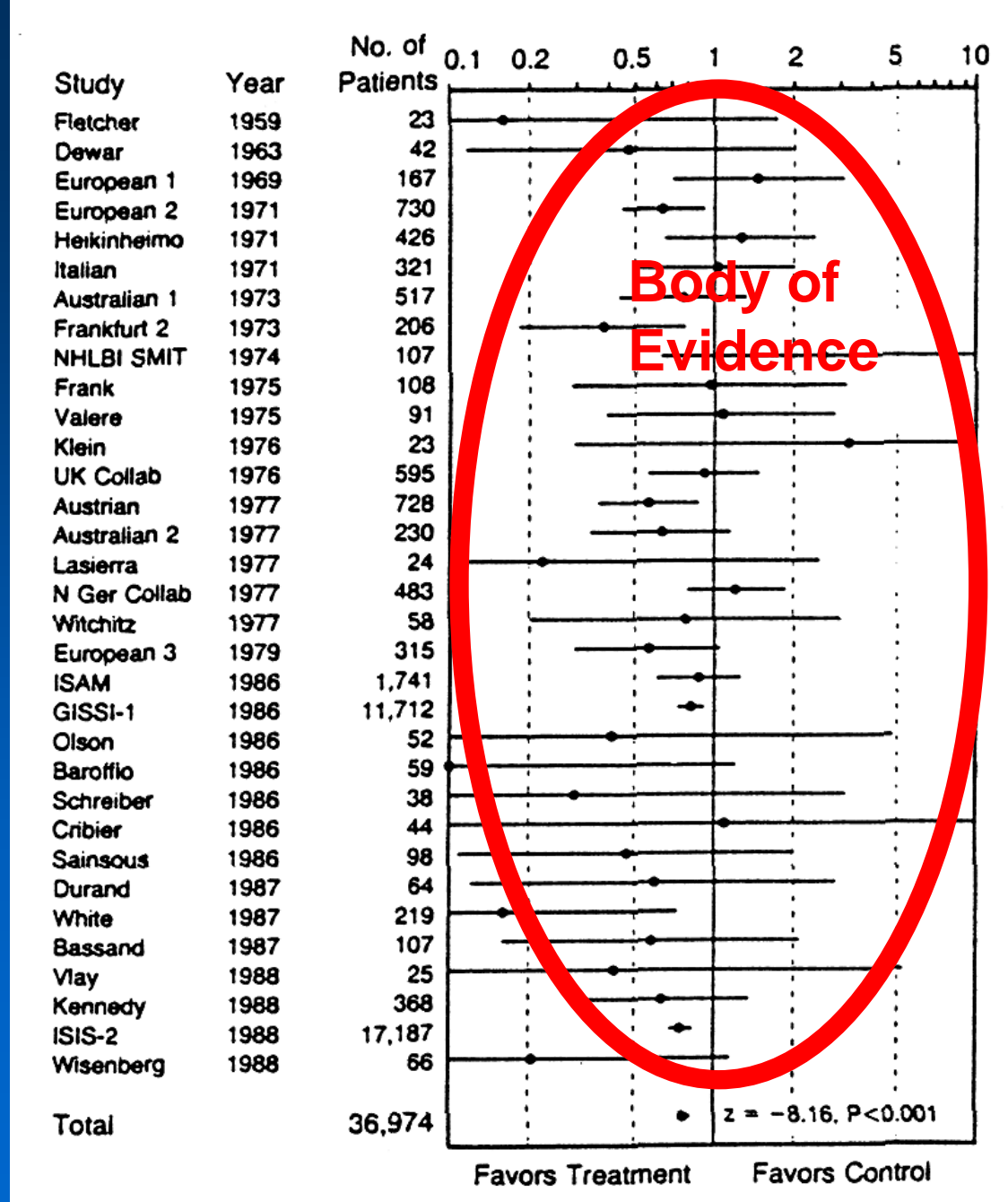
Updating!!

Produce unbiased view of “all” evidence

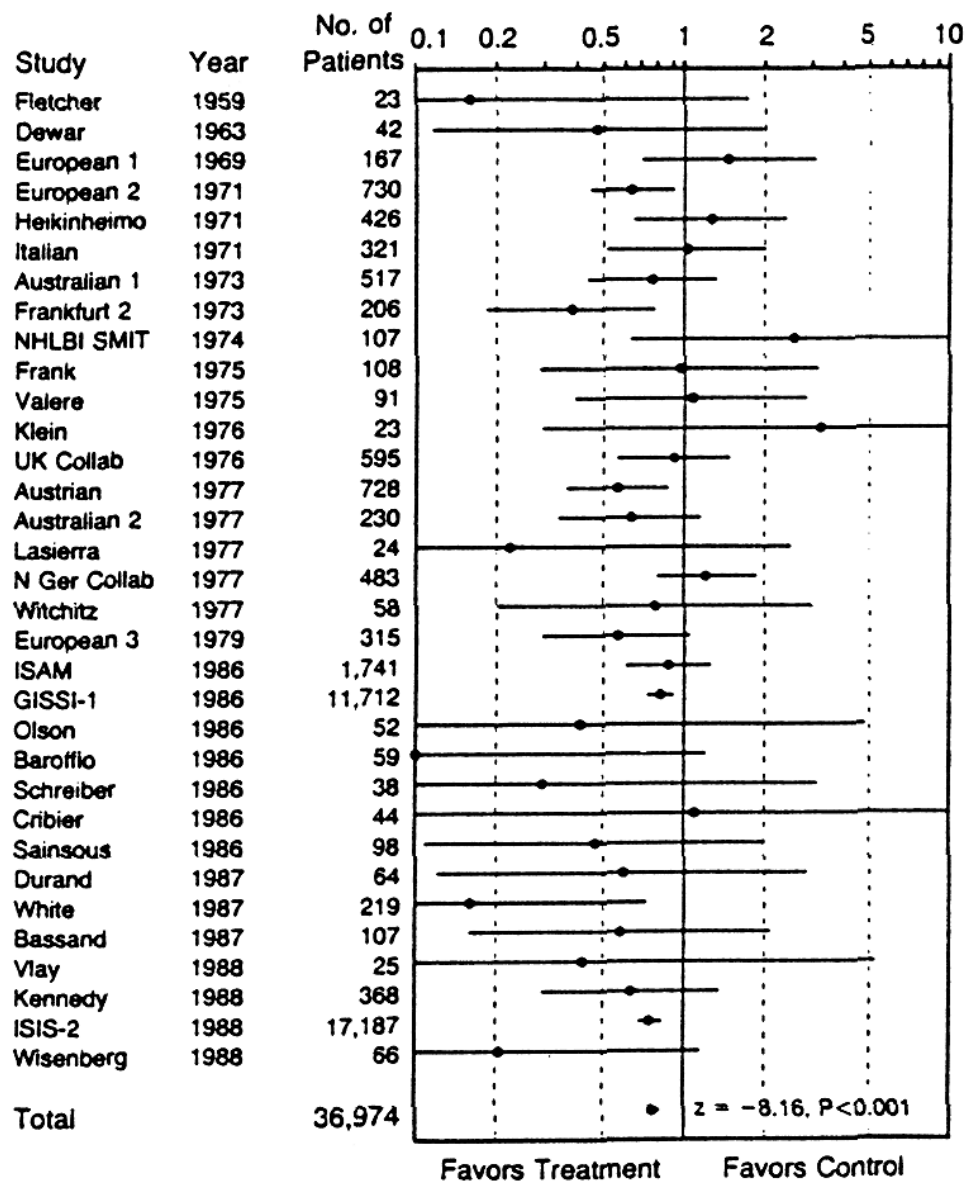
Example Thrombolysis after acute myocardial infarction

NEJM 1992

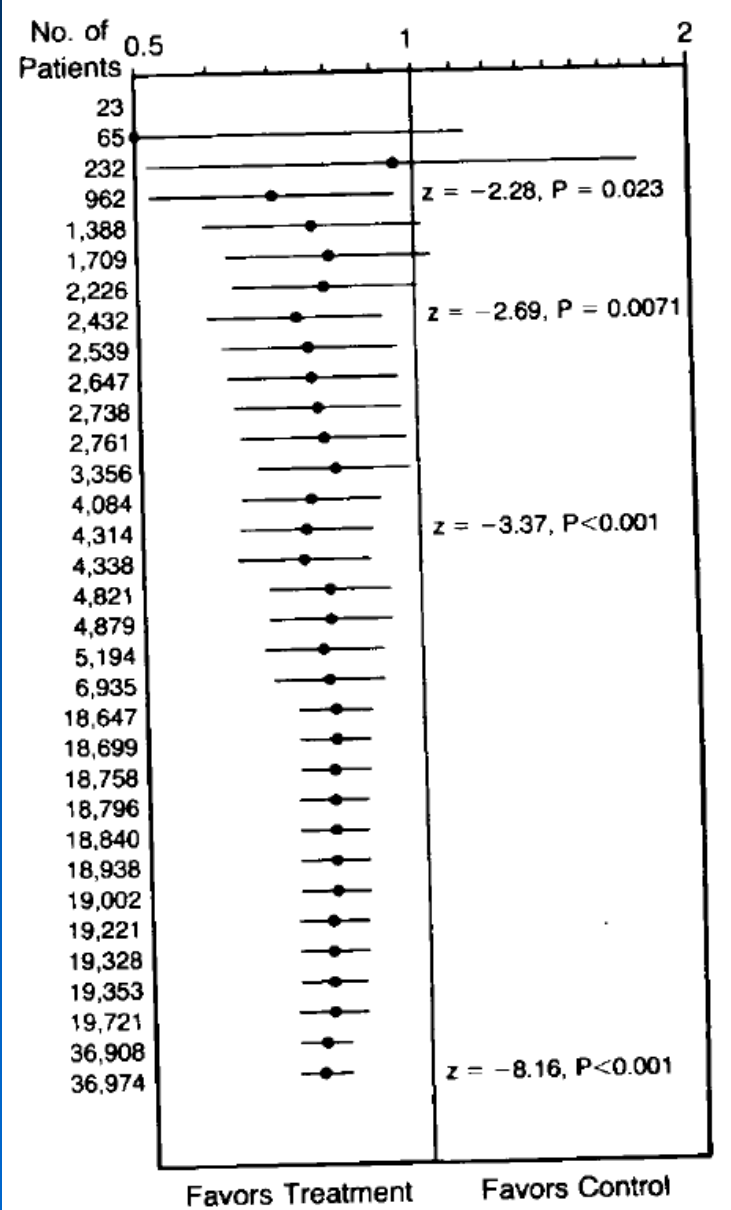
Forest Plot



Forest Plot:



Cumulative Forest Plot:

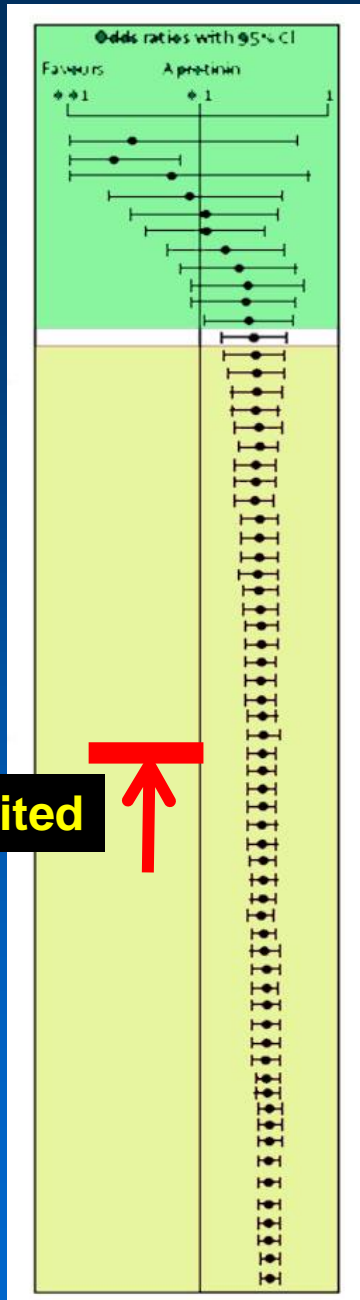


Open questions

- No accepted stopping rule
- Have all relevant trials been identified and considered?

**Need „all“ (!) relevant trials:
2016 no reliable method and procedure**

1987



RCTs of aprotinin in cardiac surgery to stop bleeding

Lancet 2005

Clinical Trials 2005

2002

Cited



INSTITUTE OF MEDICINE OF THE NATIONAL ACADEMIES

ABOUT THE IOM

REPORTS

ACTIVITIES

Browse History

Report

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Finding What Works in Health Care: Standards for Systematic Reviews

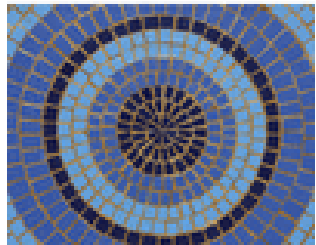
Released: March 23, 2011

Type: Consensus Report

Topics: Biomedical and Health Research, Public Health, Quality and Patient Safety

Activity: Standards for Systematic Reviews of Comparative Effectiveness Research

Board: Board on Health Care Services

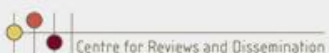




What works?

Clinical effectiveness.

In partnership with:

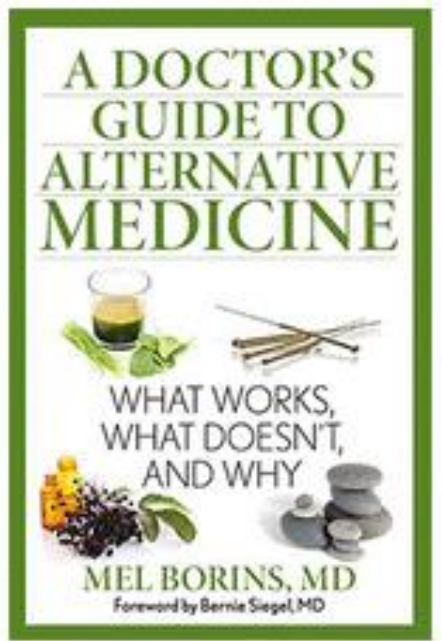
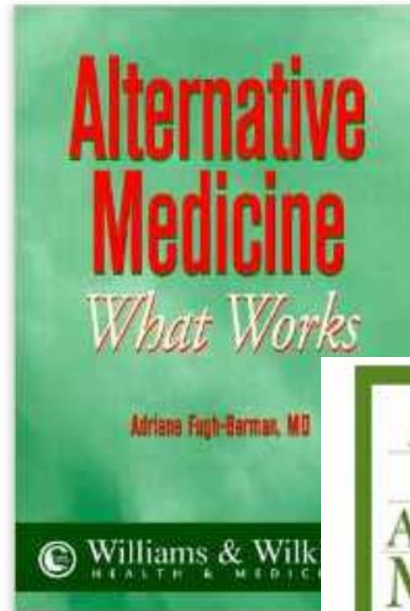


Alternative Medicine:

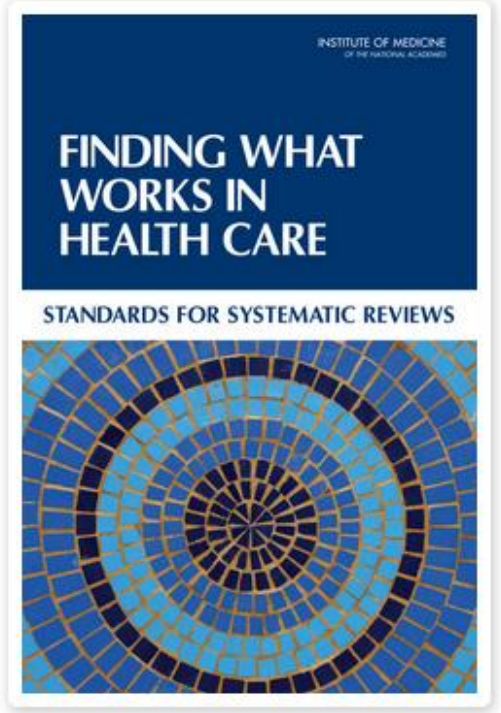
Con 1st Edition

by Adriane Fugh-Berman (Author)

★★★★★ 5 customer reviews



**Benefit?
Harm?
Costs?**



Status: Final Book
Downloads: 10,983

Research in context

All Content

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Volume 384, No. 9961, p2176–2177, 20 December 2014

[Next Article >](#)

Comment

Further emphasis on research in context

Sabine Kleinert, Laura Benham, David Collingridge, William Summe

Panel: Research in context

Evidence before this study

This section should include a description of all the evidence that the authors considered before undertaking this study. Authors should state: the sources (databases, journal or book reference lists, etc) searched; the criteria used to include or exclude studies (including the exact start and end dates of the search), which should not be limited to English language publications; the search terms used; the quality (risk of bias) of that evidence; and the pooled estimate derived from meta-analysis of the evidence, if appropriate.

Added value of this study

Authors should describe here how their findings add value to the existing evidence (including an updated meta-analysis, if appropriate).

Implications of all the available evidence

Authors should state the implications for practice or policy and future research of their study combined with existing evidence.

findings? How can we improve the accessibility and usability of research findings, and data availability? And, finally, how can we further raise awareness and continue discussions on the topic of research productivity?

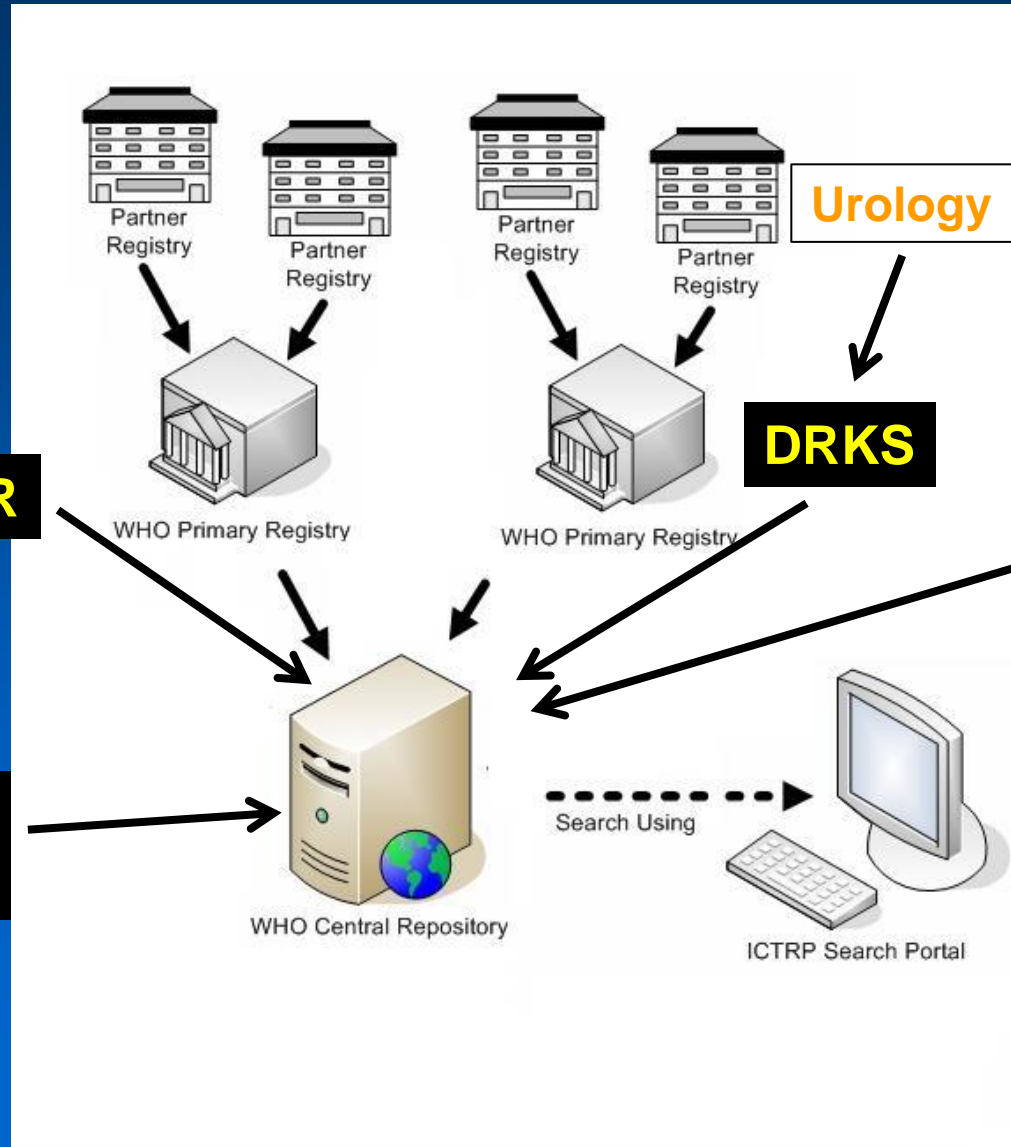
As a first step, we are strengthening our requirement to put research into context. Knowing and rigorously assessing the context and value of research will help editors make decisions about whether to publish a paper, and will help readers to interpret the importance of published research in addressing unanswered questions and building an evidence base. From Jan 1, 2015, all research papers, apart from systematic reviews and meta-analyses, submitted to any journal in *The Lancet* family must include a Research in context panel with an enhanced structure and subheadings (panel). Editors will use this information at the first assessment stage and

Leaving things out

Selective reporting =

1. Hiding whole trials (classical publication bias)
2. Hiding (or distorting) information from trials which are published
3. Spin: Interpretations which have nothing to do with the trial results

**Striving for quality:
Trial registration as basis for transparency**



ANZCTR

DRKS

**EU Clinical
Trials Register**

**Clinical
Trials.gov**

**CT not WHO
Primary Registry**

Declaration of Helsinki 2013

"Research Registration and Publication and Dissemination of Results

*35. Every research study involving human subjects must be **registered** in a publicly accessible database before recruitment of the first subject.*

*36. Researchers, authors, sponsors, editors and publishers all have ethical obligations with regard to the **publication** and dissemination of the results of research. Researchers have a duty*

.

The Cochrane Collaboration (since 1993)



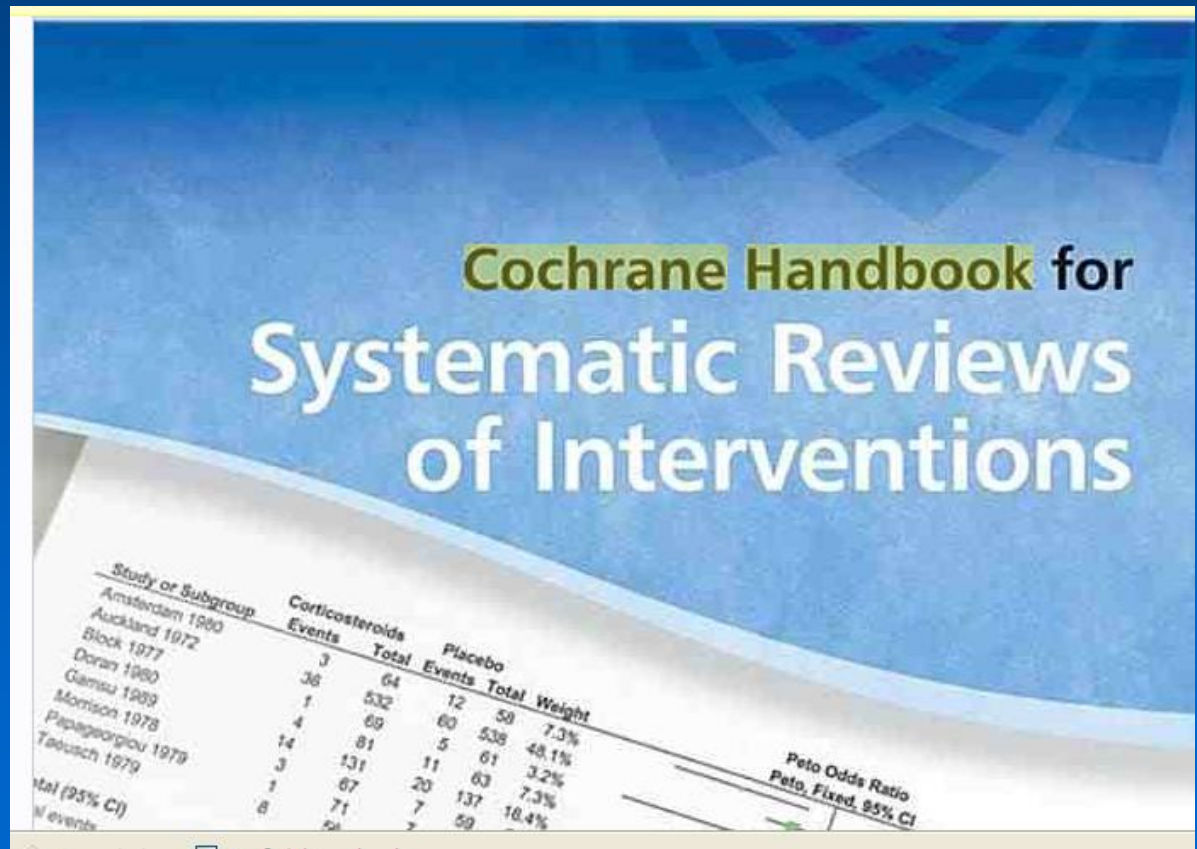
Trusted evidence. Informed decisions. Better health

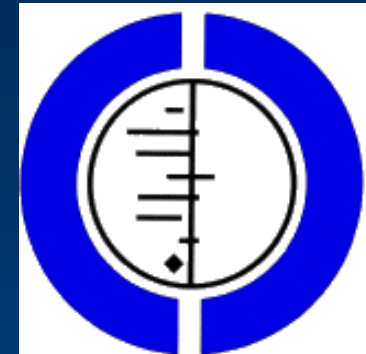
**Independent network of 36000+ contributors
from science and health professions**

Systematic Reviews

Leading principle: Minimizing bias

Risk of Bias





The Cochrane Library

- free searching and abstracts
- updating system

Cochrane is

- a charity under UK law
- member of WH assembly
- organized globally in entities

Total Records

9520

955,738

15,764

36,795

16,372

15,015

78

Cochrane Editorials

114

9668

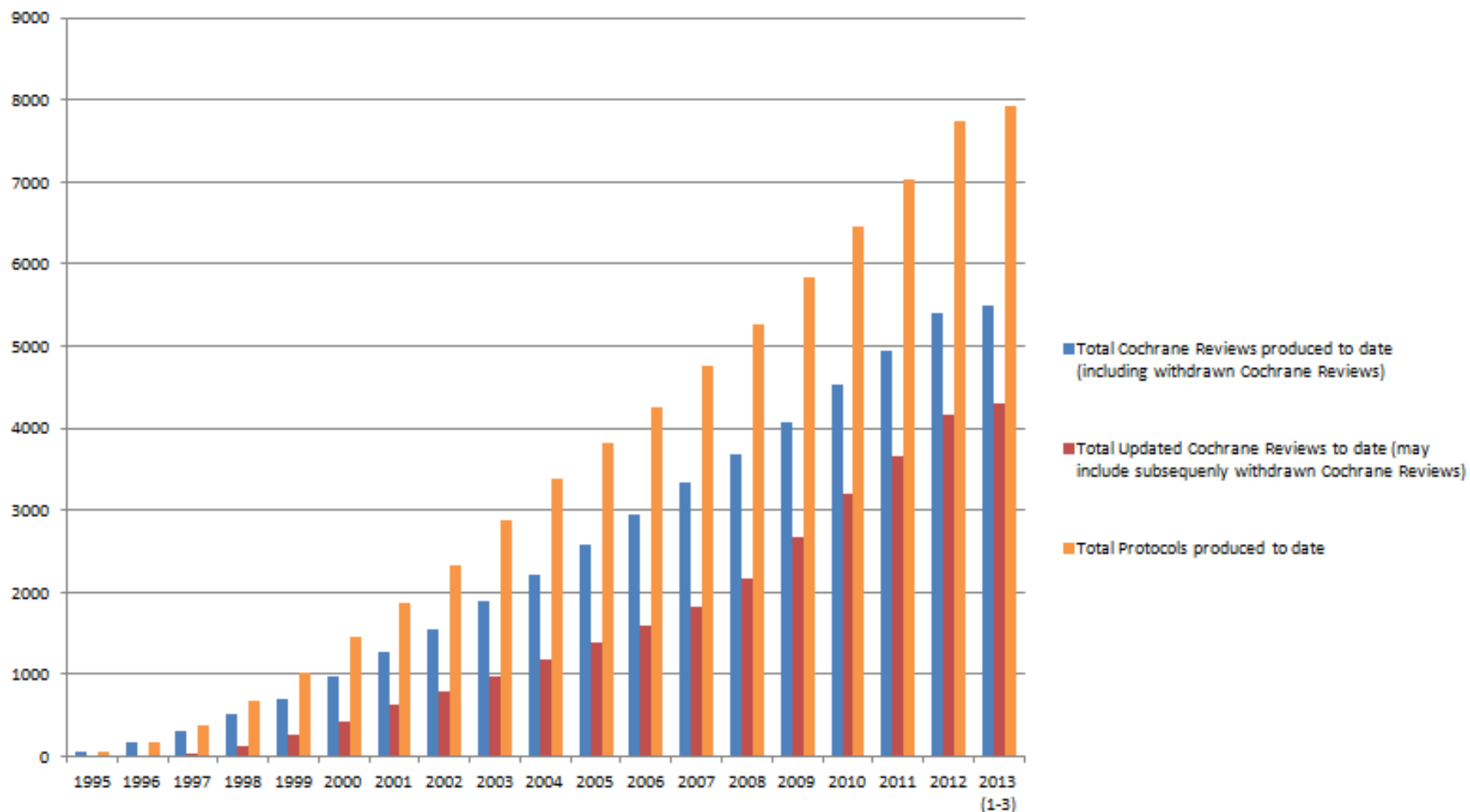
Today

992236

Cochrane Library Counts September 2016

7004 reviews
2516 protocols

Impact Factor 2015:
6.103 (vorläufig)



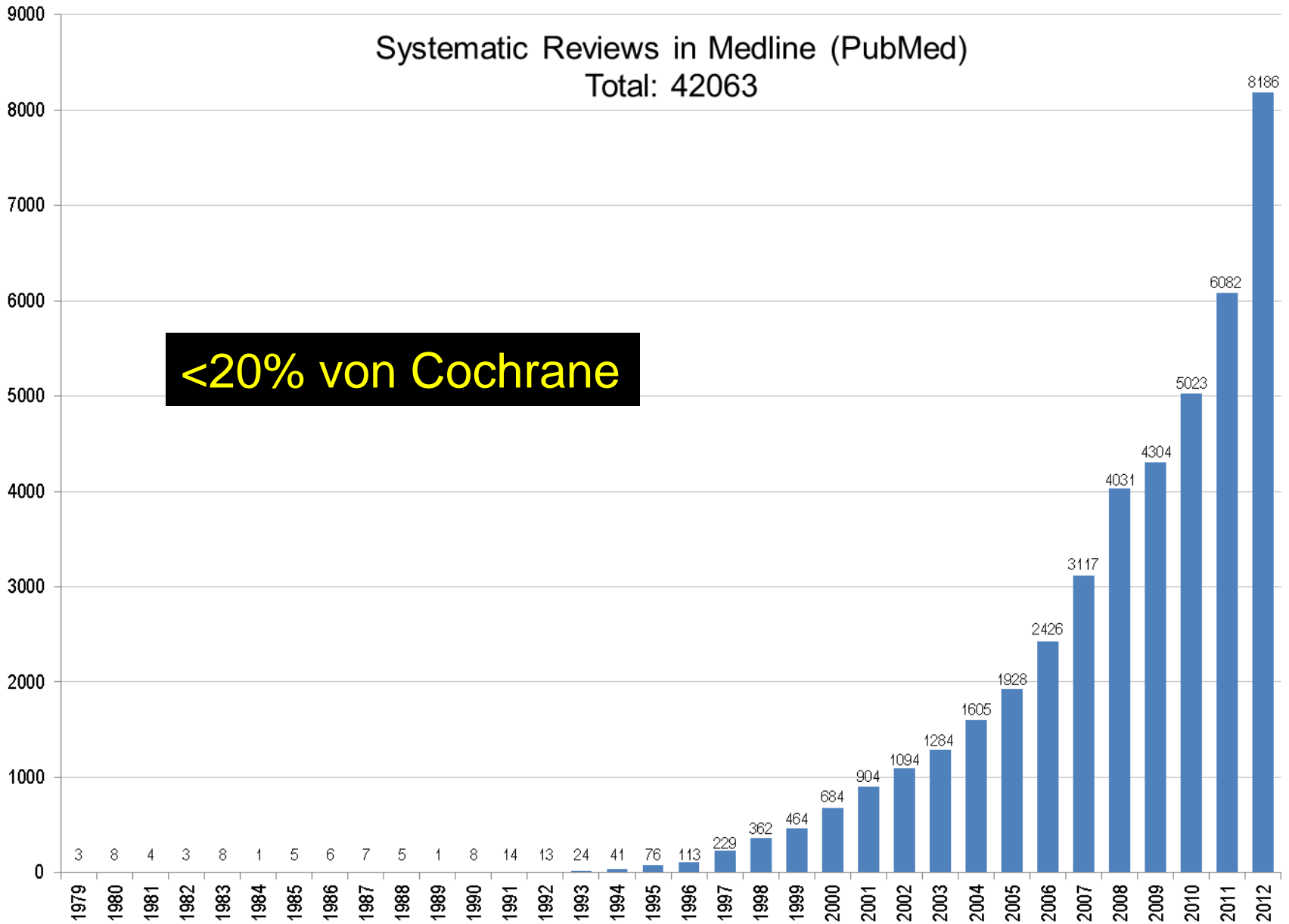
Cochrane Reviews can be withdrawn from the active database when they become out of date or are replaced by new Cochrane Reviews in a similar subject area.

Cochrane Database of Systematic Reviews:

Systematic Reviews in Medline (PubMed)

Total: 42063

<20% von Cochrane



Knowledge accumulation: backfiring?

[Archive Search](#) > [Volume 94, Issue 3, 2016](#) > The Mass Production of Redundant, Misleading, and ...

Original Investigation

THE MASS PRODUCTION OF REDUNDANT, MISLEADING, AND CONFLICTED SYSTEMATIC REVIEWS AND META-ANALYSES

Policy Points:

- Currently, there is massive production of unnecessary, misleading, and conflicted systematic reviews and meta-analyses. Instead of promoting evidence-based medicine and health care, these instruments often serve mostly as easily produced publishable units or marketing tools.
- Suboptimal systematic reviews and meta-analyses can be harmful given the major prestige and influence these types of studies have acquired.
- The publication of systematic reviews and meta-analyses should be realigned to remove biases and vested interests and to integrate them better with the primary production of evidence.

Systems of wrong incentives, agendas driven by science and scientists' careers, maldevelopment of journals . . .

**A new enemy?
Open access, data sharing . . .**

List of Predatory Publishers 2014

By Jeffrey Beall

Released January 2, 2014

The gold (author pays) open-access model has given rise to a great many new online publishers. Many of these publishers are corrupt and exist only to make money off the author processing charges that are billed to authors upon acceptance of their scientific manuscripts.

There are two lists below. The first includes questionable, scholarly open-access publishers. Each of these publishers has a portfolio that ranges from just a few to hundreds of individual journal titles.

The second list includes individual journals that do not publish under the platform of any publisher — they are essentially standalone, questionable journals.

**Old: The poor can't read
New: The poor can't write**



Publishers	
Year	Number of publishers
2011	18
2012	23
2013	225
2014	477
2015	693
2016	923

Number of predatory publishers, 2011-2016.

**A strong barrier:
language**



Zuverlässige Evidenz.
Informierte Entscheidungen.
Bessere Gesundheit.

Suchen...

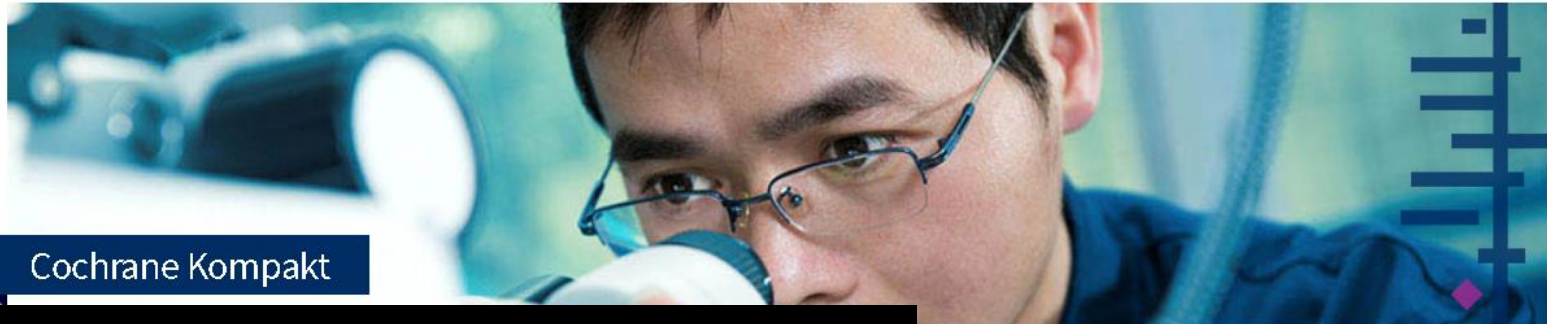
Cochrane Kompakt

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News & Events

Cochrane Library



Cochrane Kompakt

1000 lay language summaries in German

Suchen...

Den vollständigen Inhalt von Cochrane Kompakt anzeigen.



Wie kann ein Cochrane Review weiterhelfen?

Am häufigsten besuchte Themen:

Most frequently visited SRs

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Oral verabreichtes Misoprostol zur Einleitung der Wehentätigkeit 2 Die Behandlung des Thoracic Outlet Syndroms (Schultergürtelkompressionssyndrom) 3 <u>Manuelle Therapie und Übungen bei Frozen Shoulder (Adhäsive Kapsulitis, Schultersteife)</u> 4 <u>Kontinuierliche passive Bewegungsbehandlung</u> | <ul style="list-style-type: none"> 11 Impfstoffe zur Vorbeugung gegen Grippe bei Erwachsenen 12 Homöopathisches Oscilloccinum® zur Vorbeugung und Behandlung von Grippe und grippeähnlichen Erkrankungen 13 <u>Rehabilitation für Menschen mit Demenz nach der Operation eines Oberschenkelhalsbruchs</u> |
|---|--|

Schweizer erhalten kostenfreien Zugang zur Cochrane Library

Donnerstag, 7. Januar 2016

Bern – Künftig können alle Schweizer – auch medizinische Laien – kostenfrei in der Cochrane Library recherchieren und sich mittels der dort zu findenden systematischen Reviews über Gesundheitsprobleme, ihre Diagnostik und Therapie informieren.

Möglich macht dies eine sogenannte Nationallizenz für die Cochrane Library, die für jeden Computer in der Schweiz gilt. Sie wird finanziert durch die Schweizerische Akademie der Medizinischen Wissenschaften (SAMW), das Bundesamt für Gesundheit (BAG) sowie durch Beiträge von Universitätsbibliotheken und Spitälern. Das Netzwerk „Cochrane“ erstellt seit über 20 Jahren systematische Reviews, in denen die Forschungsergebnisse zu Fragen der Gesundheitsversorgung zusammengefasst werden. Diese Reviews sind international als Qualitätsstandard anerkannt und geben den aktuellen Wissensstand wieder.

Anzeige

Links

[zum Thema](#)

Forschung



- Schweizer erhalten kostenfreien Zugang zur Cochrane Library
- Internetportal: Schneller Weg für Patienten zur klinischen Studie
- Marburger Bund fordert Mindest-Vertragslaufzeiten für Forschernachwuchs

Schweiz



- Schweizer erhalten kostenfreien Zugang zur Coch-

The biggest challenge: Updating

Research Methods & Reporting

When and how to update systematic reviews: consensus and checklist

BMJ 2016 ; 354 doi: <http://dx.doi.org/10.1136/bmj.i3507> (Published 20 July 2016)

Cite this as: *BMJ* 2016;354:i3507

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This article has a correction. Please see:

[Errata - September 06, 2016](#)

Paul Garner, professor¹, Sally Hopewell, associate professor², Jackie Chandler, methods coordinator³, Harriet

Updating of systematic reviews is generally more efficient than starting all over again when new evidence emerges, but to date there has been no clear guidance on how to do this. This guidance helps authors of systematic reviews, commissioners, and editors decide when to update a systematic review, and then how to go about updating the review.

The solution?

Living Systematic Reviews: An Emerging Opportunity to Narrow the Evidence-Practice Gap

Abstract

Article

Figures

Tables

References

Other Versions

Cited By

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[Enhanced Article \(HTML\)](#)

[Summary \(67K\)](#)

[Standard \(3954K\)](#)

[Full \(4760K\)](#)

Current Version

Interventions for enhancing medication adherence

Robby Nieuwlaat, Nancy Wilczynski, Tamara Navarro, Nicholas Hobson, Rebecca Jeffery, Arun Keepanasseril, Thomas Agoritsas, Niraj Mistry, Alfonso Iorio, Susan Jack, Bhairavi Sivaramalingam, Emma Iserman, Reem A Mustafa, Dawn Jedraszewski, Chris Cotoi and R. Brian Haynes

Article first published online: 20 NOV 2014 | DOI: 10.1002/14651858.CD000011.pub4

[Abstract](#) | [Full Article \(HTML\)](#) | [Enhanced Article \(HTML\)](#) | [PDF\(4760K\)](#) | [References](#)

Other versions of this article and their online publication dates

Version 3

Interventions for enhancing medication adherence

Robby Nieuwlaat, Nancy Wilczynski, Tamara Navarro, Nicholas Hobson, Rebecca Jeffery, Arun Keepanasseril, Thomas Agoritsas, Niraj Mistry, Alfonso Iorio, Susan Jack, Bhairavi Sivaramalingam, Emma Iserman, Reem A Mustafa, Dawn Jedraszewski, Chris Cotoi and R. Brian Haynes

Article first published online: 16 APR 2008 | DOI: 10.1002/14651858.CD000011.pub3

[Abstract](#) | [Full Article \(HTML\)](#) | [Enhanced Article \(HTML\)](#) | [PDF\(4760K\)](#) | [References](#)

Version 2

Interventions for enhancing medication adherence

RB Haynes, X Yao, A Degani, S Kripalani, A Garg and HP McDonald

Article first published online: 19 OCT 2005 | DOI: 10.1002/14651858.CD000011.pub2

[Abstract](#) | [Full Article \(HTML\)](#) | [Enhanced Article \(HTML\)](#) | [PDF\(859K\)](#) | [References](#)

Version 1

Interventions for helping patients to follow prescriptions for medications

RB Haynes, H McDonald, AX Garg and P Montague

Article first published online: 22 APR 2002 | DOI: 10.1002/14651858.CD000011

[Abstract](#) | [Full Article \(HTML\)](#) | [Enhanced Article \(HTML\)](#) | [PDF\(493K\)](#) | [References](#)

Summary

- Systematic reviews as key technology knowledge accumulation to provide evidence for medical decisions
- Cochrane is an international network to support the production of systematic reviews and to develop rigorous methodology



Global Evidence Summit
Using evidence. Improving lives.

13-16 Sept 17 | Cape Town, South Africa



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Register now for your early bird ticket!

Cochrane South Africa is delighted to be hosting the 2017 Global Evidence Summit. The event aims to advance the use of reliable research evidence in addressing some of the world's most serious health and social challenges.

www.globalevidencesummit.org