

***"Meeting the research
information needs of patients
and clinicians more effectively"***

Iain Chalmers

Editor, *James Lind Library*

www.jameslindlibrary.org



equator
network

1st Annual Lecture

The problem

**People are suffering and dying
unnecessarily**

**because of insufficient
clinician and patient access**

**to reliable, up-to-date information
about completed and ongoing research**

***Why have I been obsessed for
forty years with the need to
meet the research information
needs of patients and clinicians
more effectively?***

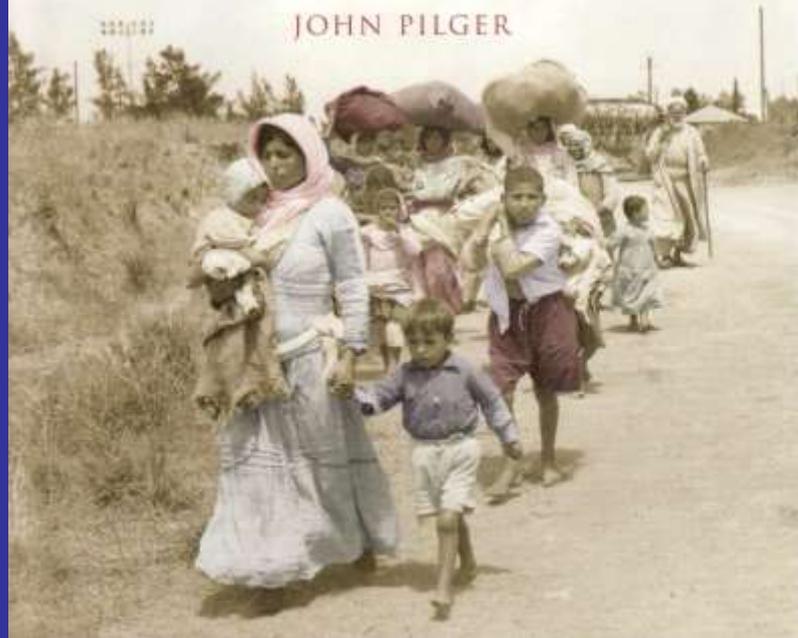
My experience as a clinician

ILAN PAPPE

The ETHNIC
CLEANSING *of*
PALESTINE

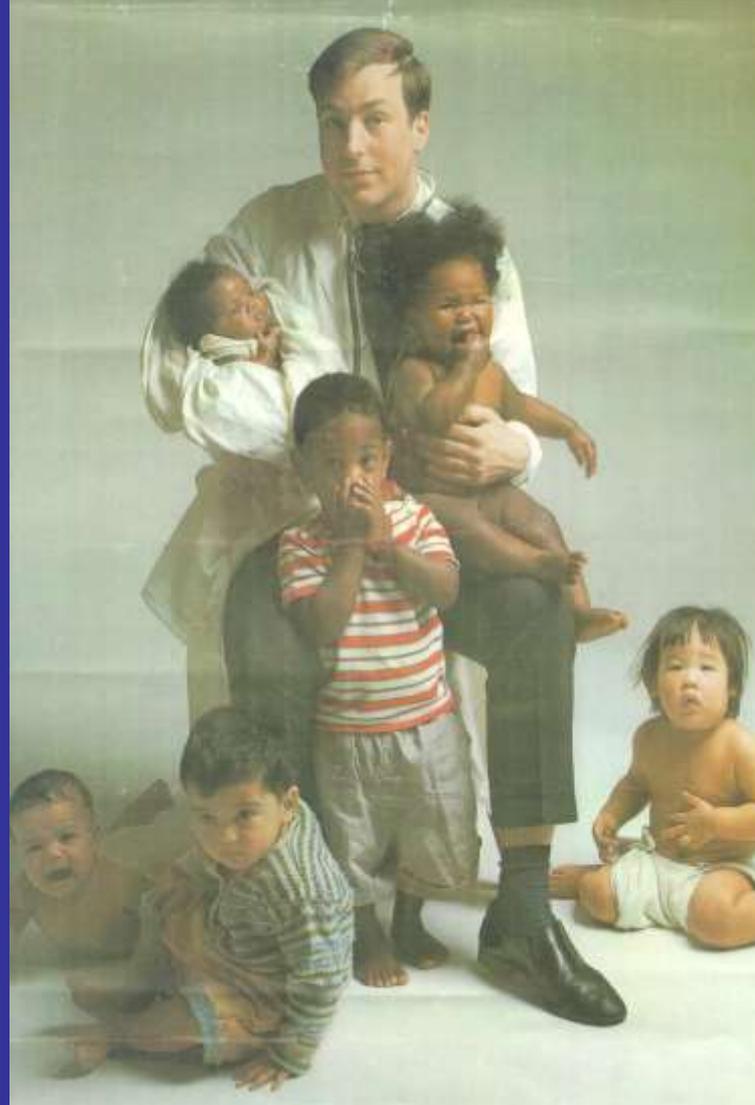
'Ilan Pappé is Israel's bravest, most principled,
most incisive historian.'

JOHN PILGER



60 years ago

**This do-gooder
needs your help**



Fund raising advert for the United Nations Association



TEACH THY TONGUE TO
SAY I DO NOT KNOW
AND THOU SHALT PROGRESS

I could have served my Palestinian patients and their community better if I had had:

more humility

access to systematic reviews of relevant clinical trials.



UNRWA Clinic, Khan Younis Camp, Gaza Strip, 1969/70.



Severe malnutrition following measles

A systematic review of clinical trials reported between 1939 and 1967 shows that:

antibiotics prescribed for children with measles can reduce their risk of developing pneumonia

Which antibiotic should I use in the 21st century, and at which dose, frequency and duration?

Paul Glasziou et al. What is missing from treatment descriptions in trials and reviews? BMJ In press.

BMJ 23 October 2006

Prophylactic antibiotics to prevent pneumonia and other complications after measles: community based randomised double blind placebo controlled trial in Guinea-Bissau

May-Lill Garly, Carlitos Balé, Cesário Lourenco Martins, Hilton C Whittle, Jens Nielsen, Ida M Lisse, Peter Aaby

Interventions Sulfamethoxazole-trimethoprim (**co-trimoxazole**) or placebo for **seven days.**

Conclusions The group that received prophylactic antibiotics **had less pneumonia and conjunctivitis** and had significantly **higher weight gains** in the month after inclusion. The results indicate that prophylactic antibiotics may have an important role in the management of measles infection in low income countries.

Trial registration Clinical trials NCT001168532.

Are there any relevant ongoing controlled trials addressing these uncertainties?



World Health
Organization

INTERNATIONAL CLINICAL TRIALS REGISTRY PLATFORM
SEARCH PORTAL

[Home](#) [Advanced Search](#) [ICTRP website](#) [Disclaimer](#) [Search tips](#) [Resources](#)

[Search tips](#)

Results of the search for **measles AND antibiotics in the Title**, Main ID, Countries, Interventions and Condition fields.

No results found!

My experience as a patient

What do I want from health research and researchers when I am a patient?

Iain Chalmers

BRITISH MEDICAL JOURNAL, 20th May 1995, Vol. 310, Pages 1315-1318

systematic reviews of carefully controlled research will be required to produce the kind of evidence that I am likely to believe, and that I would wish those offering me care to take into account.

Retained/impacted ear wax

a problem causing impaired hearing and localised eczema,
sometimes associated with serious complications,
which costs the NHS £50 million a year

Otolaryngology–Head and Neck Surgery (2007) 137, S69-S71

INVITED ARTICLE

**Better information systems are needed to help
patients and clinicians integrate clinical research
within everyday clinical practice**

Iain Chalmers, Oxford, UK



RESOURCES

Evidence Based Reviews

Bandolier, Cochrane Library, DARE, HTA Database, NHS EED

Guidance

CKS (incorporating Prodigy), National Library of Guidelines, NICE Guidance, Protocols and Care Pathways and selected International Guidelines

Specialist Libraries

Collections of the best available evidence for different communities of practice

Books, Journals and Healthcare

Databases

AMED, British Nursing Index, CINAHL, E-books, EMBASE, HMIC, MEDLINE, My Journals, PsycINFO, PubMed, Databases from Dialog



Burton MJ, Doree CJ. Ear drops for the removal of ear wax. ***Cochrane Database of Systematic Reviews*** 2003, Issue 3.

“...ear drops (of any sort) can help to remove ear wax...”

“...water and saline drops appear to be as good as more costly commercial products...”

“...The quality of the trials was generally low and more research is needed.”

What do I want from health research and researchers when I am a patient?

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systematic reviews of carefully controlled research will be required to produce the kind of evidence that I am likely to believe, and that I would wish those offering me care to take into account.

when the relative merits of alternative forms of care are uncertain, I want to be offered the opportunity to participate in properly controlled research

Welcome to the WHO International Clinical Trials Registry Platform

The mission of the WHO Registry Platform is to ensure that a complete view of research is accessible to all those involved in health care decision making. This will improve research transparency and will ultimately strengthen the validity and value of the scientific evidence base.

The registration of all interventional trials is a scientific, ethical and moral responsibility.

An evaluation of the self-use of bulb syringes for the self-treatment of ear wax and their impact on primary care workload - a randomised controlled trial

ISRCTN

ISRCTN71172551



MEDICAL EMERGENCY CARD

supplied by

VOLUNTARY EUTHANASIA SOCIETY

3 Prince of Wales Terrace London W8 5PG 0171 937 7770

My Full name is

IAIN GEOFFREY CHALMERS

If there is no reasonable prospect of recovery I do NOT wish to be resuscitated or my life to be artificially prolonged
My Advance Directive is lodged with

DR. ANDY CHIVERS
01865-558861

1. Medical Information eg. blood group

Invite me to participate in all randomized controlled trials for which I am potentially eligible

2. After my death my organs may be used for medical purposes

YES

3. Next of Kin

JAN CHALMERS
01865-554949

Signature

Date

Iain Chalmers 7/12/98

In summary

As a clinician and as a patient, I want reader access to:

- up-to-date, valid, systematic reviews
- with details sufficient to inform my decision making; and
- information about relevant unpublished and ongoing trials

Improving reports of research



equator
network



What guidance is available for reporting research studies?

In addition to the Uniform Requirements, a number of reporting guidelines were developed by groups of experts to facilitate reporting of research studies. Medical journals, including [BMJ](#), [JAMA](#), [Lancet](#), and [NEJM](#) often require compliance to all or some of the following reporting guidelines:

- [CONSORT Statement](#) (reporting of randomised controlled trials)
- [STARD](#) (reporting of diagnostic accuracy studies)
- [STROBE](#) (reporting of observational studies in epidemiology)
- [QUOROM](#), recently renamed [PRISMA](#) (reporting of systematic reviews)
- [MOOSE](#) (reporting of meta-analyses of observational studies)

Formal sources of evidence

Published
Clinical
Studies

Referenced

Captured

Systematic
Reviews

Quality
Labelled

Summaries

Pathways,
Guidelines &
Standards

Tailored Content

Models &
Tools

Quality Labelled

Captured

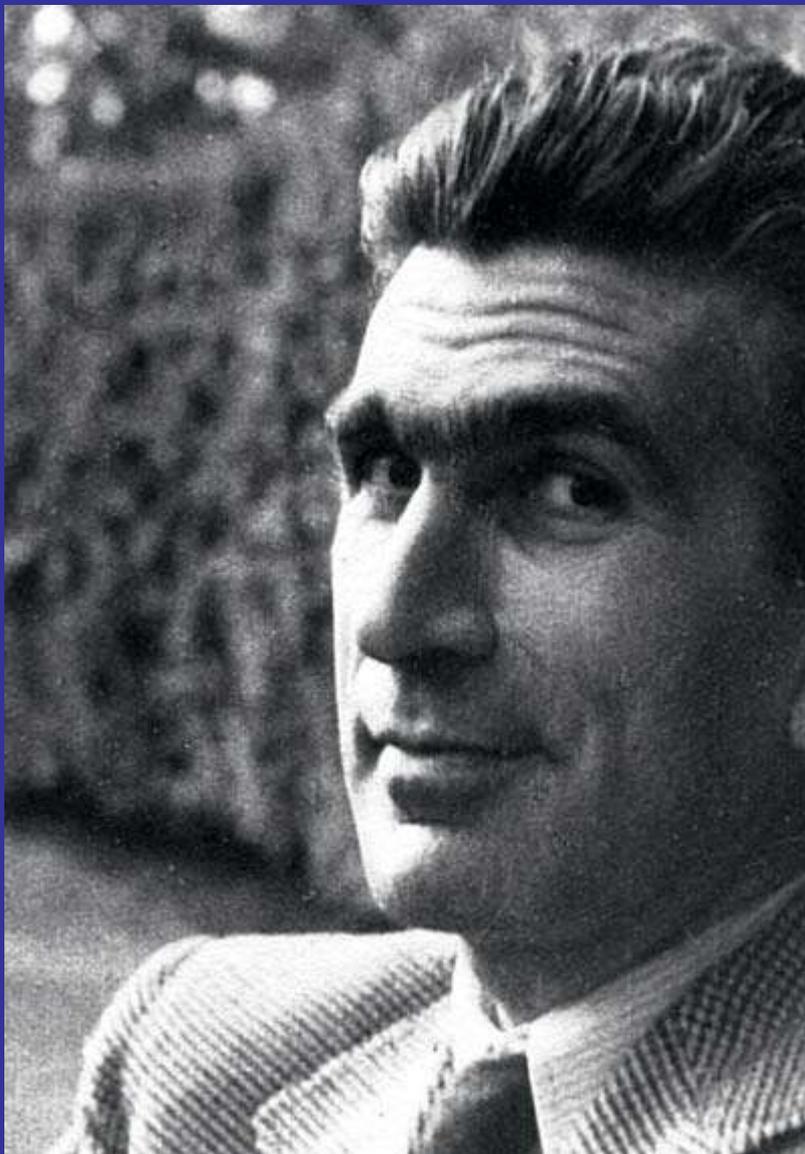
Referenced

"Local Experience"



**CONSORT, STARD,
and STROBE**

**QUOROM/PRISMA
and MOOSE**



Marc Daniels, 1950

“...Some essential details are omitted from the report, possibly because of required brevity. This leads one to consider if it is possible, in planning a trial, in reporting the results, or in assessing the published reports of trials, to apply criteria which must be satisfied in the analysis is to be entirely acceptable.”

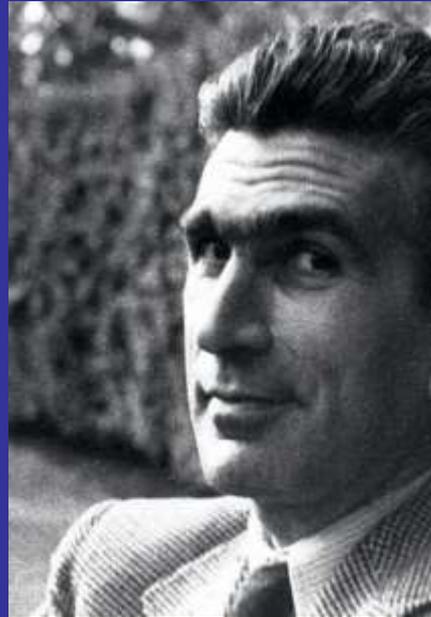
Scientific appraisal of new drugs in tuberculosis. American Review of Tuberculosis 61:751-756.

The team responsible for designing, coordinating and reporting the MRC randomised trial of streptomycin for pulmonary tuberculosis, 1947-1948

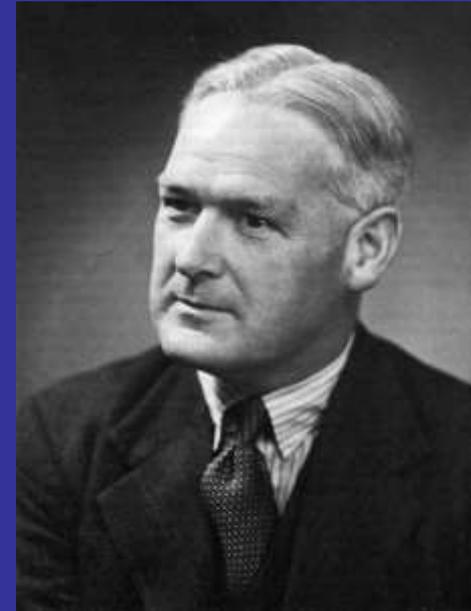
(with administrative assistance from Mrs Chirene Agnew)



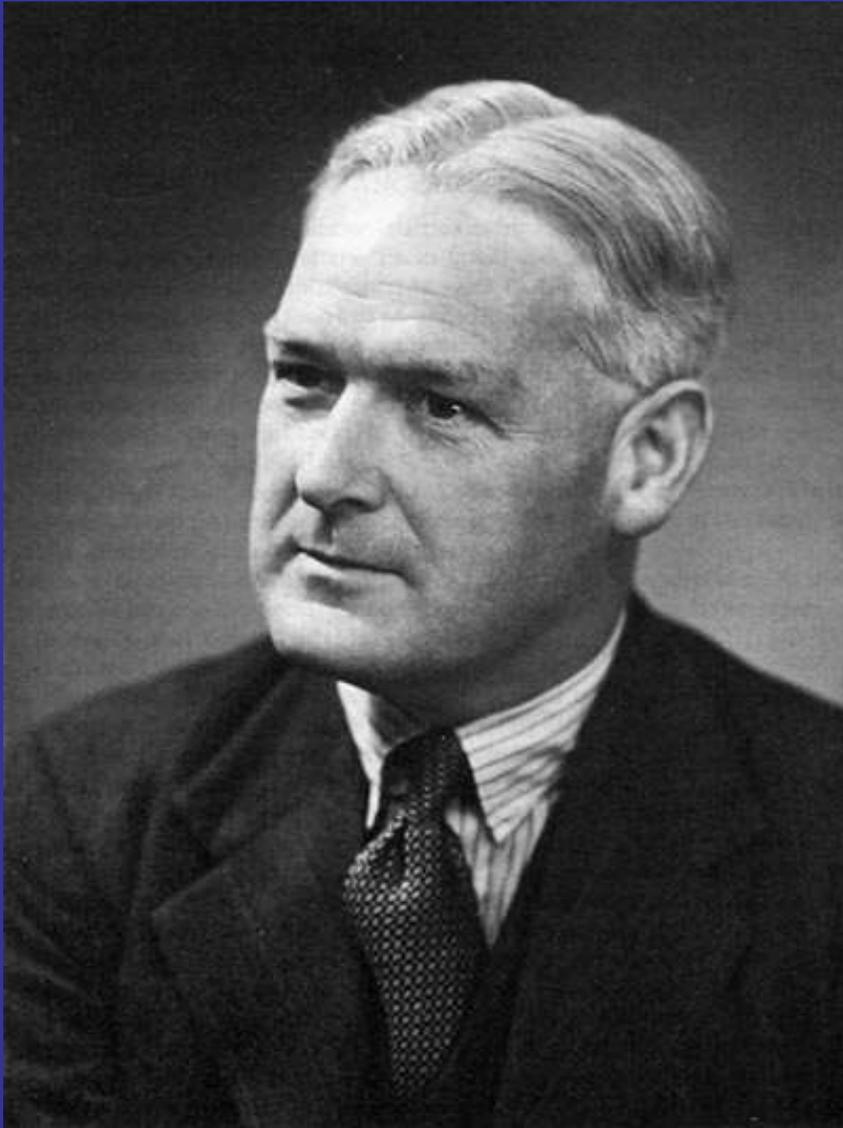
Philip D'Arcy Hart



Marc Daniels



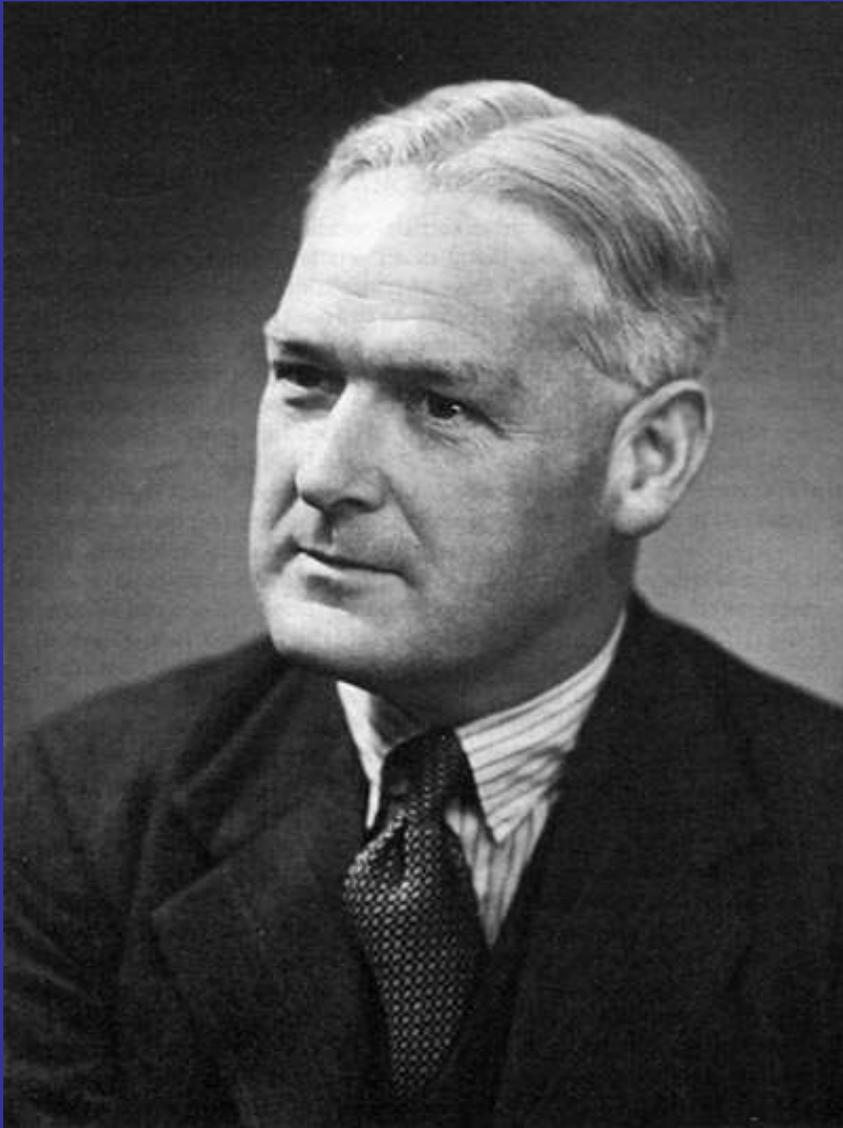
Austin Bradford Hill



Austin Bradford Hill, 1965

Four questions to which readers want answers when reading reports of research.

1. Why did you start?
2. **What did you do?**
3. **What answer did you get?**
4. And what does it mean anyway?



Austin Bradford Hill, 1965

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Is the study worth doing?

Department of Public Health and Primary Care, University of Oxford,
Gibson Building, Radcliffe Infirmary, Oxford OX2 6HE, UK
(L M Carpenter PhD)

Lucy M Carpenter

Vol 342 • July 24, 1993

**“Good systematic reviews
provide a valuable foundation
for new research initiatives.”**

Lancet 1993;342:221-223.

The use of systematic reviews when designing studies

Nicola J Cooper, David R Jones* and Alex J Sutton*

Conclusions Cautious interpretation of these results is necessary, but it is apparent that the proportion of study investigators using Cochrane or other systematic reviews in designing their new studies was very limited. Inclusion of encouragement in publication or application guidelines to consider and cite review results is desirable. *Clinical Trials* 2005; **2**: 260–264. www.SCTjournal.com

Find out what's known already before embarking on new research

Systematic review of therapeutic interventions in human prion disease

Lesley A. Stewart, Larysa H.M. Rydzewska, Geraldine F. Keogh and Richard S.G. Knight

Neurology 2008;70;1272-1281

DOI: 10.1212/01.wnl.0000308955.25760.c2

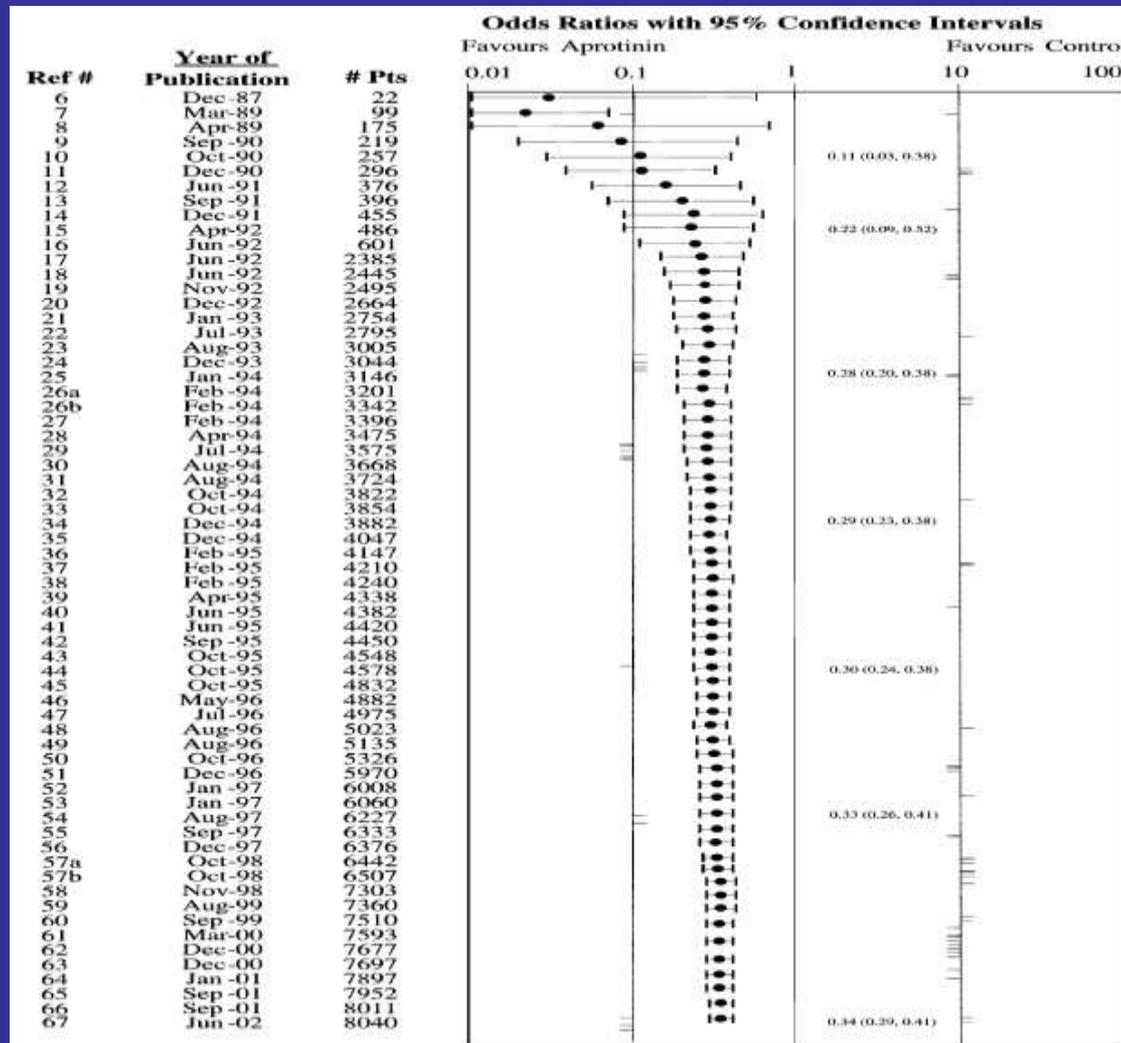
Conclusions: Thirty years of clinical investigation of patients with prion disease has resulted in little progress in either defining or evaluating potential treatments. Disease course and treatment of all patients must be evaluated within a structured framework, preferably within randomized controlled trials. *Neurology*[®] 2008;70:1272-1281

Randomized controlled trials of aprotinin in cardiac surgery: could clinical equipoise have stopped the bleeding?

Dean Fergusson^{a,b}, Kathleen Cranley Glass^{b,c}, Brian Hutton^a and Stan Shapiro^{b,c,d}

Clinical Trials 2005; 2: 218–232

Cumulative estimate of the effect of aprotinin on perioperative blood transfusion, 1987-2002.



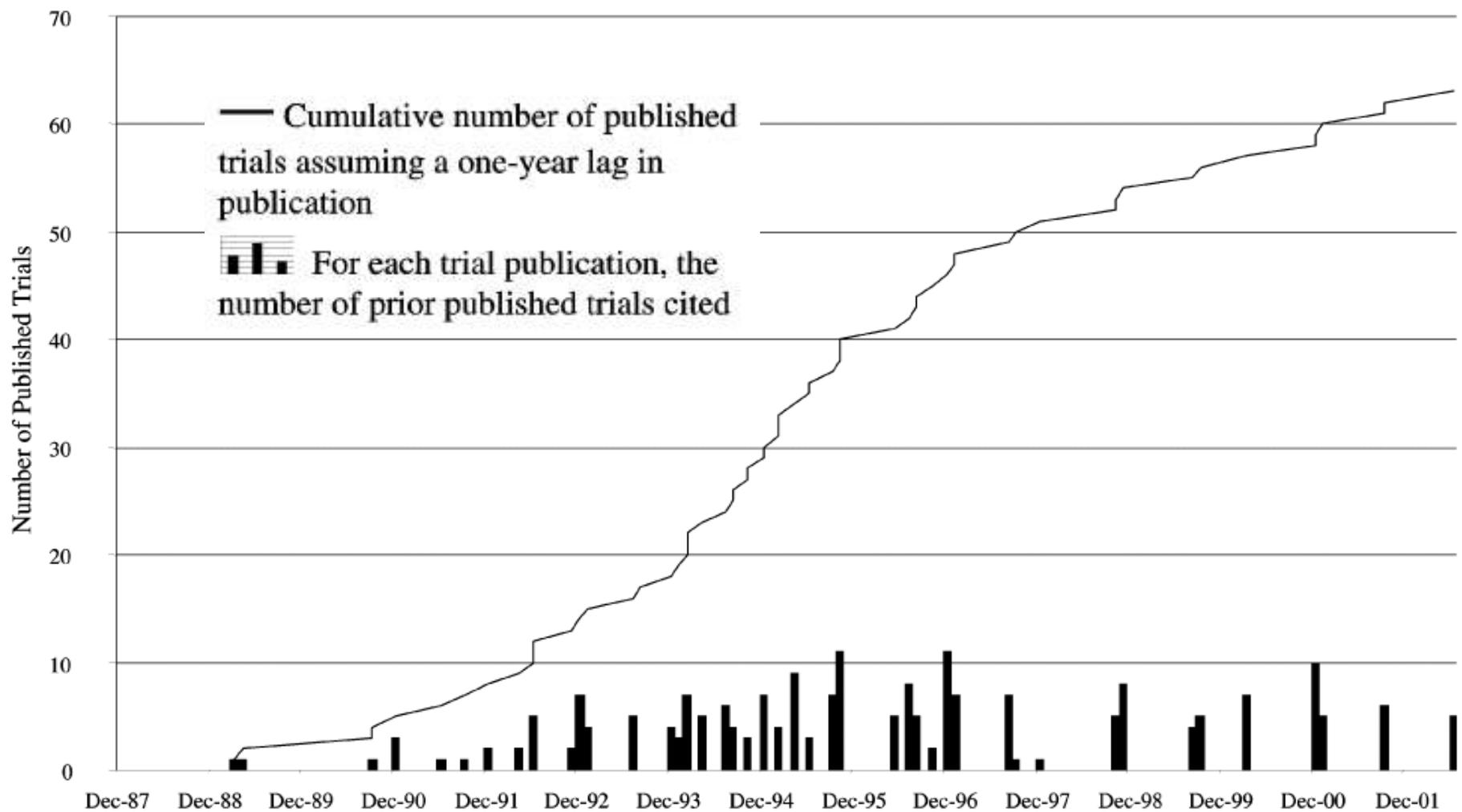


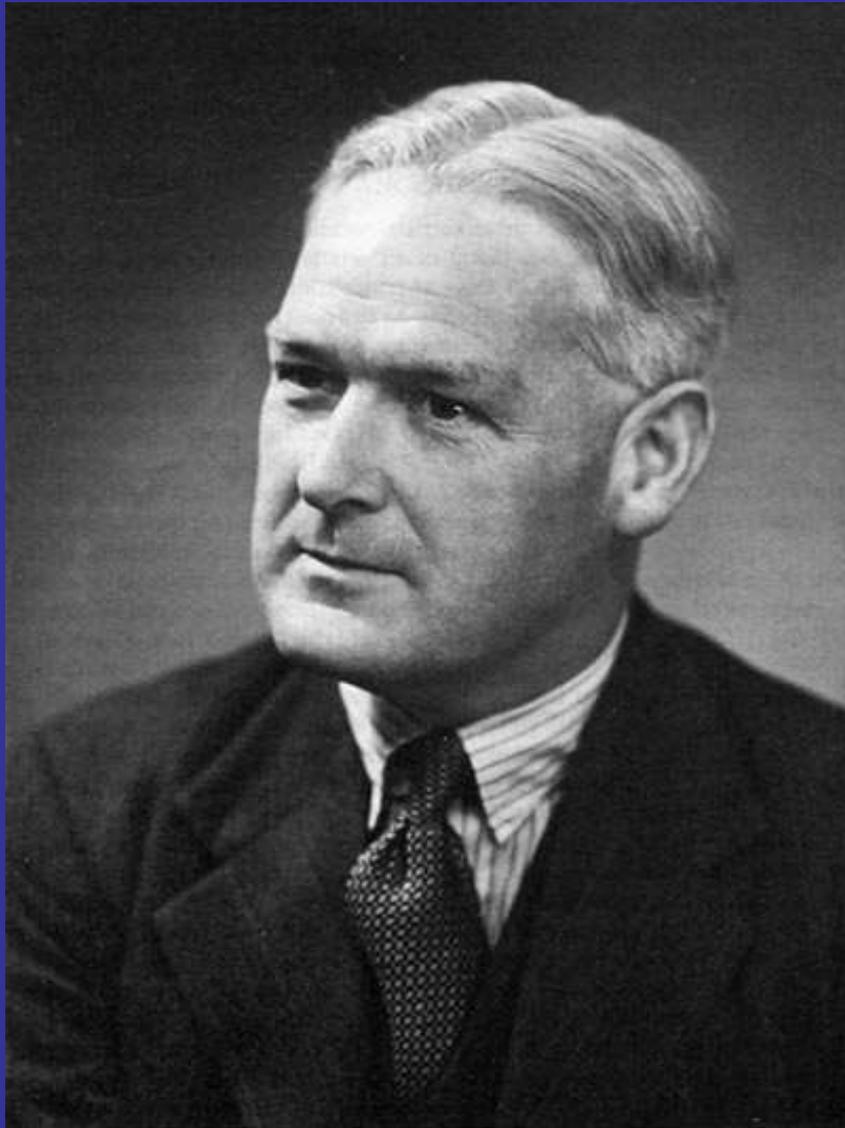
Figure 6 Citations of prior publications.

The failure of clinical scientists to prepare and refer to systematic reviews of existing evidence has resulted in:

harm and wasted resources in health care

and

wasted resources in health research



Austin Bradford Hill, 1965

Four questions to which readers want answers when reading reports of research.

- 1.** Why did you start?
- 2.** What did you do?
- 3.** What answer did you get?
- 4. And what does it mean anyway?**

Discussion Sections in Reports of Controlled Trials Published in General Medical Journals

Islands in Search of Continents?

Michael Clarke, DPhil; Iain Chalmers, MSc

JAMA. 1998;280:280-282

Classification of Discussion sections in RCT reports published in May issues of *Ann Int Med*, *BMJ*, *JAMA*, *Lancet*, and *N Eng J Med*

	1997 n=26		
First trial addressing the question	1		
Contained an updated systematic review integrating the new results	2		
Discussed a previous review but did not attempt to integrate new results	4		
No apparent systematic attempt to set new results in context of other trials	19		

The International Stroke Trial (IST): a randomised trial of aspirin, subcutaneous heparin, both, or neither among 19 435 patients with acute ischaemic stroke

*International Stroke Trial Collaborative Group**

Taking the IST together with the comparably large Chinese Acute Stroke Trial, aspirin produces a small but real reduction of about 10 deaths or recurrent strokes per 1000 during the first few weeks.

Discussion Sections in Reports of Controlled Trials Published in General Medical Journals

Mike Clarke, DPhil

Phil Alderson, MBChB

Iain Chalmers, DSc

JAMA. 2002;287:2799-2801

Classification of Discussion sections in RCT reports published in May issues of *Ann Int Med*, *BMJ*, *JAMA*, *Lancet*, and *N Eng J Med*

	1997 n=26	2001 n=33	
First trial addressing the question	1	3	
Contained an updated systematic review integrating the new results	2	0	
Discussed a previous review but did not attempt to integrate new results	4	3	
No apparent systematic attempt to set new results in context of other trials	19	27	

Reports of clinical trials should begin and end with up-to-date systematic reviews of other relevant evidence: a status report

Mike Clarke¹ Sally Hopewell¹ Iain Chalmers²

J R Soc Med 2007;**100**:187-190

Classification of Discussion sections in RCT reports published in May issues of *Ann Int Med*, *BMJ*, *JAMA*, *Lancet*, and *N Eng J Med*

	1997 n=26	2001 n=33	2005 n=18
First trial addressing the question	1	3	3
Contained an updated systematic review integrating the new results	2	0	0
Discussed a previous review but did not attempt to integrate new results	4	3	5
No apparent systematic attempt to set new results in context of other trials	19	27	10

Why promote the findings of single research studies?

PERSONAL VIEW **Paul Wilson, Mark Petticrew**

"Since when has a single scientific study constituted 'the truth' about anything?"

Medical journals can do more to ensure that researchers actually do discuss the findings of primary studies in the context of the existing and relevant evidence base. The Academy of Medical Sciences in London has recently argued that researchers, funders, and institutions should take greater responsibility for the accurate communication of non-experimental research. In truth, the research community as a whole needs to be more circumspect when it comes to the active promotion of primary research. Although all research has an audience, and should be made accessible, not all research can or should have an impact on practice or policy.

Putting clinical trials into context

In recognition that journal editors have a key part to play in ensuring that published research is presented in a way that clearly illustrates why it was necessary and what impact a particular trial has on the existing state of knowledge, *The Lancet* has decided to update its policies in this area. From August, 2005, we will require authors of clinical trials submitted to *The Lancet* to include a clear summary of previous research findings, and to explain how their trial's findings affect this summary.

Charles Young, Richard Horton
The Lancet, London NW1 7BY, UK

www.thelancet.com Vol 366 July 9, 2005

**Improving syntheses of
research findings
(systematic reviews)**



1987

Cynthia Mulrow.

**The medical review article:
state of the science.**

Ann Int Med 10:485-88.



1988

Andy Oxman, Gordon Guyatt.

**Guidelines for reading literature
reviews.**

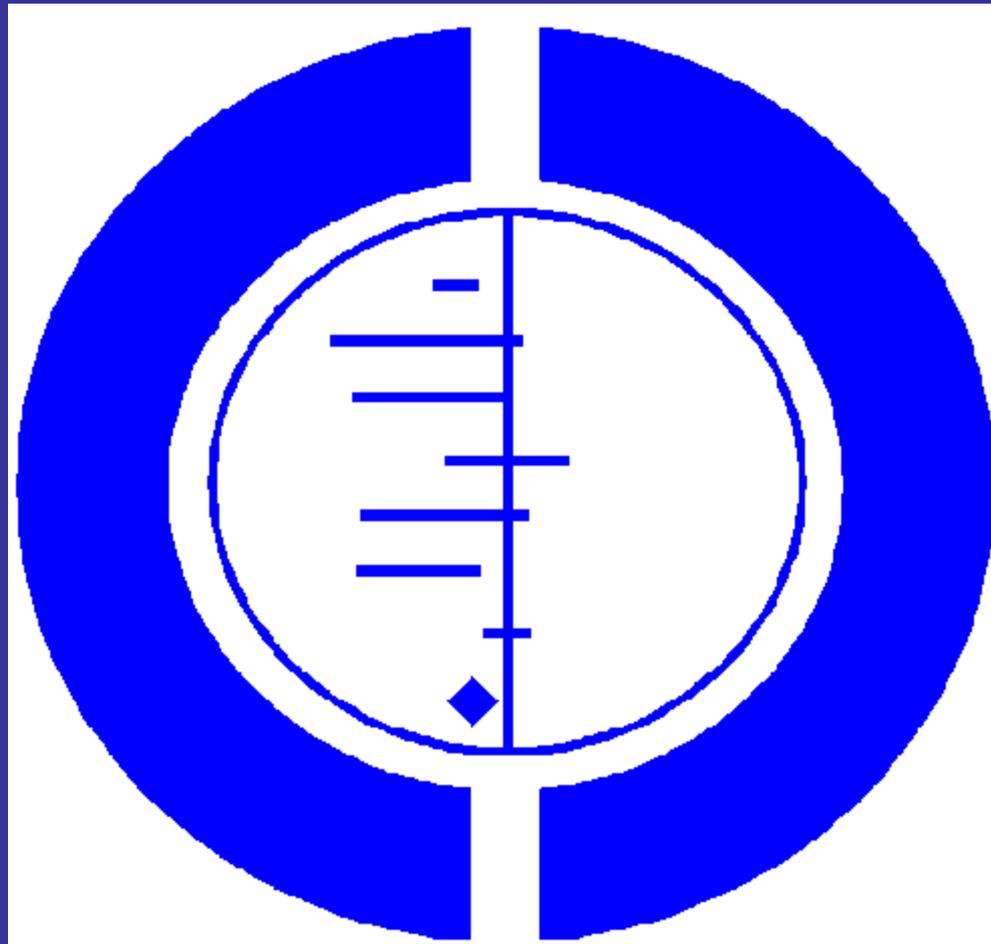
Can Med Assoc J 138:697-703.

**Electronic dissemination and
maintenance of systematic reviews of
controlled trials of perinatal care:**

1988-1992: *Oxford Database of Perinatal Trials* (ODPT)

1993-1995: *Cochrane Pregnancy and Childbirth Database* (CCPC)

1995- : *Cochrane Database of Systematic Reviews* (CDSR)



The Cochrane Collaboration

Preparing, maintaining and promoting the accessibility of systematic reviews of the effects of healthcare interventions

[30 March 1994]

SECTION VI:

**PREPARING AND MAINTAINING
SYSTEMATIC REVIEWS**

(‘The Cochrane Collaboration Tool Kit’)

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Iain Chalmers, Mike Clarke, Murray Enkin, Ken Schulz, Mark Starr

Citation frequency of *Cochrane Database of Systematic Reviews (CDSR)* (June 2008):

NEJM	186 000 citations
Lancet	136 000
JAMA	104 000
BMJ	62 000
Annals	41 000
Archives	30 000
Am J Med	22 000
Cochrane	15 000

First **Impact Factor** for **CDSR**: **4.654**

[14th of 100 journals in Thomson ISI category for Medicine, General & Internal]