Der Beitrag der Versorgungsforschung im Praxisalltag zur evidenzbasierten Medizin

Gerd Antes

Deutsches Cochrane Zentrum

Universitätsklinikum Freiburg

Versorgungsforschung in der Hausarztmedizin
Bern, 6. November 2013

Inhalt

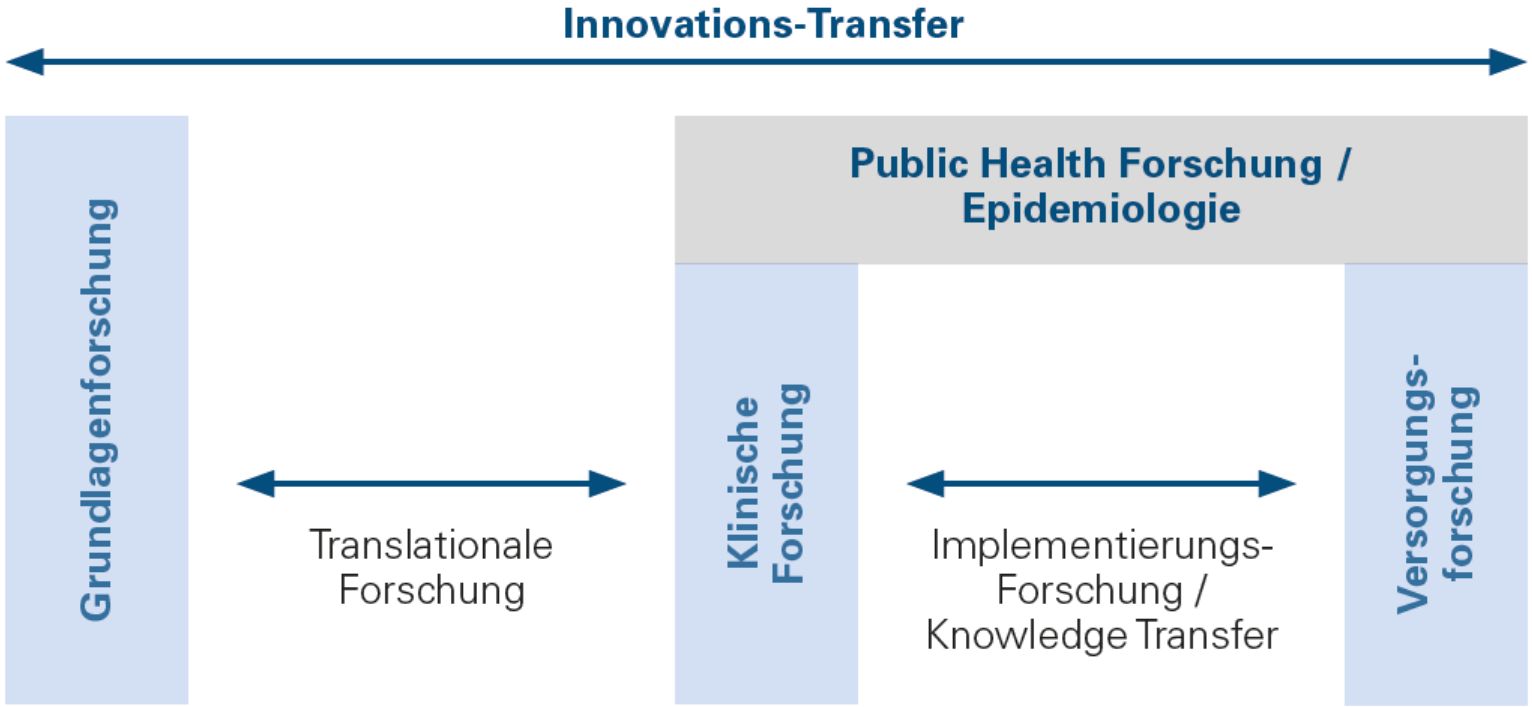
- Definition von Versorgungsforschung (VF) im Konzept «Versorgungsforschung in der Schweiz»
- Internationaler Hintergrund und Entwicklung
- Versorgungsforschung positioniert in der Forschungslandschaft: Evidenzbasierung und VF – Partner oder Konkurrenten
- Ein spezielles Beispiel

Versorgungsforschung in der Schweiz

- Förderprogramm der Bangerter - Rhyner – Stiftung 2012 - 2015
- Januar 2013: Auftrag vom Bundesamt für Gesundheit an SAMW, im Rahmen des Masterplans Hausarztmedizin / Med. Grundversorgung ein Konzept «Versorgungsforschung in der Schweiz» zu erstellen
- Konzept soll als Grundlage für ein Nationales Forschungsprogramm (NFP) ab 2017 dienen
- Gerichtet anEntscheidungsträger in Gesundheits-, Forschungs- und Bildungspolitik sowie an Fachpersonen im Bereich Gesundheit

Was ist Versorgungsforschung?

- „Forschungszweig VF in der Schweiz praktisch nicht entwickelt“
- Orientierung an Health Services Research (HSR) in den angelsächsichen Ländern
- Agency for Healthcare Research and Quality» (AHRQ): *Health services research examines how people get access to health care, how much care costs, and what happens to patients as a result of this care».* http://www.ahrq.gov
- Institute of Medicine (IOM): *inquiry to produce knowledge about the structure, processes, or effects of personal health services*



Grafik 1: 3-Säulen-Modell der Forschungslandschaft des Gesundheitswesens (in Anlehnung an M. Schrappe und H. Pfaff 2011)

Deutschprachige Definition

Pfaff (2003), Deutsches Netzwerk für Versorgungsforschung:

. . . fachübergreifendes Forschungsgebiet, das die Kranken- und Gesundheitsversorgung und ihre Rahmenbedingungen beschreibt und kausal erklärt, zur Entwicklung wissenschaftlich fundierter Versorgungskonzepte beiträgt, die Umsetzung neuer Versorgungskonzepte begleitend erforscht und die Wirksamkeit von Versorgungsstrukturen und -prozessen unter Alltagsbedingungen evaluiert

Konstante in den verschiedenen Definitionen

- Untersucht Organisationsformen, Prozesse, etc.
- Multidisziplinarität
- Patientenorientiertheit
- Untersuchung von Interventionen unter Alltagsbedingungen
- Betonung von vielfachen Überschneidungen und Überlappungen

Weitere Konstante

1. Ausgangspunkt Untersuchungsziel / Fragestellung

2. Geeignete Methode

Methodendiskussion rückt jedoch immer wieder in den Vordergrund

Wesentliche Designs in der Diskussion:

- Experimentelle / Beobachtungsstudien
- Register

HSR HEALTH SERVICES RESEARCH
Impacting Health Practice and Policy Through State-of-the-Art Research and Thinking

Health Serv Res. 2002 February; 37(1): 15–17. PMCID: PMC1430351
doi: 10.1111/1475-6773.01020

Health Services Research: An Evolving Definition of the Field

Kathleen N Lohr and Donald M Steinwachs

Author information ► Copyright and License information ►

In early 2000, the Board of Directors of the Association for Health Services Research (AHSR) appointed an ad hoc committee to propose a current definition for the field. The committee was co-chaired by Kathleen Lohr and Donald Steinwachs, and we extend our appreciation to fellow committee members: Ronald Andersen, Ph.D., University of California at Los Angeles; Mark Chassin, M.D., M.P.P., M.P.H., Mount Sinai Medical Center, New York City; Karen Davis, Ph.D., The Commonwealth Fund, New York City; Jack Hadley, Ph.D., Center for Studying Health System Change, Washington, DC; David Kindig, M.D., Ph.D., University of Wisconsin, Madison; Edward Perrin, Ph.D., University of Washington, Seattle; and Wendy Valentine, AHSR, Washington, DC. We also thank David Helms, Ph.D., then the AHSR President and CEO, for his support of this work. The committee's final report was received by the board, and the definition was adopted on June 24, 2000. This was the last meeting of the AHSR Board following the merger of AHSR with the Alpha Center that created the Academy for Health Services Research and Health Policy.

Definitionen der Versorgungsforschung

- 1966 Begriff „Health Services Research“ eingeführt
- 1972, 1979, 1995 Aktualisierung und Erweiterung der Definition durch das verantwortliche Komitee und das Institute of Medicine (IOM)
- 1995 Betonung der Interdisziplinarität
- Die Autoren 2001:
  „The new definition will likely meet our needs for a few years.“

Dem gegenüber: Der Wunsch nach dauerhafter Definition und expliziter Abgrenzung

Arbeitskreis Versorgungsforschung beim Wissenschaftlichen Beirat der Bundesärztekammer (2004). Definition und Abgrenzung der Versorgungsforschung (Stand 31.8.04), Berlin

Auswirkungen auf die Methodik?

Reinhard Busse

6.1 Methoden der Versorgungsforschung

Versorgungsforschung ist durch seinen Gegenstand, die medizinische Versorgung, und nicht durch einen bestimmten Methodensatz (wie etwa die Statistik) definiert. Abbildung 1 zeigt ein Modell des medizinischen Versorgung, das sich wesentlich an Strukturen, Prozessen und Ergebnissen orientiert. Es dient damit der Beschreibung und Analyse, wie die „Produktion" von Gesundheit innerhalb des Systems erfolgt, d. h. wie in system- und patientenseitigen Strukturen (Inputs) gesundheitliche Ergebnisse (Outputs) erzielt werden.

die sächliche und pers
Gesundheitssystems
Strukturen, Zuständi
tige Abhängigkeiten

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schichtig, oft kaum du
sichtlich ihrer Auswirku
bezogene Effektivität un
zu wenig untersucht. S
sind jedoch Voraussetzu
und Wirkungen von Ve

2006

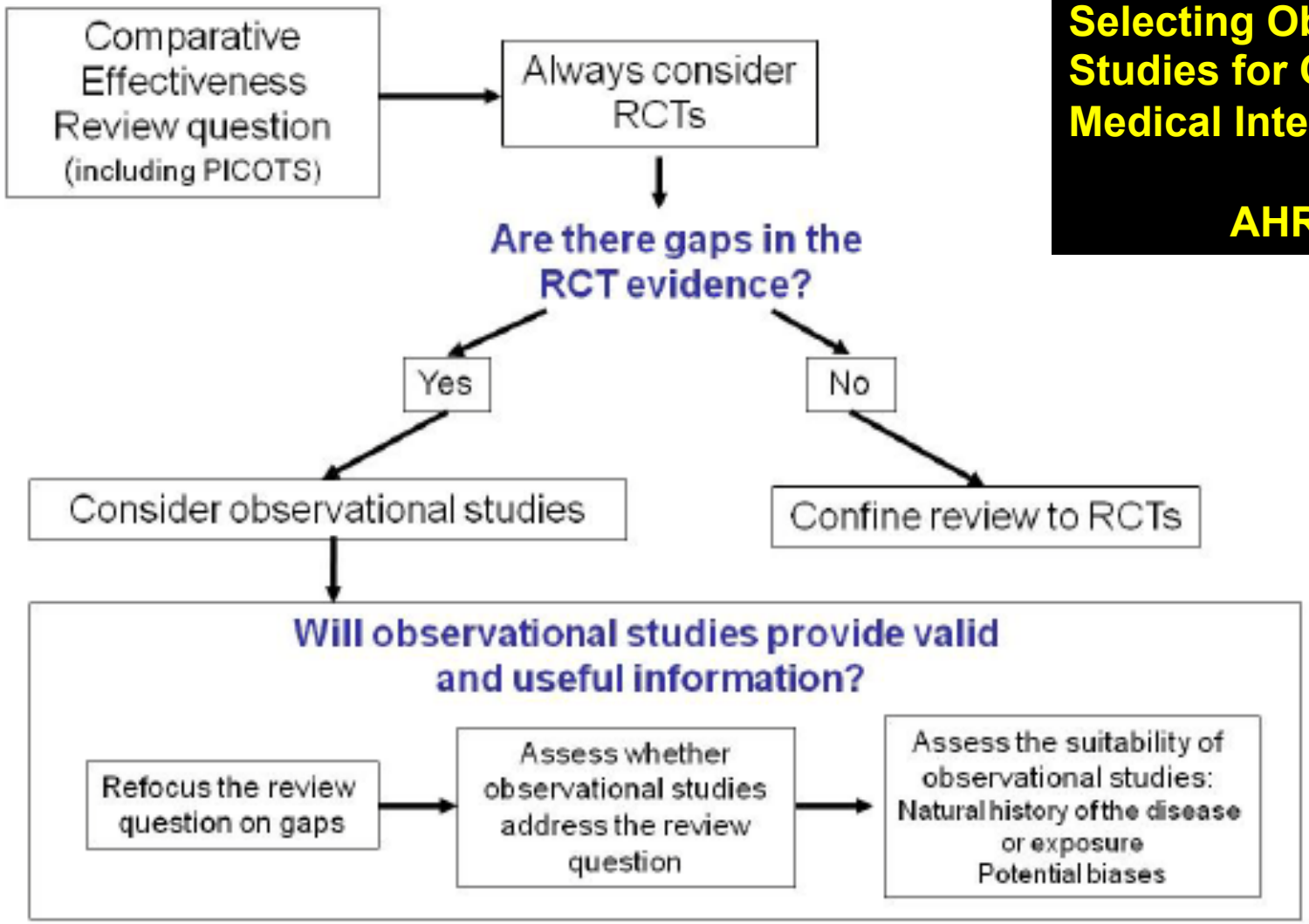
Dagegen wurde in den letzten Jahren innerhalb der klinischen Medizin der Eindruck erweckt und durch die Entwicklung zu einer evidenz-basierten Medizin verstärkt, dass die wahre experimentelle Methode, also randomisierte kontrollierte Studien (RCTs), geeignet ist, die meisten Fragen zu beantworten. So gab Sackett den Rat: „... discard at once all articles on therapy that are not about randomized trials"; Cowan war sogar der Meinung, dass „... participation of any group of patients in a nonrandomized trial is wholly unjustified and unethical since nothing can be learned from it" und Sheldon forderte 1994 „Please bypass the PORT" (PORT = Patient Outcomes Research Teams) [Busse 1998].

Dabei wird übersehen, dass RCTs auch in ihrem klassischen Anwendungsgebiet, der pharmakotherapeutischen Forschung, hauptsächlich nur in Phase 3 zur Anwendung kommen. Vorher liegen deskriptive und analytische Grundlagenforschung sowie Tierversuche und Versuche an zunächst gesunden, später kranken Probanden, die in Abhängigkeit von der Fragestellung auch ohne Randomisierung oder Kontrollgruppe auskommen. Nach den RCTs in Phase 3 be-

Selecting Observational Studies for Comparing Medical Interventions

AHRQ June 2010

Figure 1. Flow diagram for consideration of observational studies for comparative effectiveness questions concerning benefit



Key: PICOTS=population, intervention, comparator, outcomes, timing, study design; RCTs=randomized, controlled trial.

Sackett Symposium Home

The 2nd David Sackett Symposium

"Is it time to retire the Randomized Trial?"

This symposium will explore whether or not the evolution of observational research methods for making fair-comparisons on the one hand and the mushrooming ethical, logistical, and financial barriers to performing RCT's on the other, have finally tipped the balance. Drawing speakers and panelists from international, continental and local centres of excellence, we will present the issues, arguments, and counter-arguments in open plenary sessions, and provide plenty of times and places for their informal exploration and debate.

Sessions on randomized clinical trials, observational studies and where the twain shall meet:

Event Information

Dates:

- September 27, 2013 7:45am - 5:30pm
- September 28, 2013 7:45am - 5:30pm

Target Audience

Physicians, Specialists, Researchers, Students, Residents, Clinical Trialists, Observationalists, Health Research Methodologists, Health Policy Decision Makers, Diagnosticians, Clinical-practice Guidelines Formulators.

At the End of this Symposium the Participants will:

- Understand the strengths, limitations and appropriate use of randomized trials & observational studies
- Move forward the field of research in the context of comparative effectiveness research

EDITORIAL

Previous Volume 342:1907-1909 June 22, 2000 Number 25

Randomized Trials or Observational Tribulations?

The role of observational studies in the evaluation of treatments is a long-standing and contentious topic.[1] In this issue of the *Journal,* Concato et al.[2] and Benson and Hartz[3] report that observational studies give results similar to those of randomized, controlled trials. If these claims lead to more observational studies of therapeutic interventions and fewer randomized, controlled trials, we see considerable dangers to clinical research and even to the well-being of patients.

Any systematic review of evidence on a therapeutic topic needs to take into account the quality of the evidence. Any study, whether randomized

Teil 2

Design und methodische Standards gesundheitsökonomischer Evaluationen

Gesundheitsökonomische Evaluationen bauen typischerweise auf Ergebnissen bzw. randomisierten klinischen oder pragmatischen Studien („pragmatic trials“) auf. Jedoch ist die externe Validität der randomisierten kontrollierten klinischen Studien oft fraglich, relevante Alltagsbedingungen werden nicht berücksichtigt, und Interventionen sind nicht alltagsnah. Daher werden zunehmend methodische Ansätze entwickelt, die gesundheitsökonomische Evaluationen auf Basis von Beobachtungsstudien ermöglichen.

Viele Studien überblicken zu kurze Zeiträume, um relevante Effekte und Kosten der Vergleichsalternativen erfassen zu können. Bei chronischen Erkrankungen ist häufig ein lebenslanger Zeithorizont erforderlich. Um die Studienergebnisse über längere Zeithorizonte zu extrapolieren, können gesundheitsökonomische Evaluationen in Form einer *Modellierung* durchgeführt werden.

Jürgen Windeler, 2010

To the Editor:

I greatly appreciate the work of the pragmatic–explanatory continuum indicator summary (PRECIS) group in framing, structuring, and illustrating the pragmatic–explanatory continuum [1]. In complete support and hopefully correct interpretation, I would like to sharpen the arguments by three short comments:

1. It is implicit from the presentation but should be made explicit: there is no such thing as "a pragmatic trial" or "an explanatory trial." Schwartz and Lellouch's notion of "attitudes" was well chosen, and from the continuum and the illustrative wheel, it is clear that every trial will be positioned somewhere between the extremes and has its pragmatic and explanatory elements.
2. From the context, it is quite obvious what the authors have in mind while stating "explanatory trials test causal research hypotheses." However, it should be made very clear that answers "that help users choose between options of care" of course are answers to questions of causal relationships—in a way that A changes the risk of B (by an amount of X). It is the "noise of practice" that differs pragmatic from explanatory trials, not the general aim of identifying and quantifying causal effects.
3. The point mentioned above is of major importance because design follows question and purpose. For causal questions, the randomized trial is the standard and this is not questioned by the term "pragmatic." At least in Germany we are confronted with suggestions that "pragmatic" means the use of other research designs, nonrandomized observational research, or registers. By not mentioning such design aspects as one of the 10 items, the PRECIS-authors seem to share my position that such interpretations are misleading. A clear statement that such suggestions have nothing to do with "pragmatism" in the Schwartz/Lellouch sense would be useful.

Finally, the progress of work should address the use of placebo groups in a "pragmatic trial." There is still much nonsense in "usual" or "standard" care, which can only be identified by placebo-controlled trials. A finding from a "pragmatic trial" that a new treatment is as good as usual care is logically correct but hardly of value for decision makers as long as they cannot be sure that usual care actually is effective. At least in such situations, placebos may have their place also on the pragmatic side of the continuum.

Reference

[1]. Thorpe KE, Zwarenstein M, Oxman AD, Treweek S, Furberg CD, Altman DG, et al. A pragmaticeexplanatory continuum indicator summary (PRECIS): a tool to help trial designers. J Clin Epidemiol. 2009;62:464–75.

http://www.ebm-netzwerk.de/was-ist-ebm/schwerpunkte/pragmatische-studien

Externe Validität

Jürgen Windeler*

Medizinischer Dienst der Spitzenverbände der Krankenkassen e.V., Essen

Zusammenfassung

Neben der üblichen Qualitätsbewertung von klinischen Studien, die Aspekte der internen Validität betrifft, ist ein anderes Qualitätsmerkmal von Studien, inwieweit ihre Ergebnisse in die Praxis übertragbar sind. Für diesen Aspekt der „externen Validität" gibt es keine ähnlich ausgearbeiteten Prüfinstrumente und Checklisten. Wesentliches Kriterium dieser Qualitätsbewertung ist, ob sich durch die Änderung der Anwendungssituation, die sich entsprechend dem PICO-Schema in verschiedene Aspekte unterteilen lässt, die Effekte einer Therapie ändern. Externe Validität ist also kein Studien-, sondern ein Situationskriterium. Bei der Bewertung geht es nicht darum festzustellen, dass Patienten außerhalb von Studien anders sind als Patienten innerhalb von Studien. Dies ist sicher. Es geht vielmehr darum, ob die Effekte im Sinne eines Unterschieds zwischen zwei Behandlungsgruppen unterschiedlich sind, was man als Effektmodifikation bezeichnet. Generell wird die Beurteilung dadurch erschwert, dass über Effektmodifikationen und deren Einflussfaktoren wenig bekannt ist. Die Bewertung der externen Validität ist daher eher eine Frage fachlichen Ermessens, gestützt auch auf pharmakologische und biologische Informationen.

Schlüsselwörter: Klinische Studien, externe Validität, Übertragbarkeit, Effektmodifikation

Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen, 2008

Interne und externe Validität sind nicht symmetrisch
Externe Validität ist kontextabhängig

Memorandum III: Methoden für die Versorgungsforschung (Teil 2)*

Memorandum III: Methods for Health Services Research (Part 2)

Autoren E. A. M. Neugebauer[1], A. Icks[2,3], M. Schrappe[4]

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[4] Institut für Patientensicherheit der Universität Bonn

Schlüsselwörter
- Gesundheitsökonomie
- Methoden
- Register

Zusammenfassung

Die methodische Qualität von Versorgungsfor-

Abstract

The methodical quality of health serv

Methodik international

Estimating the Effects of Interventions That Are Deployed in Many Places

Place-Randomized Trials

ROBERT BORUCH
HENRY MAY
HERBERT TURNER
JULIA LAVENBERG
University of Pennsylvania
ANTHONY PETROSINO
Campbell Collaboration
DOROTHY DE MOYA
University of Pennsylvania
JEREMY GRIMSHAW
Campbell Collaboration
ELLEN FOLEY
Brown Universtiy

Place-randomized trials have been mounted in a variety of countries to estimate the relative effects of interventions that are intended to ameliorate problems or improve conditions in organizations and geopolitical jurisdictions. This article presents studies in which villages, police hot spots, housing developments, hospital units, schools, and other entities are the units of random allocation. The challenges to such work, approaches to meeting them, and the value added of such trials are outlined. The scientific value added includes better evi-

American Behavioral Scientist, January 2004

QUALITY IMPROVEMENT RESEARCH

Research designs for studies evaluating the effectiveness of change and improvement strategies

M Eccles, J Grimshaw, M Campbell, C Ramsay

Qual Saf Health Care 2003;12:47–52

The methods of evaluating change and improvement strategies are not well described. The design and conduct of a range of experimental and non-experimental quantitative designs are considered. Such study designs should usually be used in a context where they build on appropriate theoretical, qualitative and modelling work, particularly in the development of appropriate interventions. A range of experimental designs are discussed including single and multiple arm randomised controlled trials and the use of more complex factorial and block designs. The impact of randomisation at both group and individual levels and three non-experimental designs (uncontrolled before and after, controlled before and after, and time series analysis) are also considered. The design chosen will reflect both the needs (and resources) in any particular circumstances and also the purpose of the evaluation. The general principle underlying the choice of evaluative design is, however, simple—those conducting such evaluations should use the most robust design possible to minimise bias and maximise generalisability.

particular for routine clinical practice; also referred to as external validity).[2 3]

A FRAMEWORK FOR EVALUATING QUALITY IMPROVEMENT INTERVENTIONS

Campbell and colleagues[4] have suggested that the evaluation of complex interventions should follow a sequential approach involving:

- development of the theoretical basis for an intervention;
- definition of components of the intervention (using modelling, simulation techniques or qualitative methods);
- exploratory studies to develop further the intervention and plan a definitive evaluative study (using a variety of methods);
- definitive evaluative study (using quantitative evaluative methods, predominantly randomised designs).

This framework demonstrates the interrelation between quantitative evaluative methods and other methods; it also makes explicit that the design and conduct of quantitative evaluative studies should build upon the findings of other quality improvement research. However, it represents an idealised framework and, in some circumstances, it is necessary to undertake evaluations without sequentially working through the

Cluster Randomized Trials of Professional and Organizational Behavior Change Interventions in Health Care Settings

By
JEREMY GRIMSHAW,
MARTIN ECCLES,
MARION CAMPBELL,
and
DIANA ELBOURNE

monly used. This article discusses the practical and ethical issues in the design, conduct, and analysis of cluster randomized trials of professional behavior and organizational change strategies using examples from two primary studies evaluating health care provider behavior change strategies. Cluster randomized trials are commonly used in health care. They raise distinct ethical and methodological issues that have rarely been adequately addressed in studies to date.

Keywords: cluster randomized trials; implementation research; interventions; dissemination and implementation interventions; COmputerised Guidelines Evaluation in the NorTh of England (COGENT)

Background

Biomedical and health services research are constantly generating new evidence that has the potential to improve patient outcomes and health services delivery. For example, around 10,000 new randomized trials are included in Medline each year (Chassin 1998), and more

NOTE: The COGENT study was funded by the UK NHS R&D Programme on Methods to promote the uptake of research findings with additional funding from EMIS Computing and the Department of Health for England and Wales. The NEXUS study was funded by the NHS R&D Primary Secondary Interface Programme. The Health Services Research Unit, University of Aberdeen, is funded by the Chief Scientist Office of the Scottish Executive Health Department. The Centre for Health Services Research, University of Newcastle upon Tyne and the Health Services Research Unit, University of Aberdeen, are part of the UK MRC Health Services Research Collaboration. The views expressed are those of the authors and not necessarily those of the funding bodies.

DOI: 10.1177/0002716205274576

Methodikbücher

- Cook TD, Campbell DT (1979). *Quasi-experimentation: design and analysis issues for field settings*. Chicago: Rand McNally.
- Shadish WR, Cook TD, Campbell DT. Experimental and Quasi-Experimental Designs for Generalized Causal Inference. Boston, MA: Houghton Mifflin Company; 2002
- Campbell DT, Stanley JC (1966). *Experimental and quasi-experimental designs for research.* Chicago, Rand McNally

Evidenz, Systematische Reviews und Cochrane Collaboration

Entscheidende Orientierung

1. Minimierung von systematischen Verzerrungen (Bias)

2. Kontrolle/Ausschaltung von Zufall (Play of Chance)

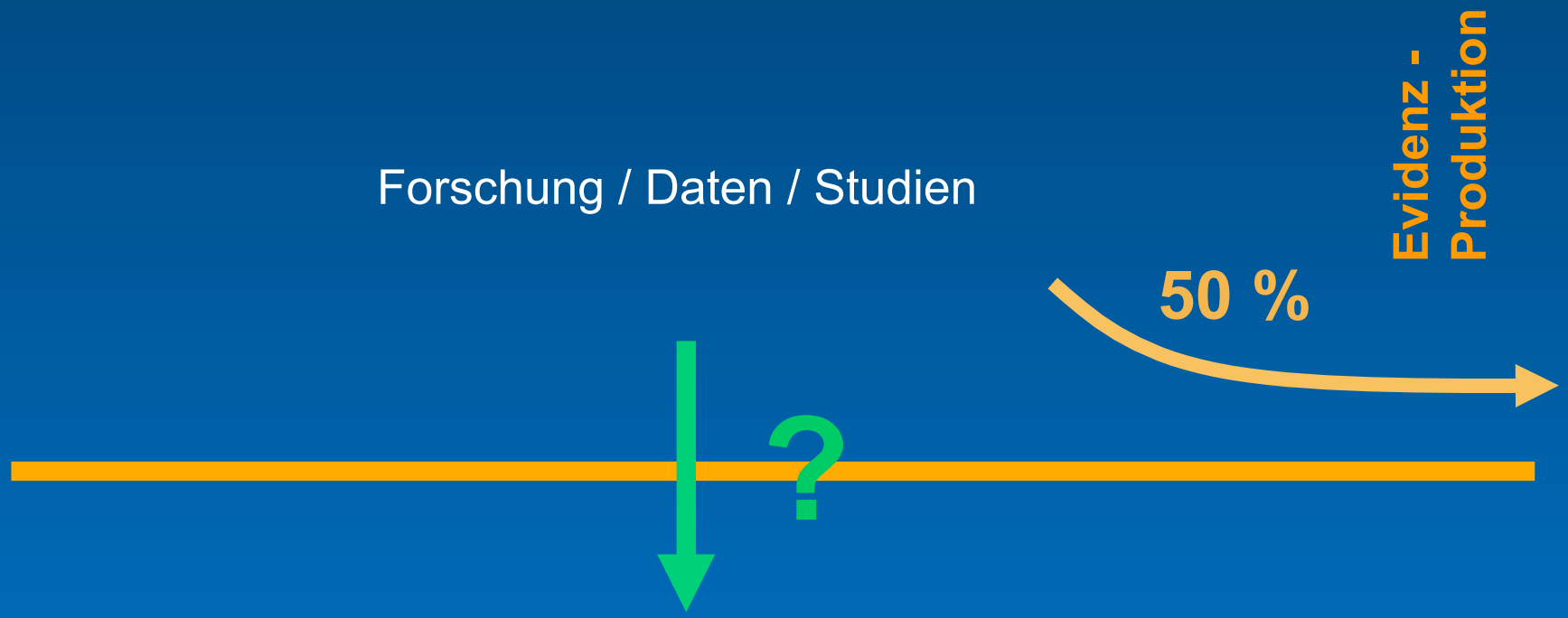
Evidenz-basierte Medizin (EbM)

EBM ist der gewissenhafte, ausdrückliche und vernünftige Gebrauch der **gegenwärtig bestverfügbaren externen, wissenschaftlichen Evidenz** für Entscheidungen in der medizinischen Versorgung **individueller** Patienten.

Sackett et al. '96

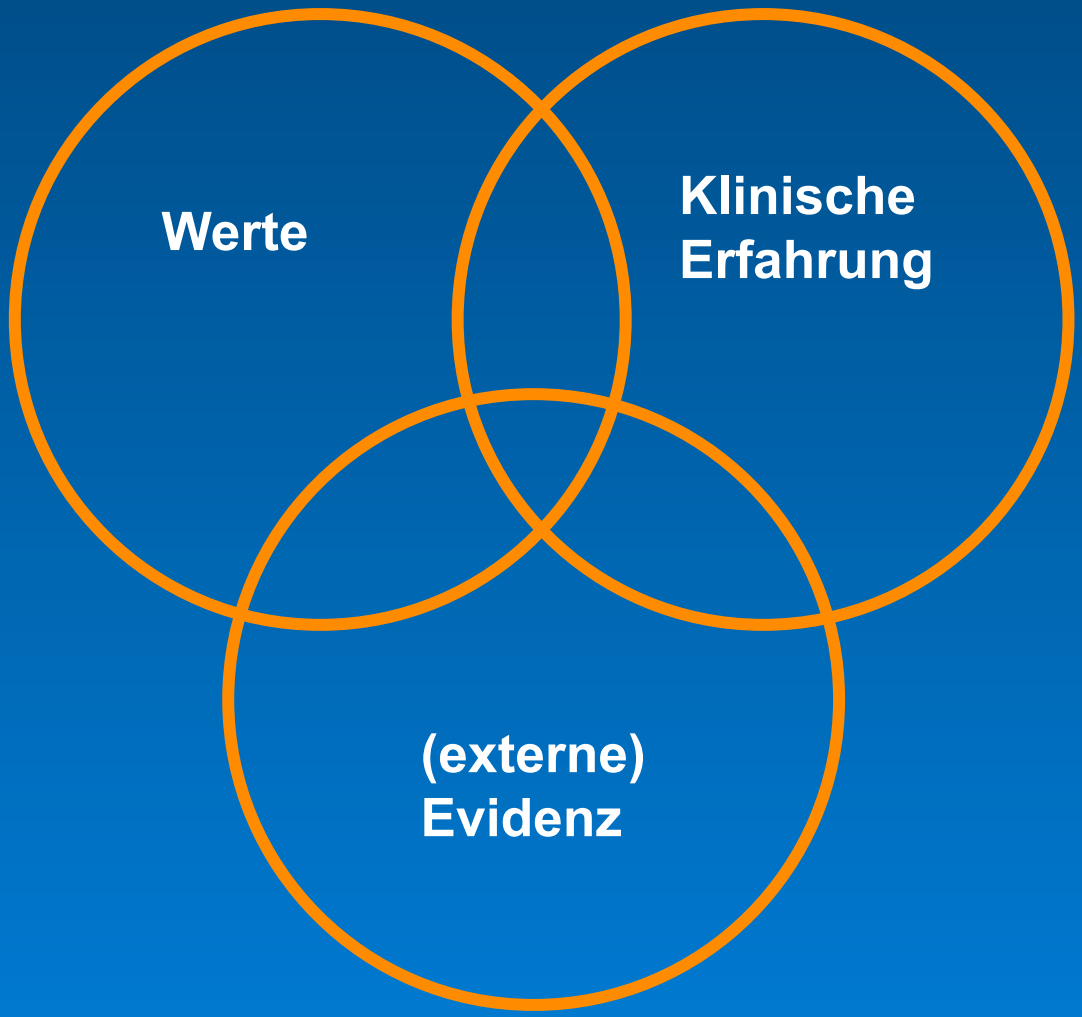
Geburtsort: McMaster Universität, Hamilton, Kanada, ca. 1970
Begriffsbildung: 1991 JAMA, vorher Clinical Epidemiology etc.

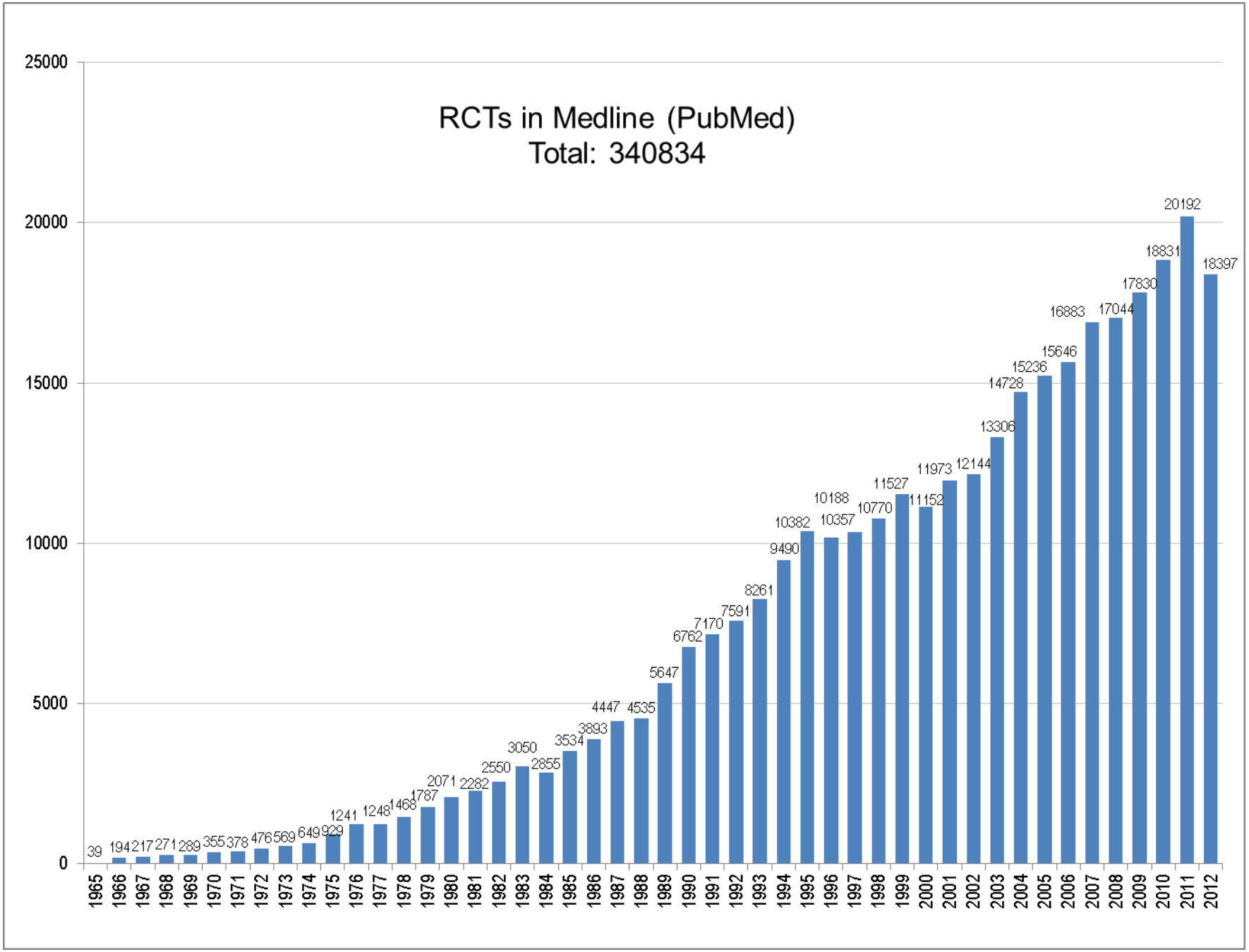
Transfer von Forschung in die Praxis



- Behandelnde Ärzte
- Gesundheitsbehörden, Krankenkassen, Institutionen
- Klinische Forschung
- Patienten

EbM (= Kochbuchmedizin?)

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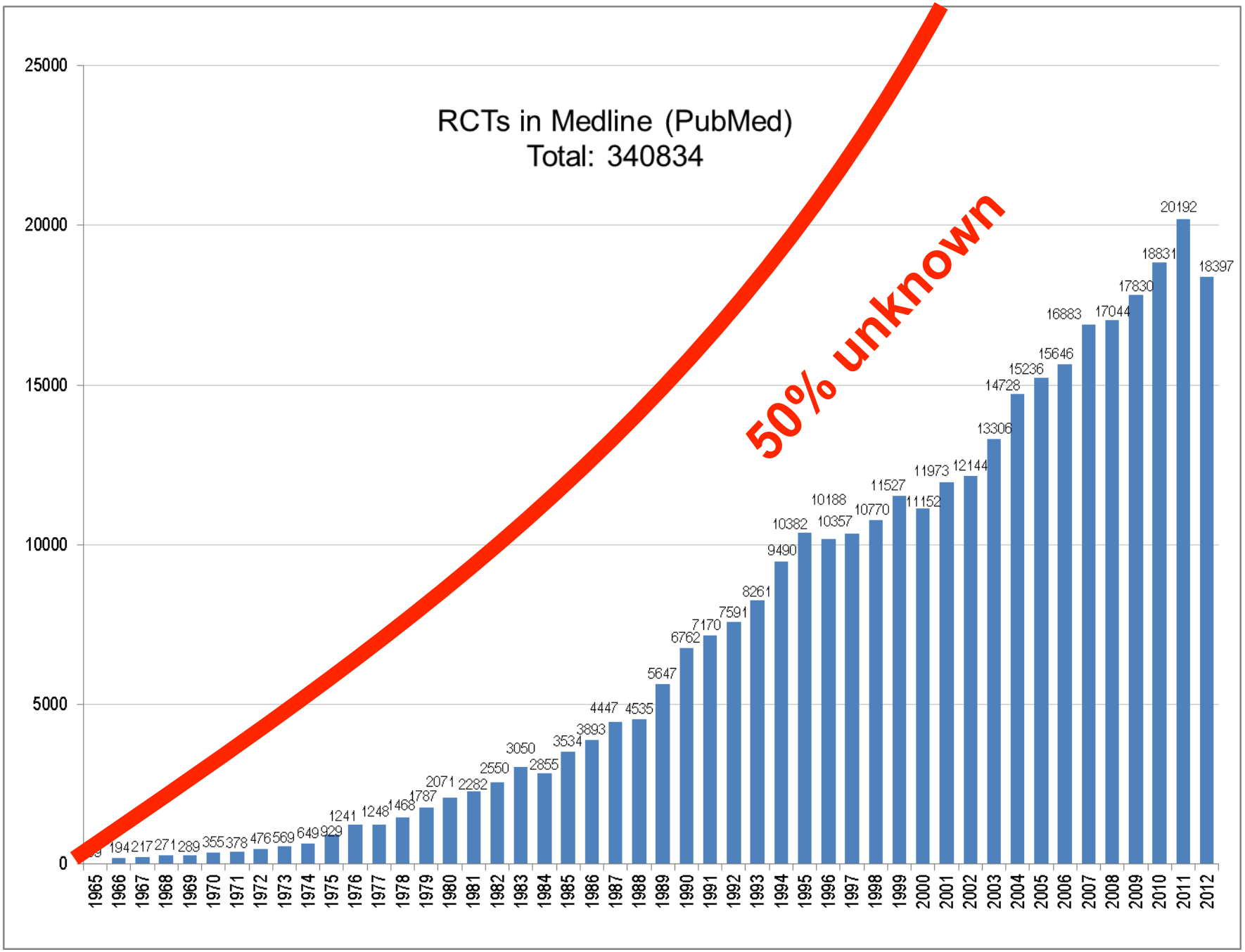
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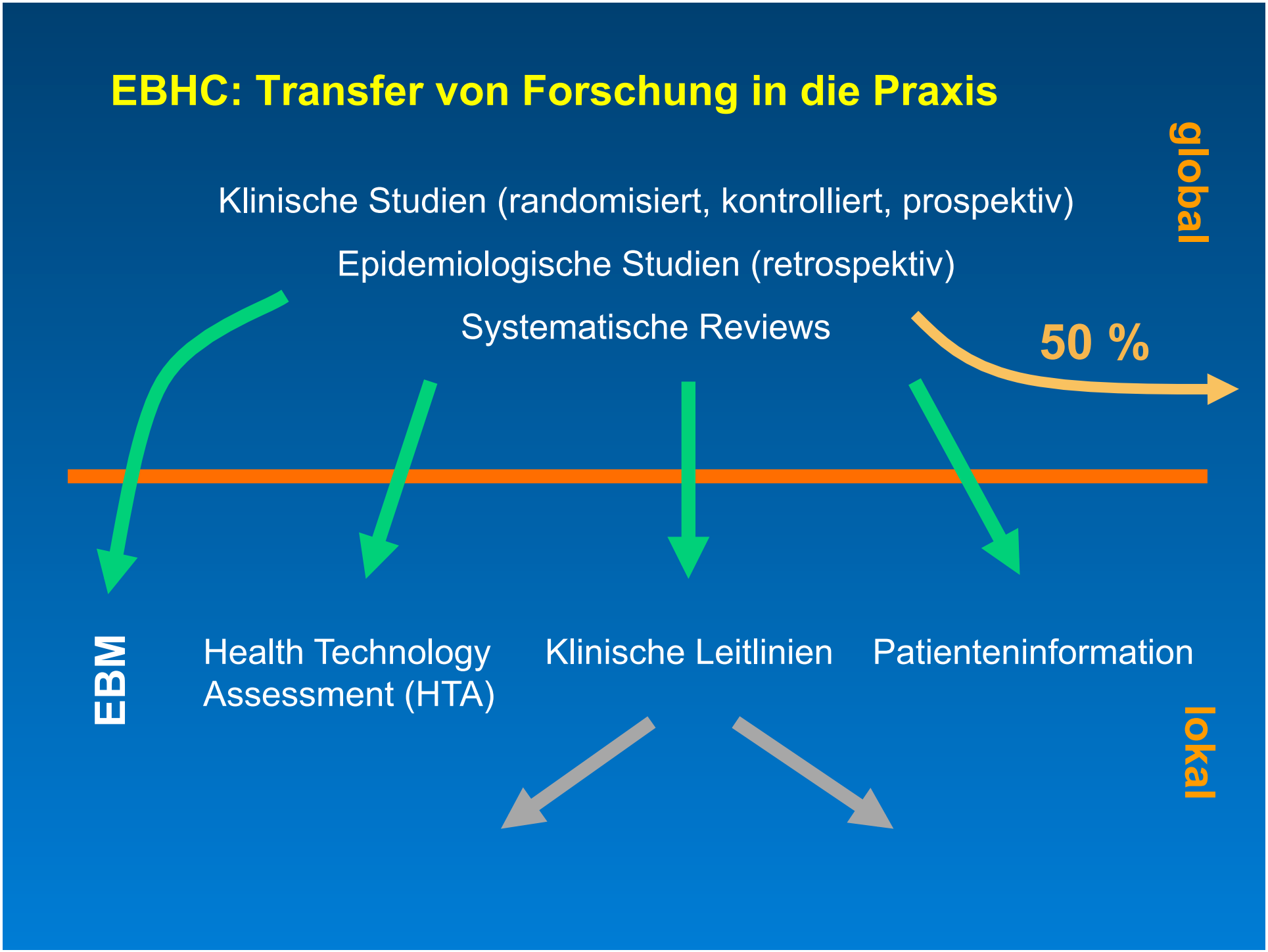
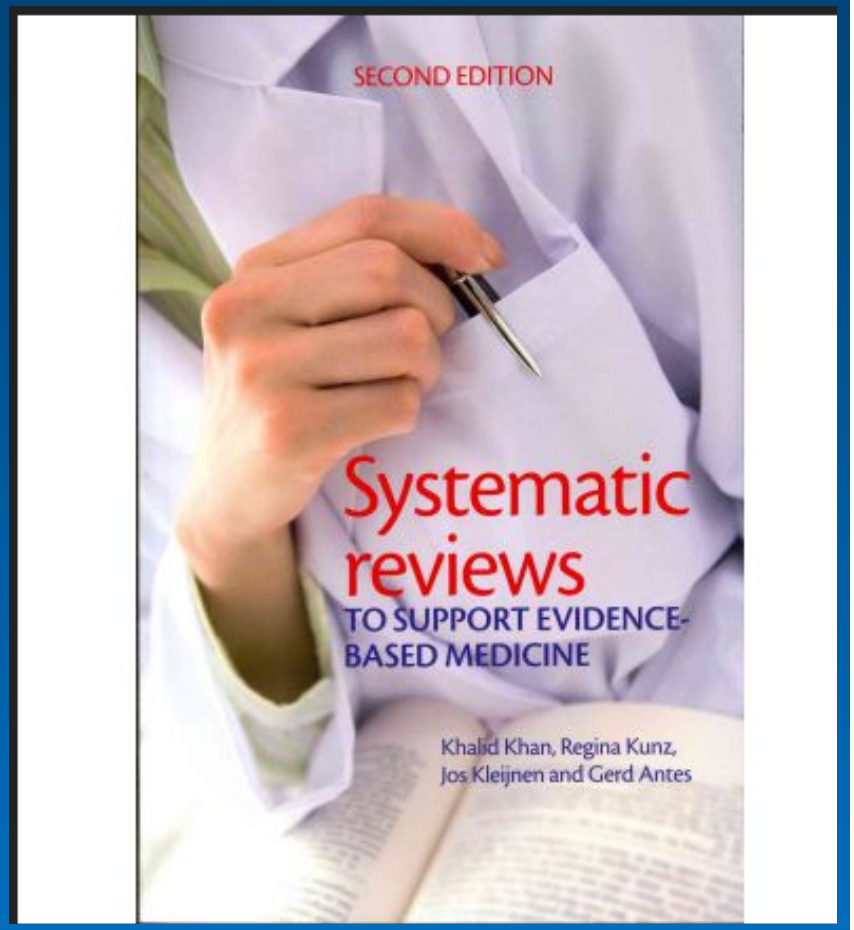
EBHC: Transfer von Forschung in die Praxis



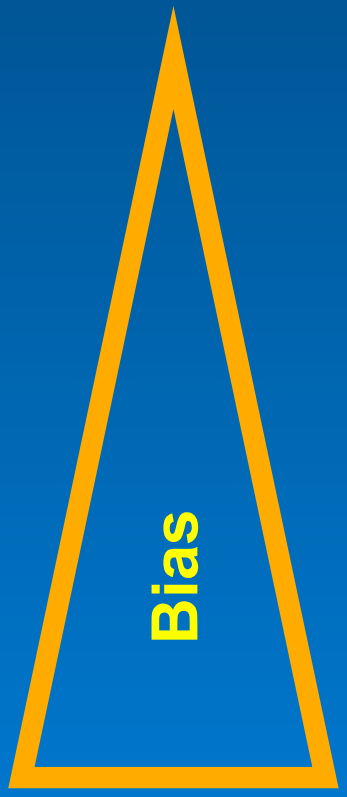
1. Formulieren der Fragestellung
2. Systematische Suche in der Literatur
3. Qualitätsbewertung der Funde
4. Zusammenfassung der Evidenz
5. Interpretation der Ergebnisse



Juli 2011

Aktualisierung!!

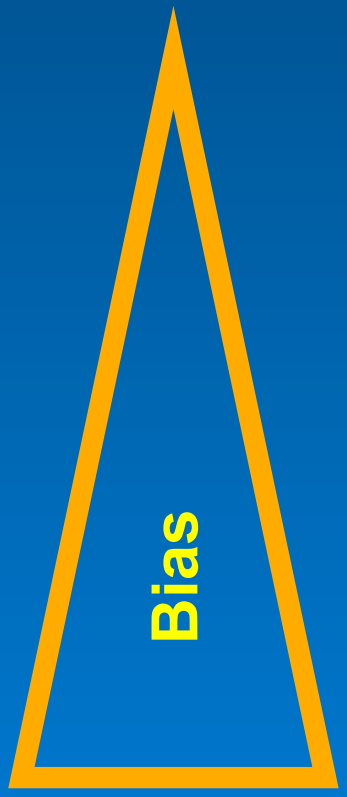
Level der Evidenz



Level der Evidenz	*Therapiestudien*
I	Random.-kontrollierte Studien
II	Kohortenstudien
III	Fall-Kontroll-Studien
IV	Fall-Serien
V	Experten

http://www.cebm.net

Level der Evidenz



Level der Evidenz	Systematische Übersichtsarbeiten (Reviews)
I	Random.-kontrollierte Studien
II	Kohortenstudien
III	Fall-Kontroll-Studien
IV	Fall-Serien
V	Experten

http://www.cebm.net

Organisations using GRADE

GRADE

WHO

ATS

Society of Critical Care Medicine
The Intensive Care Professionals

BMJ Clinical Evidence

The Endocrine Society

NHS
National Institute for Health and Clinical Excellence

EBM

American College of Chest Physicians

ACP

PIEBM

UpToDate

THE COCHRANE COLLABORATION

University of Pennsylvania Health System

TMJ

Agenzia Sanitaria Regionale

European Society of Thoracic Surgeons
ESTS

Socialstyrelsen
THE NATIONAL BOARD OF HEALTH AND WELFARE

Ontario

bmj.com

EBN
Evidence-based Nursing
Südtirol - Alto Adige

Canadian Agency for Drugs and Technologies in Health

Surviving Sepsis

JIDC

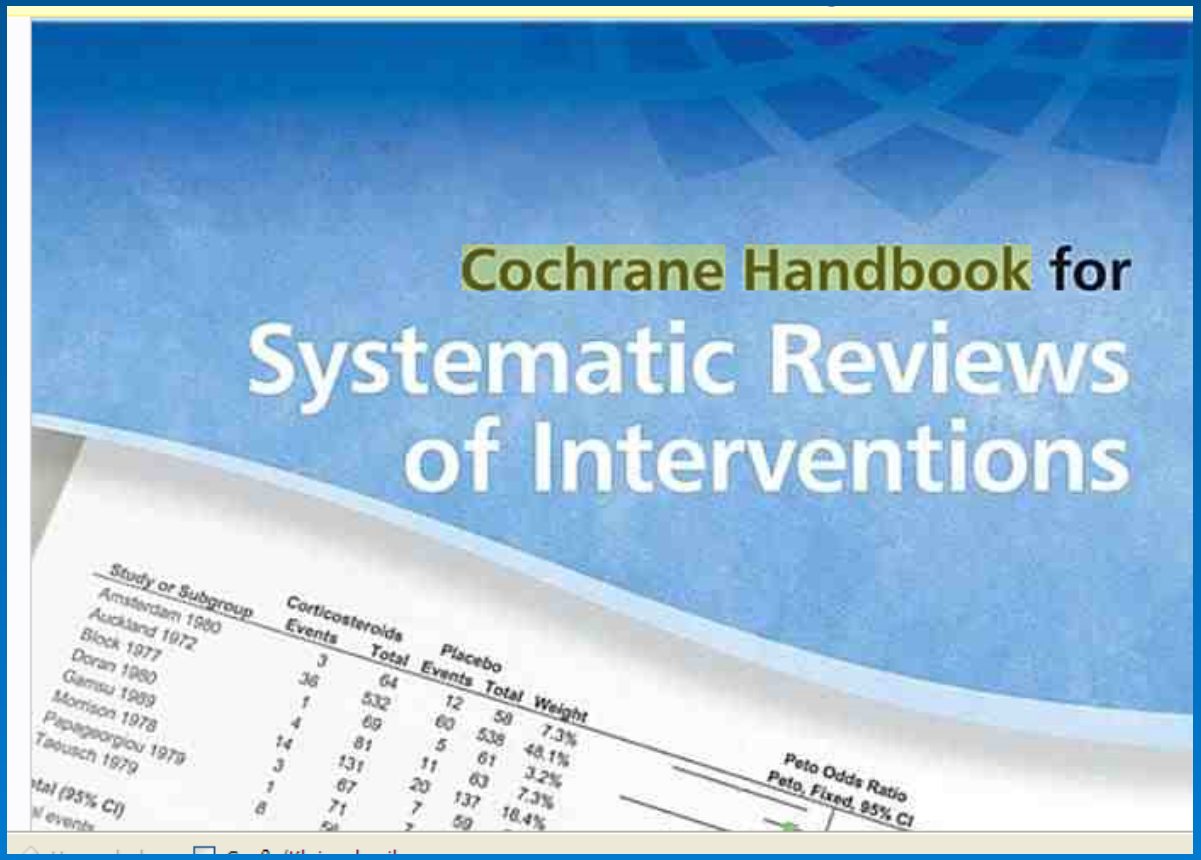
SVS
Society for Vascular Surgery

äzq

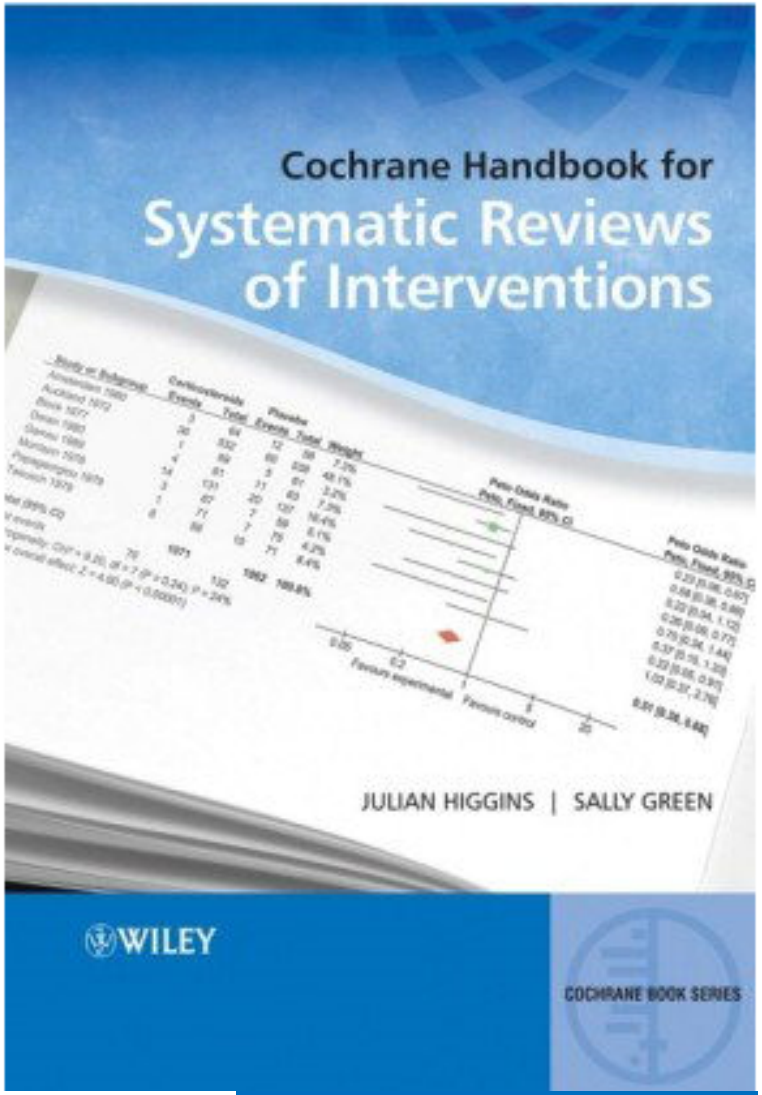
AHRQ

Systematic Reviews mit Fehlerschutzprogramm: Minimierung von systematischen Fehlern

Risk of Bias



Part 3: Special topics



Integration und Kooperation
ist besser als Abgrenzung und Polarisierung

Rigorose Methodik?

- (Risk of) Bias kommt in der Versorgungsforschung nicht vor
- Die Multidisziplinarität führt zu schädlicher Konkurrenz zwischen den Fachdisziplinen
- Weit verbreitete Aufweichung methodischer Mindeststandards

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Biography

I am Professor of Health Services Research (1994-) and the Dean of ScHARR (2010-). I have recently been appointed as the inaugural Director of the NIHR School for Public Health Research (2012-). I was Director of the Medical Care Research Unit at the University of Sheffield from 1993 - 2010. Before joining Sheffield University in 1981 as a medical statistician I spent five years as a research associate at University College London working on road traffic accident prevention.

Key Recent Research Papers

- Arain M, **Nicholl J**, Campbell M. Patients' experience and satisfaction with GP led walk-in centres in the UK; a cross sectional study. BMC Health Serv Res. 2013 Apr 18;13(1):142. Doi: 10.1186/1472-6963-13-142
- Girling AJ, Hofer TP, Wu J, Chilton PJ, **Nicholl JP**, Mohammed MA, Lilford RJ,. Case-mix adjusted hospital mortality is a poor proxy for preventable mortality: a modelling study. BMJ Qual Saf. 2012 Oct 15.
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- Goodacre S, Wilson R, Shephard N, **Nicholl J**. Derivation and validation of a risk adjustment model for predicting seven day mortality in emergency medical admissions: mixed prospective and retrospective cohort study. BMJ 2012; 344:e2904. Doi: 10.1136/bmje2904.
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- Penson R, Coleman P, Mason S, **Nicholl J**. Why do patients with minor or moderate conditions that could be managed in other settings attend the emergency department? Emerg Med J. 2011 May 11.
- Roberts I, Prieto-Merino D, Shakur H, Chalmers I, **Nicholl J**. Effect of consent rituals on mortality in emergency care research. Lancet. 2011 Mar 26;377(9771):1071-2.
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- McCulloch P, Altman DG, Campbell WB, Flum DR, Glasziou P, Marshall JC, **Nicholl J**. No surgical innovation without evaluation. The IDEAL recommendations. Lancet, 2009; 374: 1105-1112.
- Morrell CJ, Slade P, Warner R, Paley G, Dixon S, Walters SJ, Brugha T, Barkham M, Parry GJ, **Nicholl J**. Clinical effectiveness of health visitor training in psychologically informed approaches for depression in postnatal women: pragmatic cluster randomised trial in primary care. BMJ, 2009: 338: 3045.
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- Computerized advice on drug dosage to improve prescribing practice
- Continuing education meetings and workshops: effects on professional practice and health care outcomes
- Dietary advice given by a dietitian versus other health professional or self-help resources to reduce blood cholesterol
- Discharge planning from hospital to home

Insecticide-treated bed nets and curtains for preventing malaria

Abstract

Jump to...

Background

Malaria is an important cause of illness and death in many parts of the world, especially in sub-Saharan Africa. There has been a renewed emphasis on preventive measures at community and individual levels. Insecticide-treated nets (ITNs) are the most prominent malaria preventive measure for large-scale deployment in highly endemic areas.

Objectives

To assess the impact of insecticide-treated bed nets or curtains on mortality, malarial illness (life-threatening and mild), malaria parasitaemia, anaemia, and spleen rates.

Search methods

I searched the Cochrane Infectious Diseases Group trials register (January 2003), CENTRAL (*The Cochrane Library*, Issue 1, 2003), MEDLINE (1966 to October 2003), EMBASE (1974 to November 2002), LILACS (1982 to January 2003), and reference lists of reviews, books, and trials. I handsearched journals, contacted researchers, funding agencies, and net and insecticide manufacturers.

Selection criteria

Individual and cluster randomized controlled trials of insecticide-treated bed nets or curtains compared to nets without insecticide or no nets. Trials including only pregnant women were excluded.

Data collection and analysis

The reviewer and two independent assessors reviewed trials for inclusion. The reviewer assessed the risk of bias in the trials, and extracted and analysed data.

Main results

Fourteen cluster randomized and eight individually randomized controlled trials met the inclusion criteria. Five trials measured child mortality: ITNs provided 17% protective efficacy (PE) compared to no nets (relative rate 0.83, 95% confidence interval (CI) 0.76 to 0.90), and 23% PE compared to untreated nets (relative rate 0.77, 95% CI 0.63 to 0.95). About 5.5 lives (95% CI 3.39 to 7.67) can be saved each year for every 1000 children protected with ITNs. In areas with stable malaria, ITNs reduced the incidence of uncomplicated malarial episodes in areas of stable malaria by 50% compared to no nets, and 39% compared to untreated nets; and in areas of unstable malaria: by 62% for compared to no nets and 43% compared to untreated nets for *Plasmodium falciparum* episodes, and by 52% compared to no nets and 11% compared to untreated nets for *P vivax* episodes. When compared to no nets and in areas of stable malaria, ITNs also had an impact on severe malaria (45% PE, 95% CI 20 to 63), parasite prevalence (13% PE), high parasitaemia (29% PE), splenomegaly (30% PE), and their use improved the average haemoglobin level in children by 1.7% packed cell volume.

Authors' conclusions

ITNs are highly effective in reducing childhood mortality and morbidity from malaria. Widespread access to ITNs is currently being advocated by Roll Back Malaria, but universal deployment will require major financial, technical, and operational inputs.

Cochrane Review
Christian Lengeler, Basel

Insecticide-treated bed nets and curtains for preventing malaria

- Hochwirksam gegenüber nicht imprägnierten Moskitonetzen
- Substantieller Beitrag von Grundlagenwissenschaft
- Abwägung Nutzen vs. Schaden
- Einfache (nicht komplexe) Intervention, komplexe Wirkung
- Hoher Anteil von Cluster-randomisierten Studien
- Placebo-kontrollierte Studie

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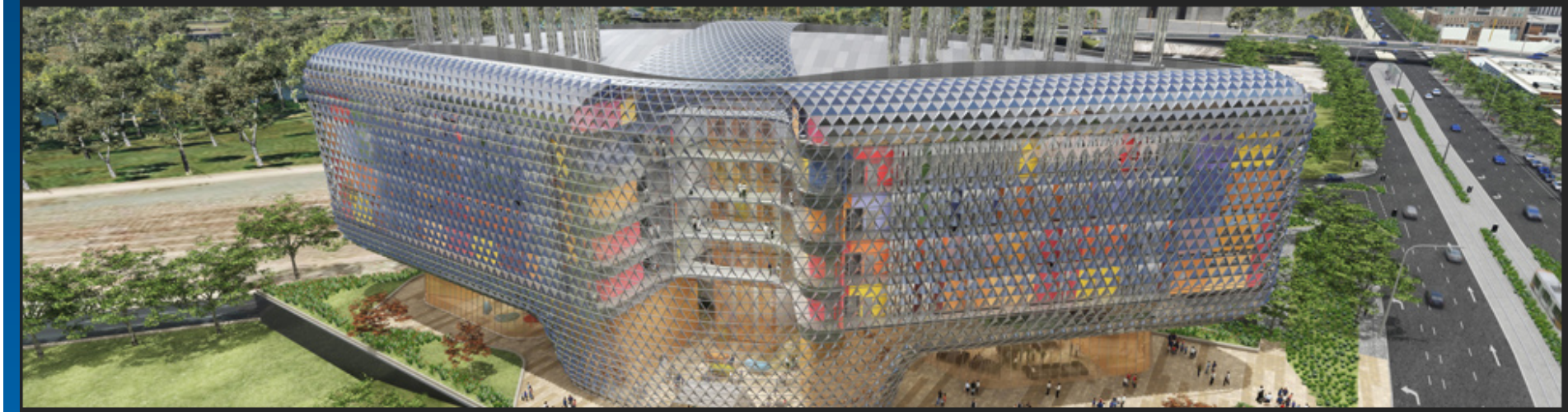

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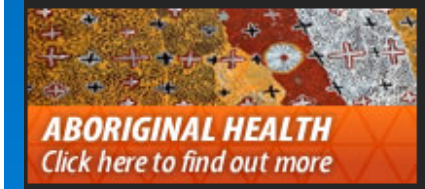
- CONSTRUCTION GALLERY



NEWS AND

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VISION, MISSION & VALUES

OUR VISION:

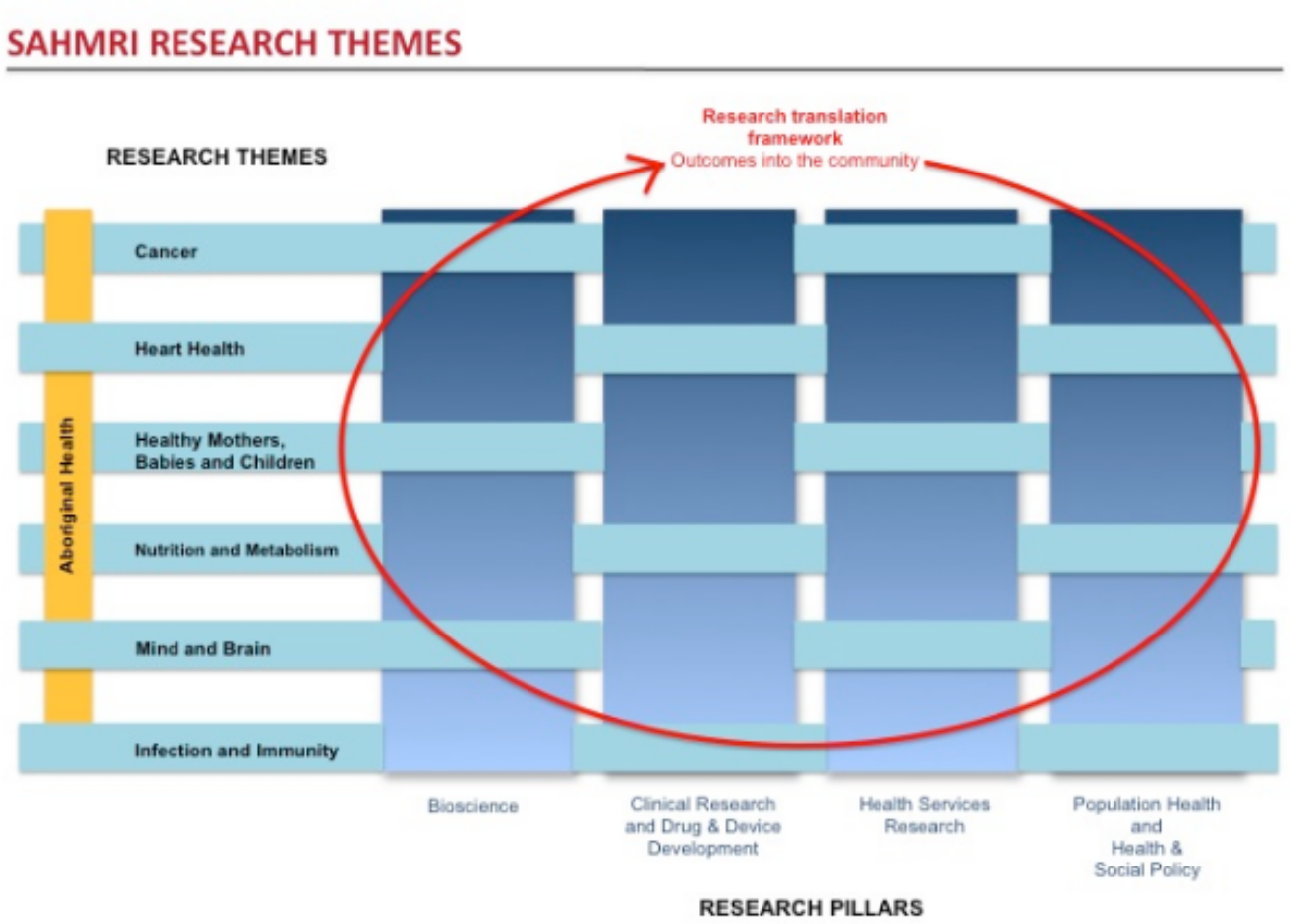
To transform research into health.

OUR MISSION:

To fundamentally improve the quality of life for all people, through innovative, world class and groundbreaking health and medical research.

As South Australia's flagship research facility, SAHMRI will provide a clear focal point for health and medical research in the State. SAHMRI will be a vibrant, globally-recognised institute that harnesses dynamic collaborations to deliver tangible health outcomes and community impacts.

RESEARCH PILLARS



SAHMRI has established seven research themes: Aboriginal Health, Heart Health, Cancer, Mind and Brain, Nutrition and Metabolism, Infection and Immunity and Healthy Mothers, Babies and Children.

As part of its commitment to translation and conducting research across the research spectrum, SAHMRI has created Pillar Committees based on the four pillars of health and medical research:


HINDMARSH

Fazit

- Versorgungsforschung im Praxisalltag sollte hohen methodischen Ansprüchen genügen, liefert hochwertige Evidenz für die Anwendung
- Die randomisierte Auswahl von Interventionen ist das stärkste Mittel, um das Risiko von Bias zu minimieren. Die systematische Nutzung von Zufall ist das beste Mittel, Zufallsfehler zu kontrollieren
- Randomisierung ist keine Allzweckwaffe: Für jede Fragestellung das richtige Studiendesign
- Interessenkonflikte sorgfältig berücksichtigen, da Versorgungsforschung meistens Auswirkungen auf Ressourcen hat