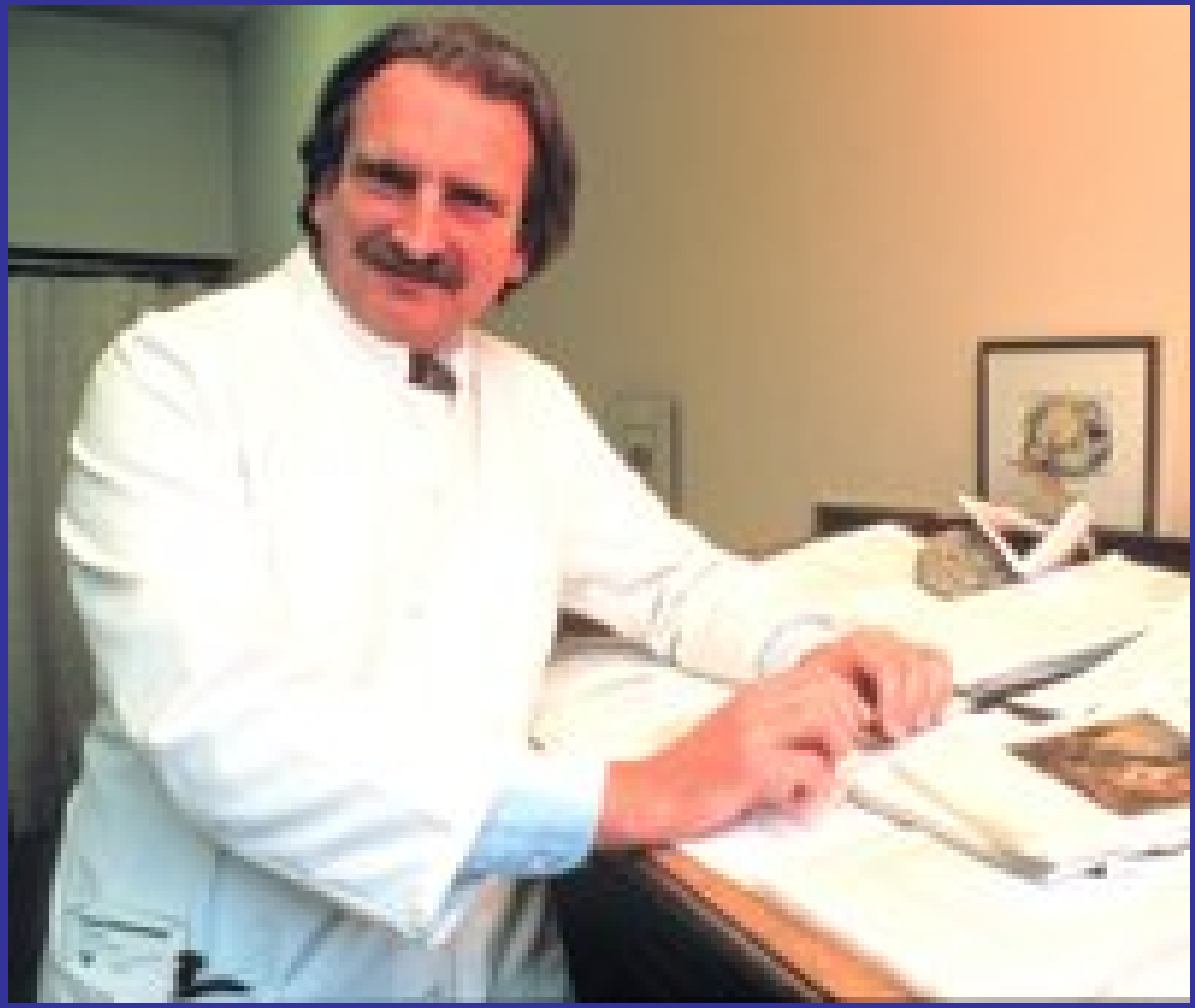
Reducing waste in deciding what research to do

Iain Chalmers
Coordinator, James Lind Initiative

A contribution to

A meeting to mark the 10th anniversary of the death of Michael Berger

Duesseldorf, 24 May 2013



Iain Chalmers' notes to accompany the slides for a talk entitled 'Reducing waste in deciding what research to do' which had been prepared for a meeting to mark the 10th anniversary of the death of Michael Berger.

The talk was due to have been delivered in Duesseldorf on 24 May 2013, but the plan had to be abandoned because of the disruption of flights from London Heathrow resulting from an engine fire in a BA Airbus.

I planned to begin my talk by saying how glad I was to have been asked by Bernd Richter to prepare it. I had let Michael Berger down on the only occasion that he had asked me to do something for him! He had asked me to contribute, with Bernd, to a workshop at a meeting of the European Association for the Study of Diabetes in Jerusalem in 2000. As someone who knew little about diabetes I was anyway reluctant to do this; but I eventually withdrew because I was infuriated by the use of a map in the conference programme. This failed to indicate Israel's illegal occupation of Palestinian and Syrian territory. I feel deep shame by the way my country has repeatedly betrayed the indigenous people of Palestine over the past century. The maps in Slide 6 and the following two slides make clear the consequences for the Palestinian people. Palestinians, not Europeans, are being expected to pay the price for European anti-semitism.

Slide 9 moves to the theme of my talk. I begin (Slide 10) by referring to a paper, published in the Lancet in 2009, in which Paul Glasziou and I estimated that 85% of the massive annual investment in medical research is being wasted. That paper led us to be invited by the Lancet to coordinate a series six papers on waste and inefficiency in research, and these will be published later this year. The first paper in the series (Slide 12) concerns issues in which Michael was interested, illustrated by the quotation from Edwin Gale (Slide 13).

The themes covered in the 5 papers on waste that follow are shown in Slide 14. From Slide 15 onwards I focus on just one source of waste, namely, waste in deciding what research to do. Slides 16-20 show the distribution of funding among different types of research, and remind us of the much greater funding for pure basic research than for applied research.

Slides 21-25 draw attention to some mismatches between what users of research want and what researchers are doing. Slide 27 gives an example of researchers ignoring outcomes that patients rate as important, and Slides 28-32 provide information about initiatives endeavouring to address these mismatches.

Slides 33-42 refer to another important source of waste in deciding what research to do, namely, not assessing systematically what is already known before embarking on additional (primary) research. Slides 43-48 provide an example of how choices for research can and should be organised to reduce waste.

In Slide 50, the late lamented Alessandro Liberati reminds us of the need for researchers to take account of the needs of patients and the public. This was a matter about which Michael felt strongly. Not long before he died he sent me (Slide 51) a 1909 paper by the Irish writer George Bernard Shaw (Slide 52), in which Shaw suggests that "it is important to give every doctor an interest in educating the public scientifically". This was a message developed by Michael in his posthumously published paper 'The Era of Enlightenment Ends with the Golden Calf' (Slide 53).

Slides 54-64 refer to ways in which I, Gerd Antes and others in the Testing Treatments *interactive* Editorial Alliance are trying to address George Bernard Shaw's and Michael Berger's call to engage patients and the public (including my grand-daughter!) in evaluating and shaping the medical research agenda.

Finally, had I been able to reach Duesseldorf in time to have given my talk, I might have read out the following excerpt from the paper by George Bernard Shaw to which Michael had introduced me. I think it was probably one of the passages that prompted Michael sent me the paper. It reminded me of the outrageous ousting of Peter Sawicki from IQWiG:

> "The position [of the medical officer of health] was a most independent and responsible one compared to that of a private practitioner. For example, he was judged altogether by the vital statistics of his district. [His] income did not get larger when the district got sick. The private practitioners' [income] did. They revelled in an epidemic. I remember going through one smallpox epidemic. Vaccination raged: you could see the private practitioners getting new ties and new hats. When the death rate went up they always looked better off and happier. That was not the case with the medical officer of health: he looked more worried: it was a bad time for him. From time to time the question of his salary came before the borough council. There was always a fight, because you could not get the ordinary borough councillor to understand why several hundred [pounds] a year should be paid to a doctor who gave no bottles [drugs]. But there was only one point upon which it could be argued, and that was the vital statistics of the district. Then [the medical officer of health] was independent of those borough councillors: they had no power to dismiss him.... I take it the medical officer of health is in an ideal position – the Socialist position – the position that one wants Socialism to place all doctors in."

Michael Berger was a rare exemplar within medicine: a physician with both a respect for scientific evidence and an admirable moral compass. I wish I had known him better and that he was still with us.

State of the Art Lecture
Title: **Evidence-based Medicine and Diabetes: The Cochrane Review Group Movement**

Day: **18. September 2000** Time: **17:00 - 18:00 Hall E** (Oranim 2+3)

Chairperson:

17:00 - 17:10

Prof. Michael Berger
Klinik für Stoffwechselkrankheiten und Ernährung
Heinrich-Heine Universität
Postfach 10 10 07
D-40001 Düsseldorf
Germany
Tel: +49-211-8117812
Fax: +49-211-8118772
bergermi@uni-duesseldorf.de

Speakers:	**Titles**:
17:10 - 17:35	***Dr. Bernd Richter*** Klinik für Stoffwechselkrankheiten und Ernährung Heinrich-Heine Universität Postfach 10 10 07 D-40001 Düsseldorf Germany Tel: +49-211-8118773 Fax: +49-211-8118772 richterb@uni-duesselsdorf.de
17:35 – 18:00	***Dr. Ian Chalmers*** Director The UK Cochrane Centre Summertown Pavilion Middle Way Oxford OX2 7LG United Kingdom Tel: +44-1865-516300 Fax: +44-1865-516311 ichalmers@cochrane.co.uk

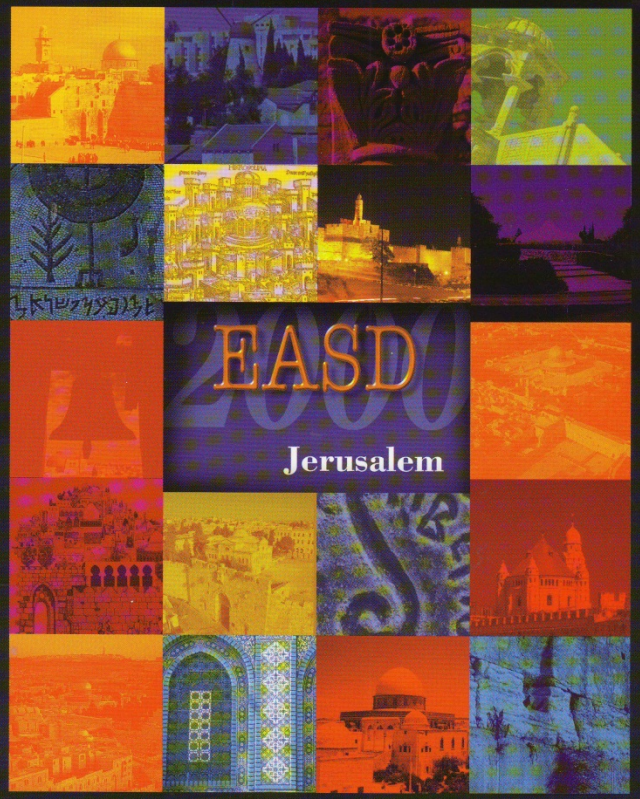
Dear Michael

EASD Annual Meeting, Jerusalem, 18 September 2000

I have decided that I must withdraw from my agreement to make a presentation in the session that you are chairing on Monday 18 September in Jerusalem. As you know, as a non-clinician, I have been ambivalent about my participation from the outset. My ambivalence increased on receipt of the conference programme last month. I could not see any mention of the session you are chairing, in which I was to have made a contribution. The other thing that made me very angry was an outrageous map on page 42. Although I cannot imagine that there will be many people who will regard the map as an affront, I do.

PROGRAMME OF SYMPOSIA

on the Occasion
of the 36th Annual Meeting of the European Association
for the Study of Diabetes



Jerusalem, Israel, 17-21 September, 2000

Visit our website: www.kenes.com/easd

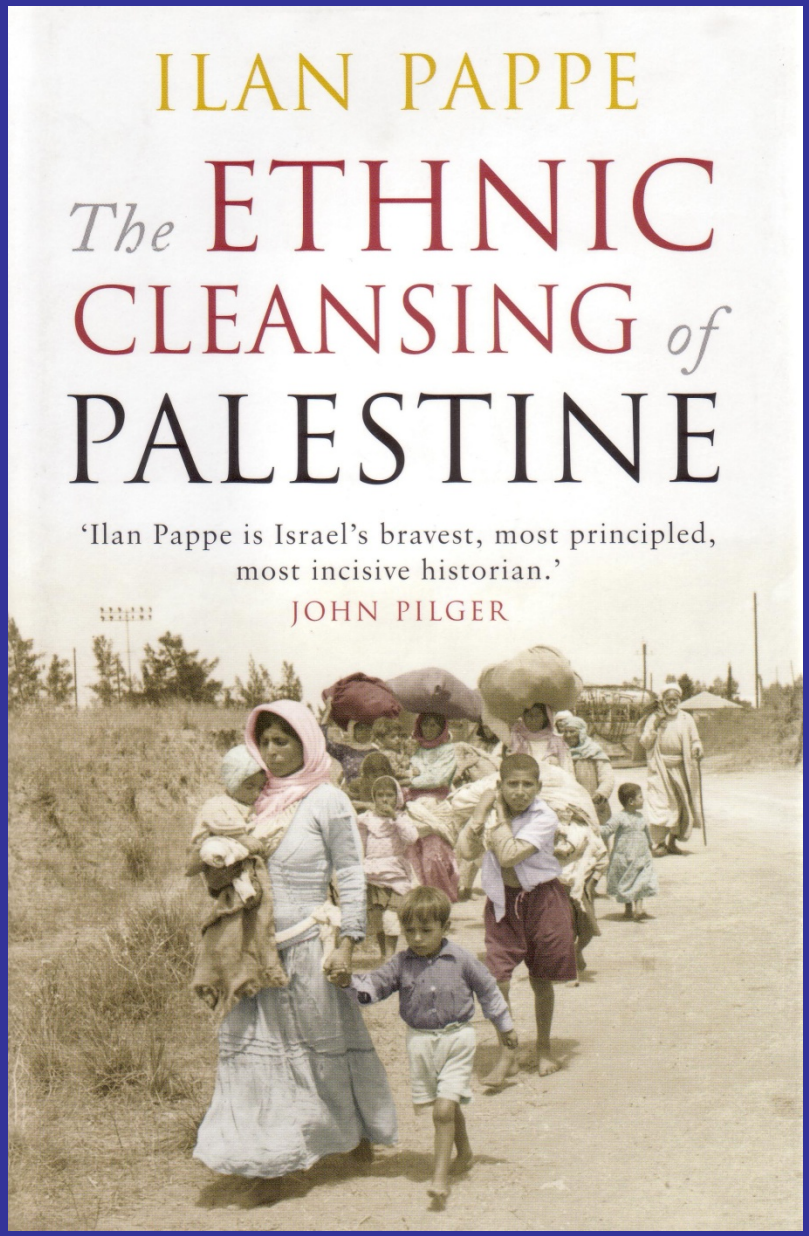
ISRAEL

Palestinian and Jewish land in 1946

UN Partition Plan 1946

1947 – 1967

2004+


ILAN PAPPE
The ETHNIC CLEANSING of PALESTINE
'Ilan Pappe is Israel's bravest, most principled, most incisive historian.'
JOHN PILGER

1947-1949

Sheikh Jarrah, occupied East Jerusalem

Reducing waste in deciding what research to do

Avoidable waste in the production and reporting of research evidence

Iain Chalmers, Paul Glasziou Lancet 2009; 374: 86–89

Questions relevant to clinicians & patients?	Appropriate design and methods?	Accessible full publication?	Unbiased and usable report?
Low priority questions addressed Important outcomes not assessed Clinicians and patients not involved in setting research agendas	Over 50% studies designed without reference to systematic reviews of existing evidence Over 50% of studies fail to take adequate steps to reduce biases, e.g. unconcealed treatment allocation	Over 50% of studies never published in full Biased under-reporting of studies with disappointing results	Over 30% of trial interventions not sufficiently described Over 50% of planned study outcomes not reported Most new research not interpreted in the context of systematic assessment of other relevant evidence
	50 %	50 %	50 %

85% Research waste = over $85 Billion / year

Lancet series of six papers on

Waste and inefficiency in research:
problems, causes, and recommendations

Introductory paper

Economic factors, political factors and social and cultural factors

Malcolm Macleod
University of Edinburgh

Conflicts of interest in guideline panel members

A change in the culture of medicine is needed; legislation is not enough

Edwin A M Gale emeritus professor of diabetic medicine, Diabetes and Metabolism, Learning and Research, Southmead Hospital, Bristol BS10 5NB, UK
edwin.gale@bristol.ac.uk

Cite this as: *BMJ* 2011;343:d5728
doi: 10.1136/bmj.d5728

Let us therefore forget the hand wringing and confront the reality of the world in which we live. Academic and non-academic medicine are pervaded by conflicts of interest, and too many people benefit from the situation for this to be openly acknowledged. How much simpler it is to locate the problem in the conscience of individual clinicians. Meanwhile, and at a time when the US economy staggers under the burden of healthcare, the public purse continues to pour a river of gold into the revenues of the drug industry. Legislation will not change the situation, for the smart money is always one step ahead. What is needed is a change of culture in which serving two masters becomes as socially unacceptable as smoking a cigarette. Until then, the drug industry will continue to model its behaviour on that of its consumers, and we will continue to get the drug industry we deserve.

Waste and inefficiency in research:

problems, causes, and recommendations (2013)

Questions relevant to users of research?	Appropriate research design, conduct and analysis?	Efficient research regulation and delivery?	Accessible, full research reports?	Unbiased and usable reports?
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Research waste

Avoidable waste in deciding what research to do, Lancet series, 2013

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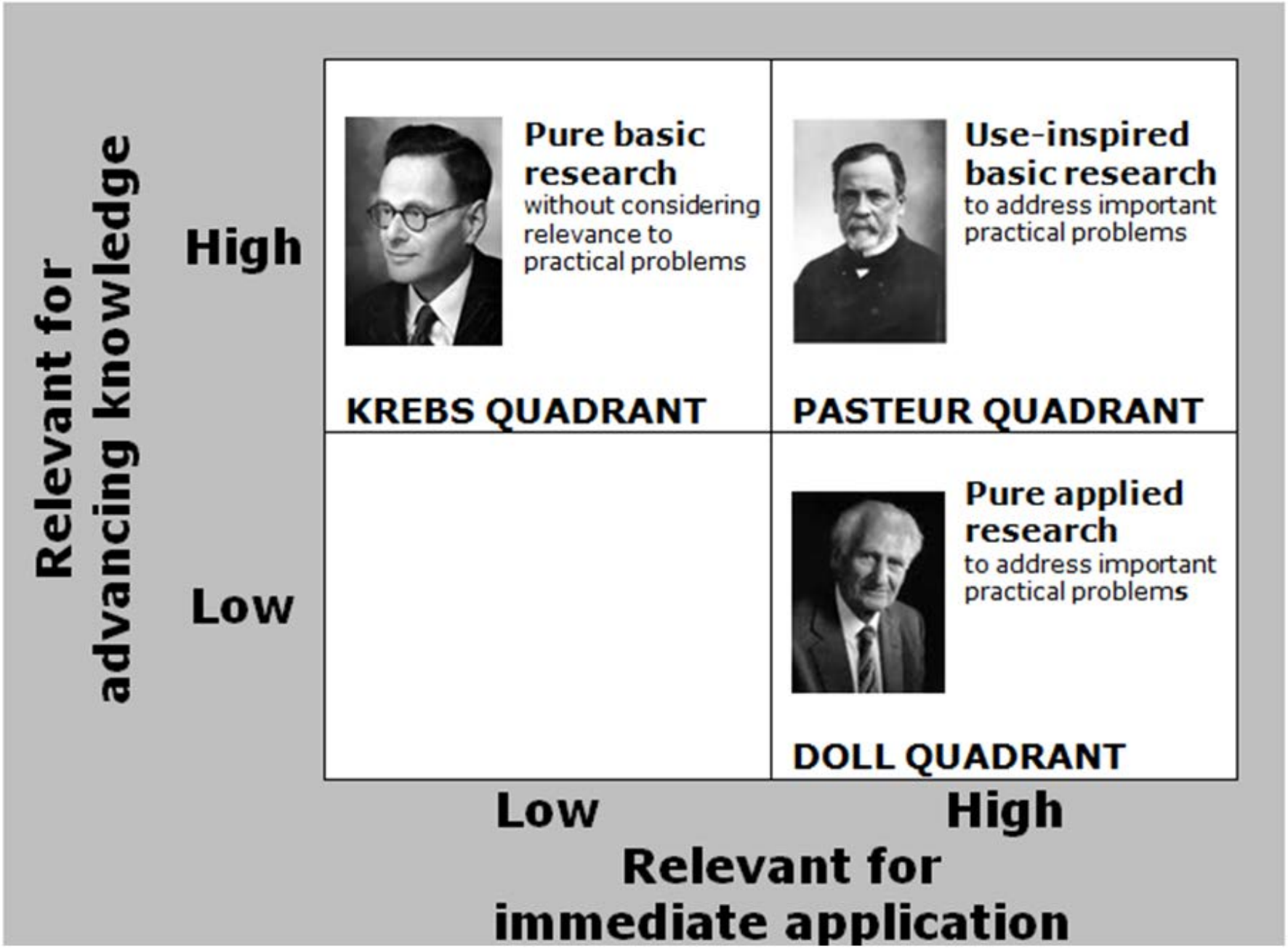
Research waste



after Donald Stokes, *Pasteur's Quadrant*, 1997

An example of the dividends of **Pure basic research**

Akira Endo (遠藤 章). Japanese biochemist whose research into the **relationship between fungi and cholesterol biosynthesis** led to the development of statin drugs.

An example of the dividends of **Use-inspired basic research**

Malcolm Macleod and colleagues. A systematic review of the effects of a large number of drugs in **experimental autoimmune encephalitis in rodents as a model for multiple sclerosis** identified three off-patent drugs worthy of assessment in people with primary progressive multiple sclerosis.

An example of the dividends of **Pure applied research**

Ian Roberts and his colleagues did the CRASH trial to address uncertainty about the effects of giving systemic **steroids for people with acute traumatic brain injury**, a treatment that had been in use for over three decades.

Use of (increased overall) public/charitable funds for medical research, by category of investment, 2006 and 2010 (UK Clinical Research Collaboration).

Type of research (categories included)	**2006**	**2010**
Pure basic (aetiology and underpinning)	68.6	59.4
Use-led basic (treatment development)	8.5	10.7
Pure applied (prevention, detection & diagnosis, treatment evaluation, disease management, health services)	22.9	29.9

Avoidable waste in deciding what research to do, Lancet series, 2013

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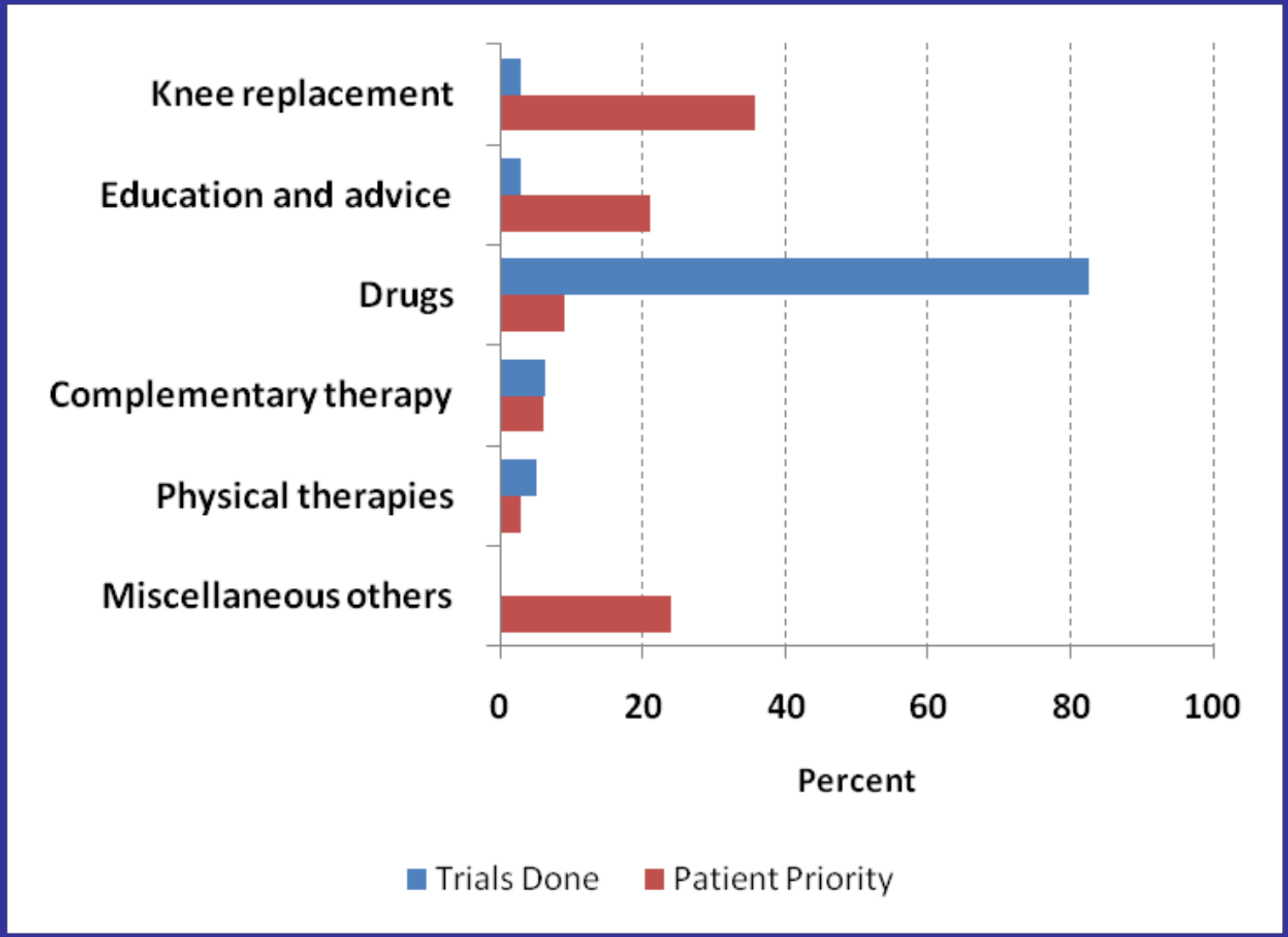
Research waste

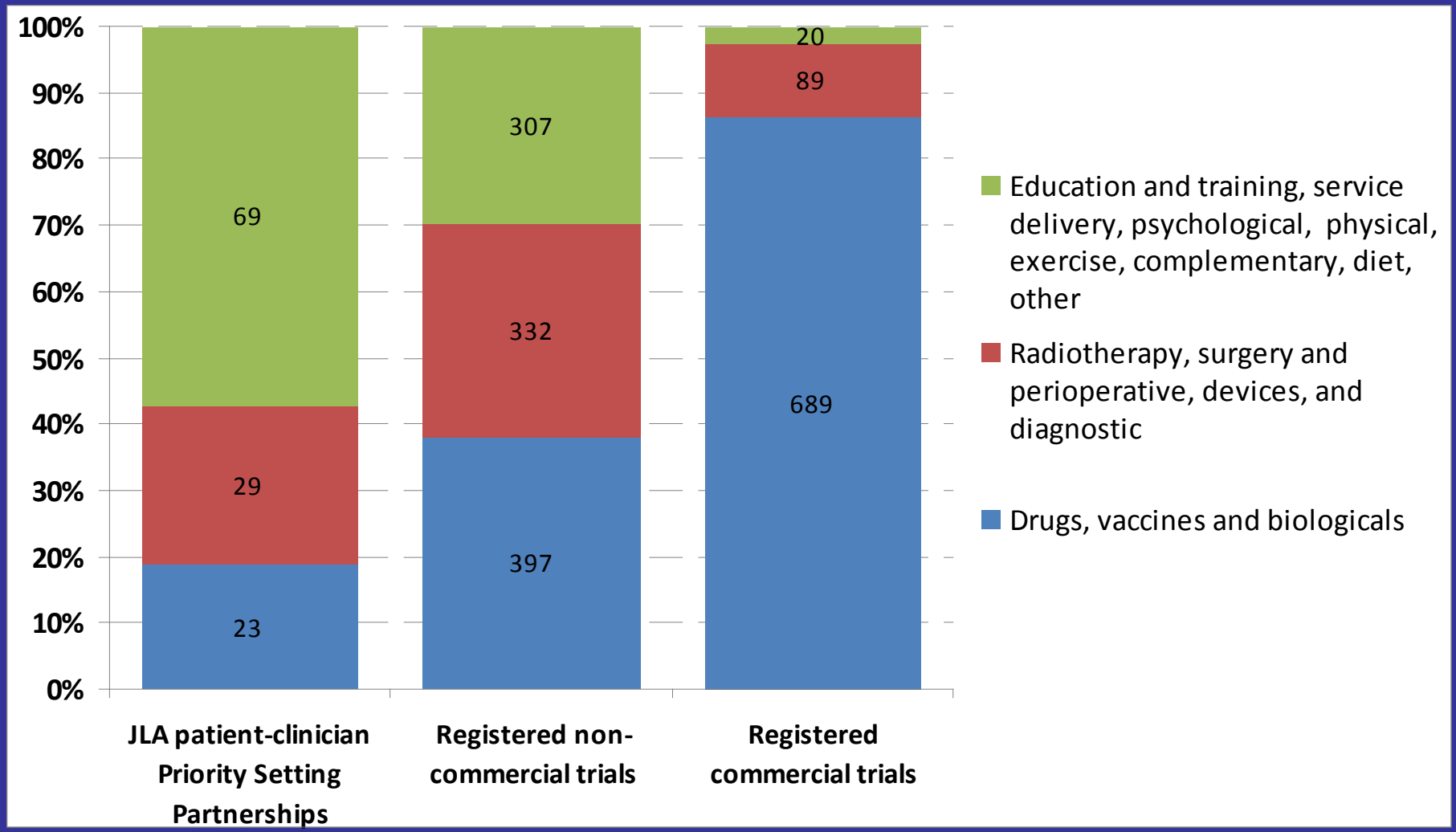
Sources of waste in deciding what research to do (1)

Low priority questions addressed

Low priority questions addressed in research on treatments for osteoarthritis of the knee

Tallon, Chard and Dieppe. Lancet, 2000.





Interventions mentioned in research priorities identified by James Lind Alliance patient-clinician Priority Setting Partnerships, and among registered trials, 2003-2012. (Crowe et al. forthcoming)

Research priority themes [across asthma, incontinence, vitiligo, eczema, stroke, prostate cancer, schizophrenia, aspects of balance, and type 1 diabetes]

- Assessment of **long-term effects** (wanted and unwanted) of treatments
- Assessment of **safety and adverse effects** of treatments
- Assessment of **complementary and non-prescribed treatments**
- Assessment of strategies to improve **early diagnosis and treatments**, and **harmonisation of practice**
- Assessment of the effectiveness and safety of **self-care**

Sources of waste in deciding what research to do (2)

Important outcomes not assessed

User-relevant outcomes not measured in research on treatments for rheumatoid arthritis

OMERACT 7 Workshop

Incorporating the Patient Perspective into Outcome Assessment in Rheumatoid Arthritis — Progress at OMERACT 7

JOHN R. KIRWAN, SARAH E. HEWLETT, TURID HEIBERG, ROD A. HUGHES, MAGGIE CARR, MAGGIE HEHIR, TORE K. KVIEN, PATRICIA MINNOCK, STANTON P. NEWMAN, ENID M. QUEST, ERIK TAAL, and JANNEY WALE

Priority treatment outcome from a survey of patients with rheumatoid arthritis **was not pain**

It was fatigue

Welcome to the COMET Initiative website

The COMET (Core Outcome Measures in Effectiveness Trials) Initiative brings together people interested in the development and application of agreed standardised sets of outcomes, known as 'core outcome sets'. These sets represent the minimum that should be measured and reported in all clinical trials of a specific condition, and are also suitable for use in clinical audit or research other than randomised trials. The existence or use of a core outcome set does not imply that outcomes in a particular trial should be restricted to those in the relevant core outcome set. Rather, there is an expectation that the core outcomes will be collected and reported, making it easier for the results of trials to be compared, contrasted and combined as appropriate; while researchers continue to explore other outcomes as well. COMET aims to collate and stimulate relevant resources, both applied and methodological, to facilitate exchange of ideas and information, and to foster methodological research in this area.

Search COMET database

The COMET database currently contains **179** references of planned, ongoing and completed work.

Enter Keyword | Search

The keyword used for the search will be compared with study title, abstract and author's surname.

BMJ Blogs

We maintain a BMJ blog about COMET activities and outputs. Our most recent blog is shown below:

Development of a core outcome set for bariatric surgery
James Hopkins and Jane Blazeby
Wednesday 01 August, 2012

Follow us on Twitter

Help, I want to...

- Search COMET
- Send general feedback / enquiry
- Register a new project / study
- Report a missing study

Upcoming events

- ISOQOL 19th Annual Conference, 24-27 October, Budapest, Hungary
- Visit website

?Rx DUETs

The UK Database of Uncertainties about the Effects of Treatments

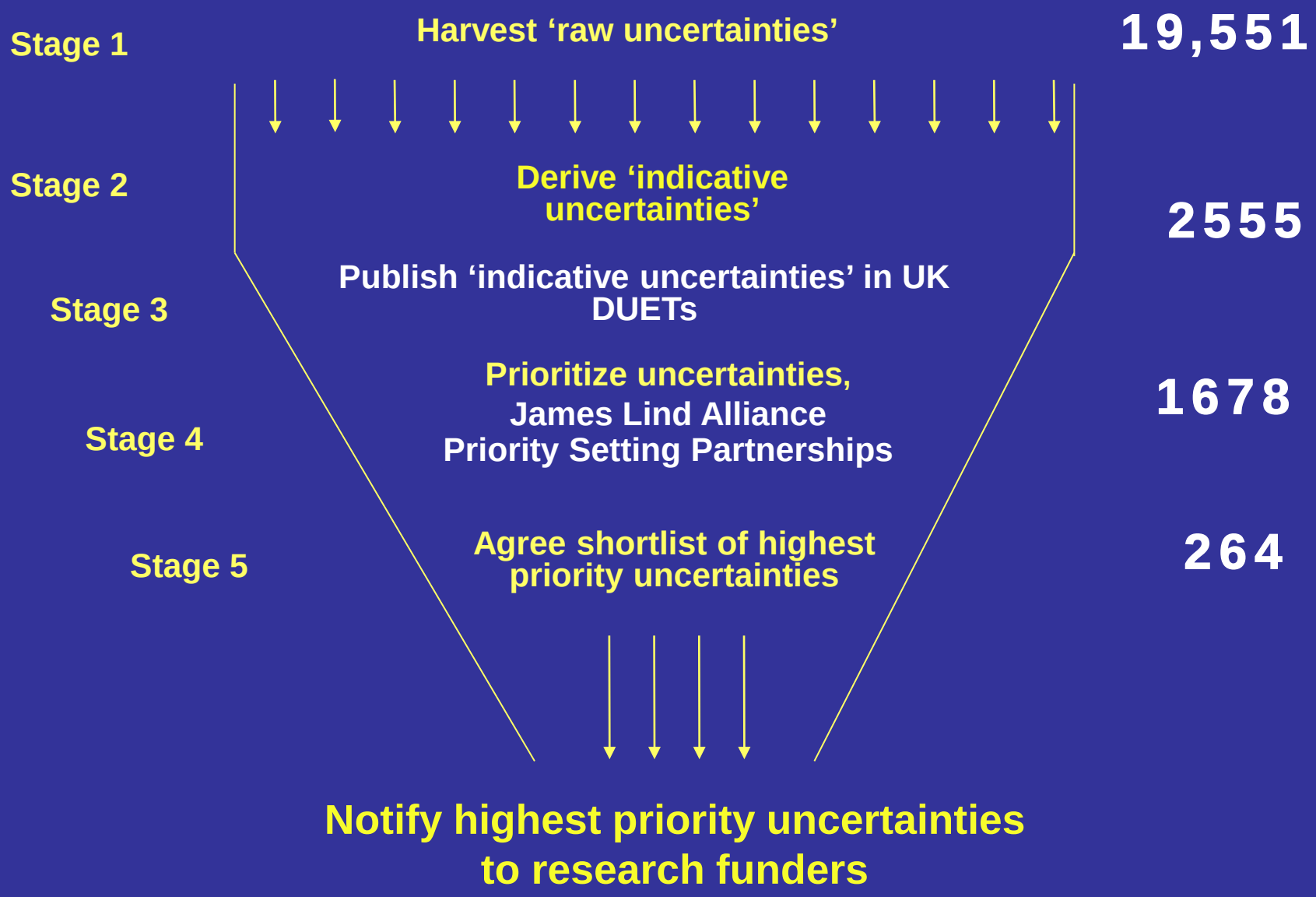
To publish uncertainties about the effects of treatments which cannot currently be answered by referring to relevant and reliable, up-to-date systematic reviews of existing research evidence

The James Lind Alliance

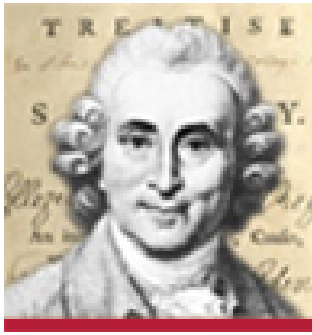
Tackling treatment uncertainties together

To promote Priority Setting Partnerships involving patients and clinicians to identify and promote their shared priorities for therapeutic research

Identifying and prioritising uncertainties about the effects of treatment



Notify highest priority uncertainties to research funders



The James Lind Alliance

Priority Setting Partnerships

NETSCC becomes the new home for the JLA PSPs

This month completes the transition of the work of the James Lind Alliance (JLA) Priority Setting Partnerships (PSPs) to the NIHR Evaluation, Trials and Studies Coordinating Centre (NETSCC). The JLA PSPs identify and prioritise treatment uncertainties which they agree are the most important for research.

www.jla.nihr.ac.uk

Chalmers I. Lancet 2000;356:774

A patient-led good controlled trials guide

Now that an international meta-register of controlled trials has been established (www.controlled-trials.org accessed, Aug 9, 2000), the framework exists for creating a consumer-led, electronic good controlled trials guide, to help people who are considering participating in trials to make well-informed choices.

Consumer commentaries on trials in the register could cover, for example, the importance of the questions being addressed, whether these had already been answered satisfactorily by previous research, whether the design of the study was scientifically and ethically robust, whether the primary outcomes chosen mattered to patients, and whether arrangements were in place for communicating the results of the research to those who had participated in it. Mobilisation of consumer influence in this way might help to reorientate the clinical research agenda to serve the interests of patients better.

Avoidable waste in deciding what research to do, Lancet series, 2013

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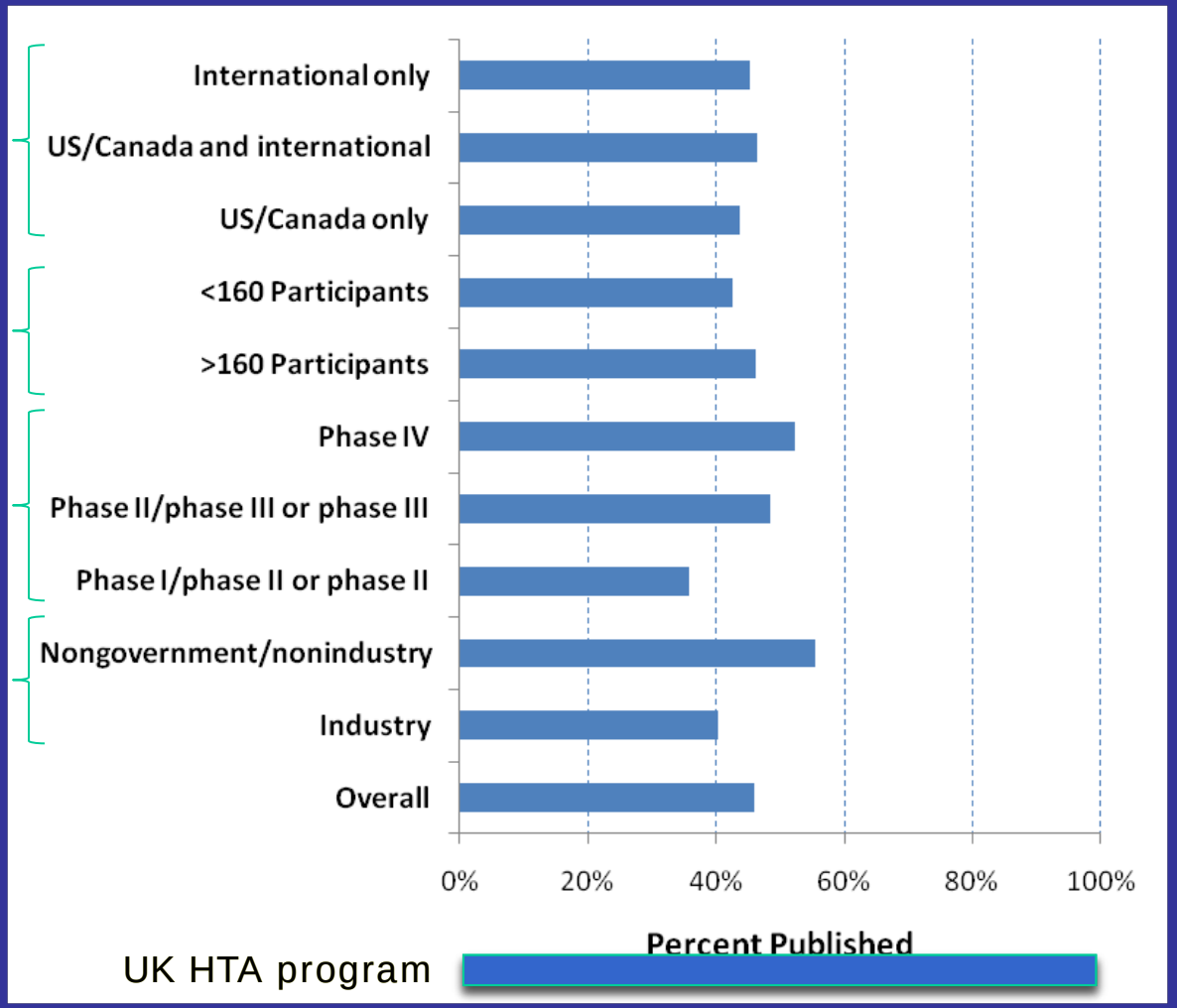
Research waste

Sources of waste in deciding what research to do (2)

Studies designed without reference to systematic reviews of existing evidence, published and unpublished

Proportion (%) of clinical trials registered by 1999 and published by 2007

(from Ross et al. PLoS Med 2009;6(9): e1000144).



"It is essential that existing sources of evidence, especially systematic reviews, are considered carefully prior to undertaking research...

Research which duplicates other work unnecessarily, or which is not of sufficient quality to contribute something useful to existing knowledge, is in itself unethical."

(Department of Health 2001)

Analysis of **Introduction sections** of all reports of controlled trials in May 2009 and May 2012 in *Lancet, New Eng J Med, BMJ, JAMA, & Ann Int Med* (Clarke et al. forthcoming)

	2009 (n=29)	**2012** (n=35)
First trial addressing the question	**5**	**5**
Contains an updated systematic review, which was used to inform the design of a new trial	**1**	**1**
Discusses a relevant systematic review, which was not used to inform the design of a new trial	**10**	**13**
Refers to other randomized trials	**4**	**10**
Although not first trial, does not refer to other randomized trials	**9**	**6**

Problems in use-inspired basic research

STUDIES IN ANIMALS

Nimodipine in Animal Model Experiments of Focal Cerebral Ischemia

A Systematic Review

J. Horn, MD; R.J. de Haan, PhD; M. Vermeulen, MD; P.G.M. Luiten, PhD; M. Limburg, MD

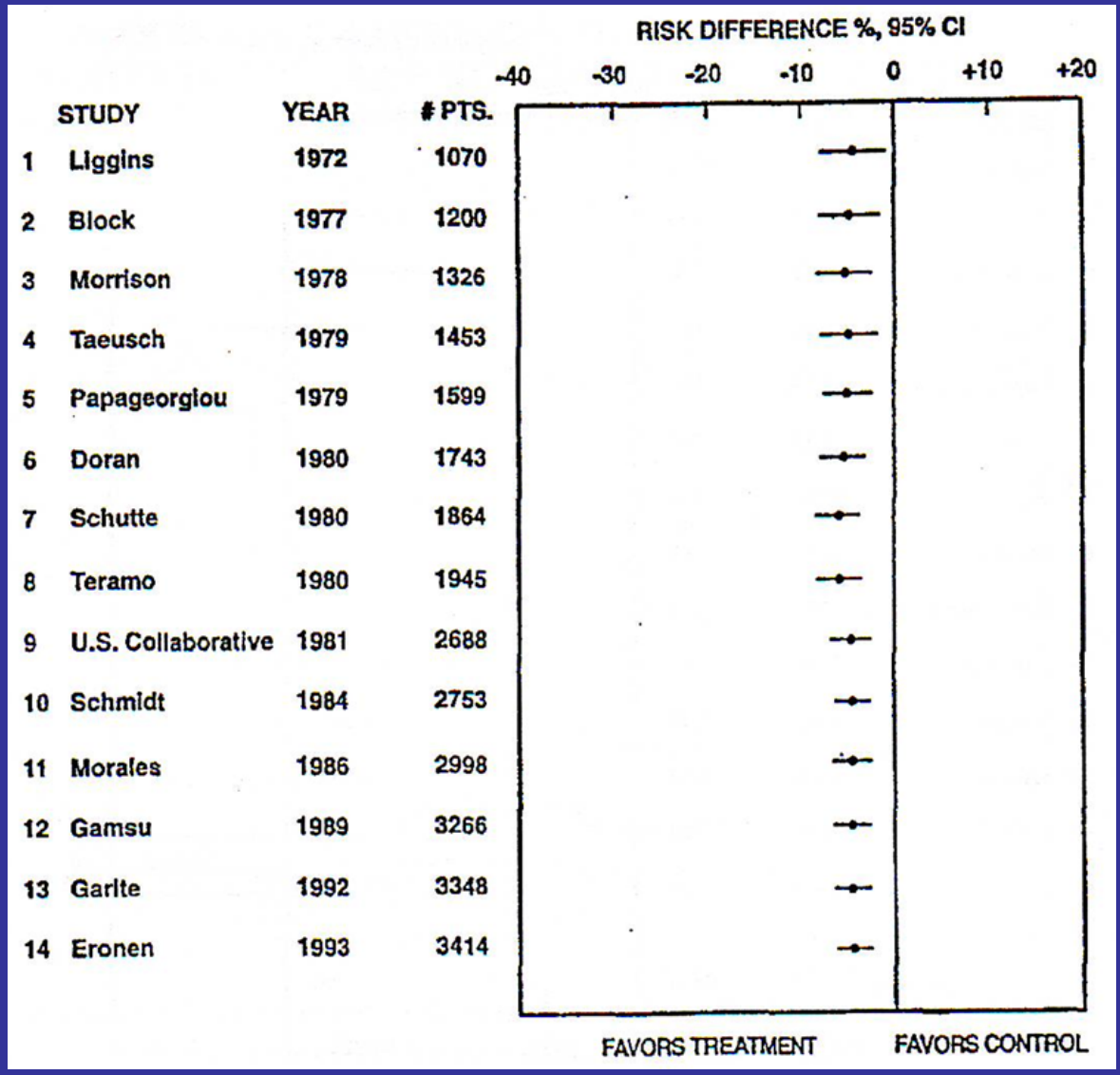
20 animal studies: "The results of this review did not show convincing evidence to substantiate the decision to perform trials with nimodipine in large numbers of patients.

Stroke 2001;32:2433-8.

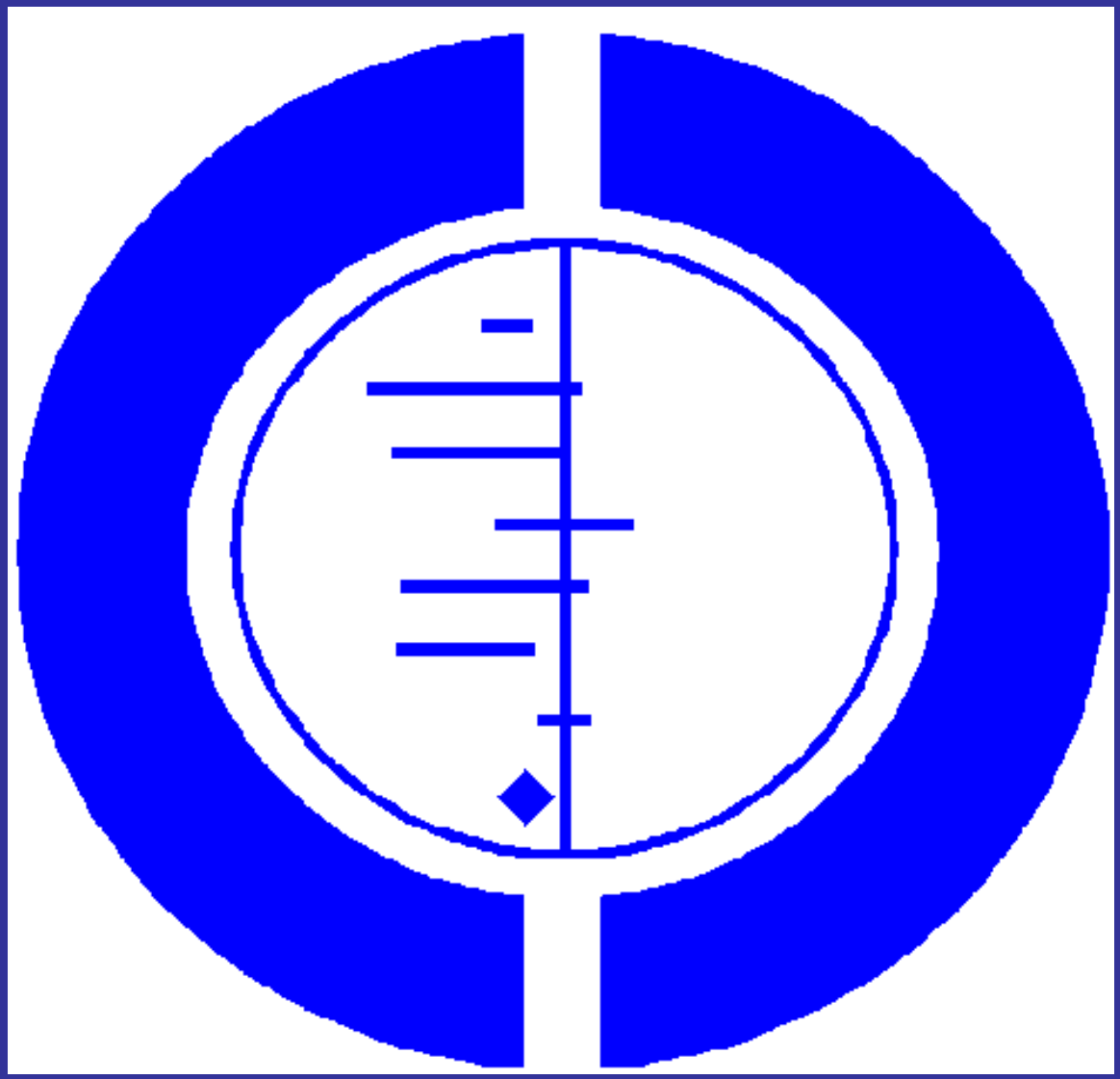
STUDIES IN HUMANS

Horn J, Limburg M.
Calcium antagonists for acute ischemic stroke.
The Cochrane Database of Systematic Reviews, 2000

"46 trials were identified of which 28 were included (7521 patients). No effect of calcium antagonists on poor outcome at the end of follow-up (OR 1.07, 95% CI 0.97/1.18), or on death at end of follow-up (OR 1.10, 95% CI 0.98/1.24) was found."



Cumulative meta-analysis of randomized trials showing effect on early neonatal mortality of maternal corticosteroid administration (Sinclair 1995)



The Cochrane Collaboration

Resources used on redundant research

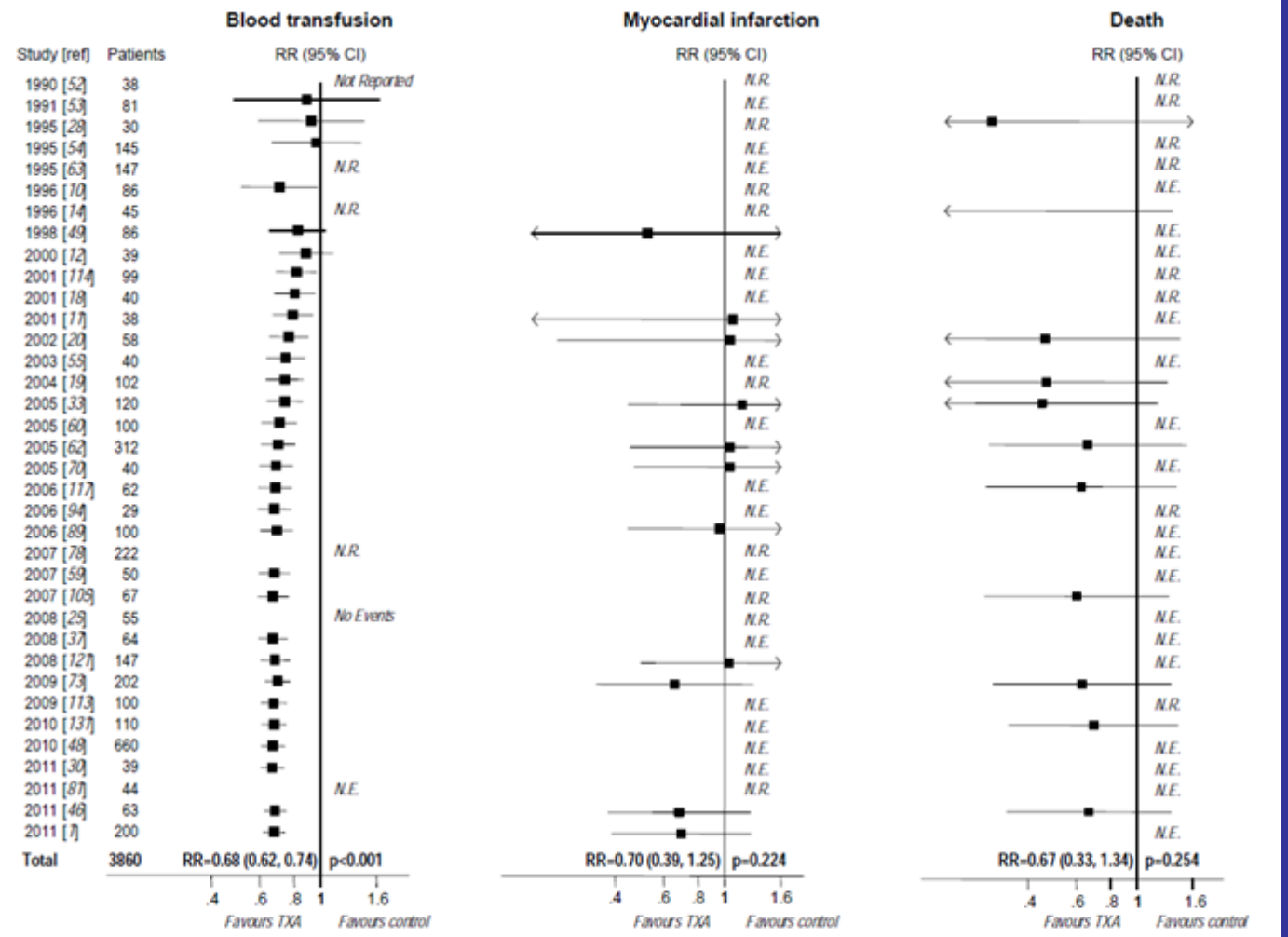
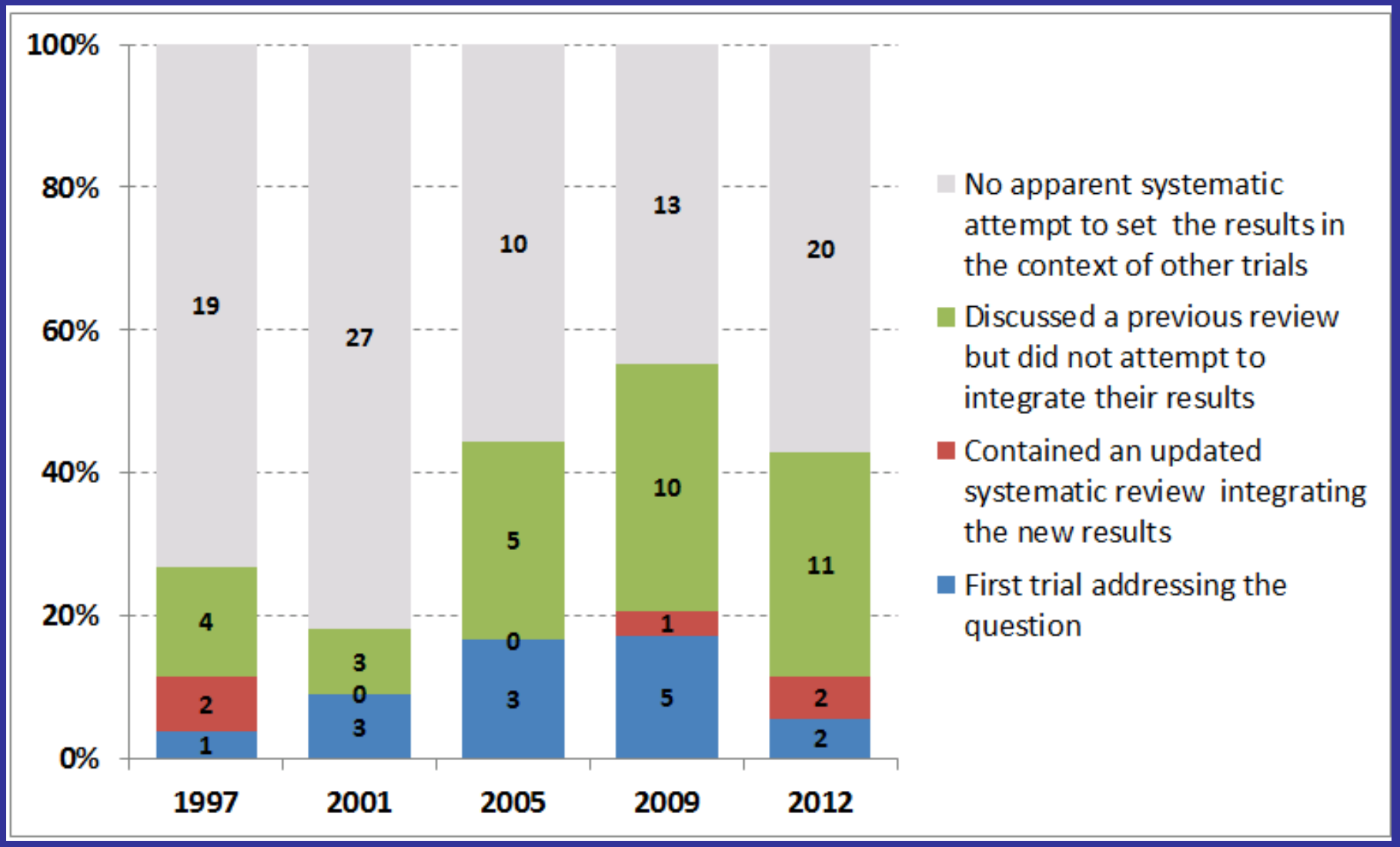


Figure 4: Cumulative meta-analyses of 36 trials showing that the effects of tranexamic acid on the use of blood transfusion were established a decade ago, but that 20 trials and ten years later the effects of the drug on myocardial infarction and death remained uncertain (after Ker et al. 2012).



How often are the results of new trials set in context in the Lancet, NEJM, BMJ, JAMA, Ann Intern Med?

A systematic review of existing knowledge

Corticosteroids in acute traumatic brain injury: systematic review of randomised controlled trials

Philip Alderson, Ian Roberts

Alderson P, Roberts I (1997). *BMJ* 314:1855-9; and *Cochrane Database of Systematic Reviews*.

The review revealed important uncertainty about whether systemic steroids did more good than harm.

	Steroid	Control	Weight (%)	Odds ratio (95% confidence interval)
Ransohoff 1972	9/17	13/18	3.1	0.43 (0.11 to 1.76)
Alexander 1972	16/55	22/55	8.0	0.62 (0.28 to 1.36)
Faupel 1976	16/67	16/28	8.9	0.24 (0.09 to 0.60)
Cooper 1979	26/49	13/27	4.1	1.22 (0.48 to 3.12)
Hernesniemi 1979	35/81	36/83	10.4	0.99 (0.54 to 1.84)
Pitts 1980	114/201	38/74	12.4	1.24 (0.73 to 2.12)
Saul 1981	8/50	9/50	3.9	0.87 (0.31 to 2.47)
Braakman 1983	44/81	47/80	11.1	0.83 (0.45 to 1.56)
Giannotta 1984	34/72	7/16	3.1	1.15 (0.39 to 3.42)
Dearden 1986	33/68	21/62	5.8	1.84 (0.91 to 3.74)
Zagara 1987	4/12	4/12	1.4	1.00 (0.18 to 5.46)
Gaab 1994	19/133	21/136	9.2	0.91 (0.47 to 1.79)
Grumme 1995	38/175	49/195	18.7	0.83 (0.51 to 1.34)
Total	396/1061	296/836	100	0.91 (0.74 to 1.12)

(χ^2 =15.99; df=12; Z=0.89)

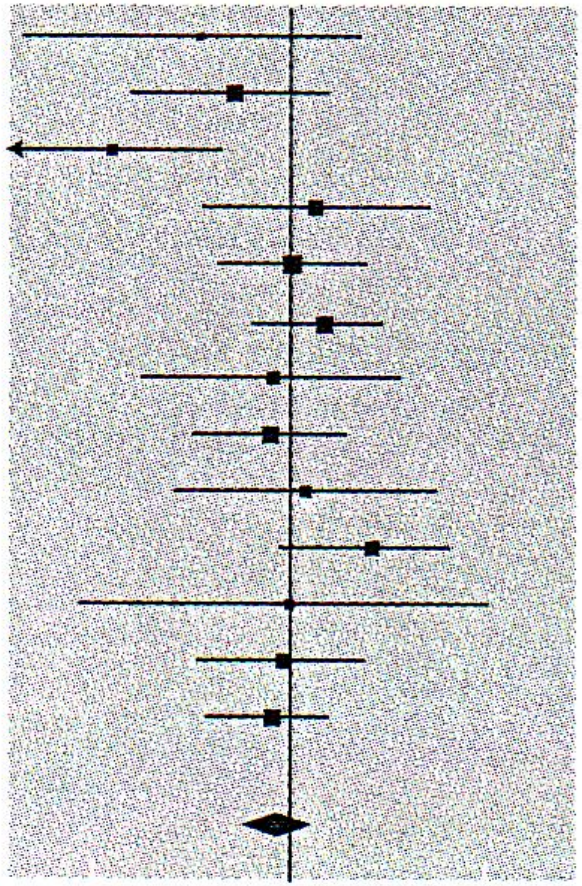


Fig 1 Summary odds ratio for death at end of study

Addressing an important uncertainty

Because the systematic review and a survey of clinical practice had revealed important uncertainty,

a large, publicly-funded, multicentre randomized trial was organised;

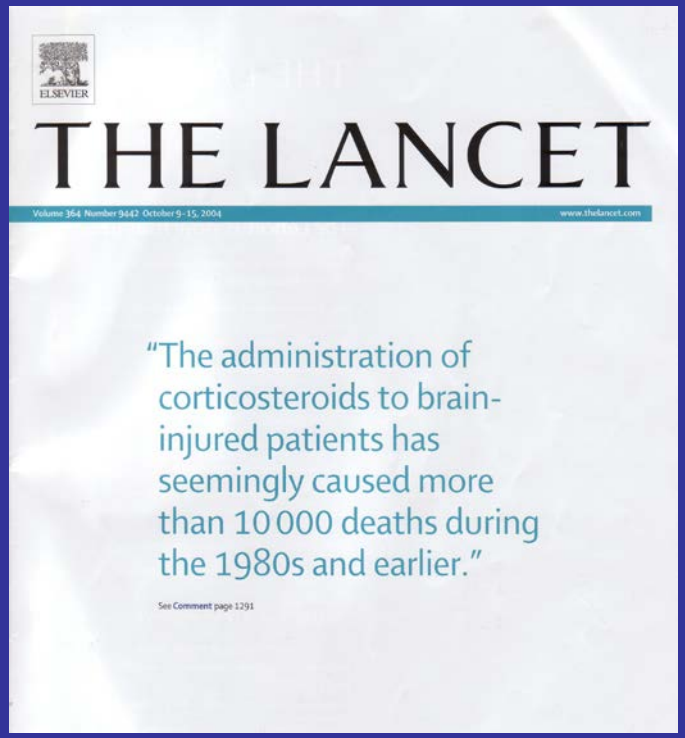
the trial was registered prospectively;

the protocol for the trial was published

Effect of intravenous corticosteroids on death within 14 days in 10 008 adults with clinically significant head injury (MRC CRASH trial): randomised placebo-controlled trial

*CRASH trial collaborators**

Lancet 2004;364:1321-28



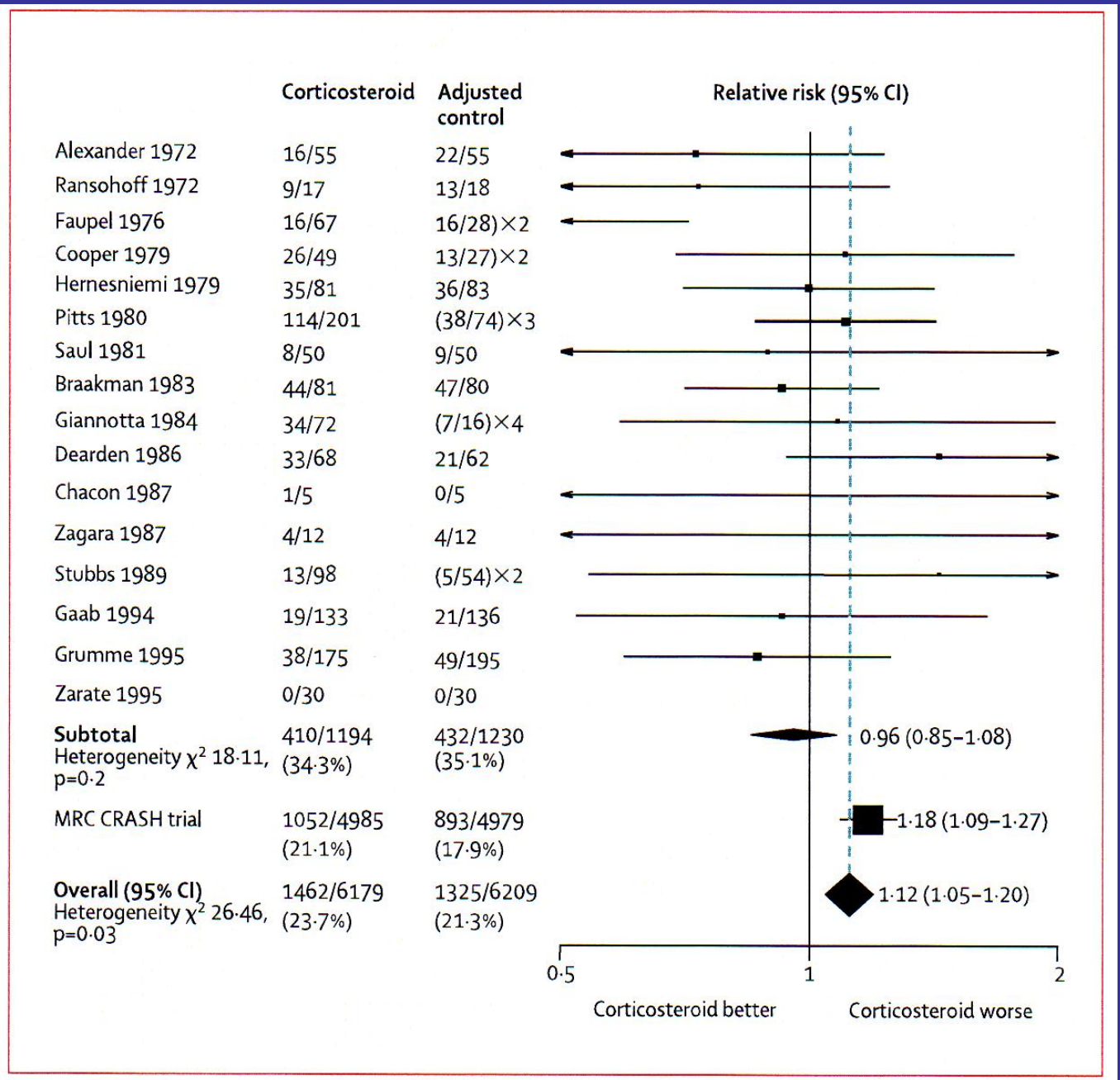


Figure 5: **Updated meta-analysis of effect of corticosteroids on death after head injury**

- **The report of the CRASH trial is exemplary because:**

- it refers to current uncertainty about the effects of a treatment, shown in a **systematic review of all the existing evidence,** and in **variations in clinical practice**
- it notes that the **trial was registered and the protocol published** prospectively
- it sets the new results in the context of **an updated systematic review of all of the existing evidence**
- it provides readers with **all the evidence needed for action** to prevent thousands of iatrogenic deaths

Avoidable waste in deciding what research to do, Lancet series, 2013

Questions relevant to users of research?	Appropriate research design, conduct and analysis?	Efficient research regulation and delivery?	Accessible, full research reports?	Unbiased and usable reports?
Low priority questions addressed Important outcomes not assessed Over 50% studies designed without reference to systematic reviews of existing evidence	Over 50% of studies fail to take adequate steps to reduce biases Studies with inadequate statistical power Inadequate replication of initial observations	Hyper-regulation of research Inefficient delivery of research Poor re-use of data Failure to promote evaluative research as an integral element of good clinical practice	Over 50% of studies never published in full Biased under-reporting of studies with disappointing results Biased reporting of data within studies	Over 30% of trial interventions not sufficiently described Over 50% of planned study outcomes not reported Most new research not interpreted in the context of systematic assessment of other relevant evidence

Research waste

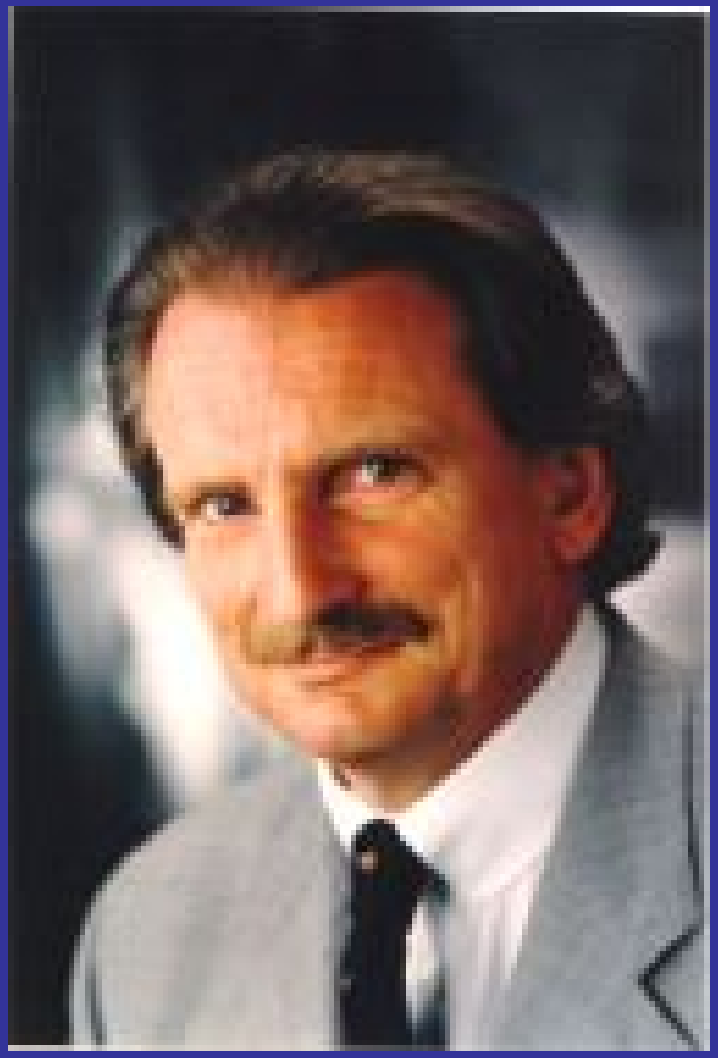
Need to realign patient-oriented and commercial and academic research

Alessandro Liberati

www.thelancet.com Vol 378 November 19, 2011

I have had the opportunity to consider from more than one perspective the mismatch between what clinical researchers do and what patients need. I am a researcher; I have responsibility for allocating funding for research; and I have had multiple myeloma for the past decade. A few years ago I stated publicly that several uncertainties I faced at the beginning of my disease were avoidable.[3]

An essential component of any new governance strategy would be to bring together all the stakeholders, starting from an analysis of existing and ongoing research, produced independently of vested interests.



HEINRICH HEINE
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Klinik für Stoffwechselkrankheiten und Ernährung
(Direktor: Universitätsprofessor Dr. med. Dres. h.c. mult. Michael Berger)

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Internet:
E-mail: bergermi@uni-duesseldorf.de
http://www.uni-duesseldorf.de/WWW/MedFak/MDN/

Düsseldorf, April 29, 2002

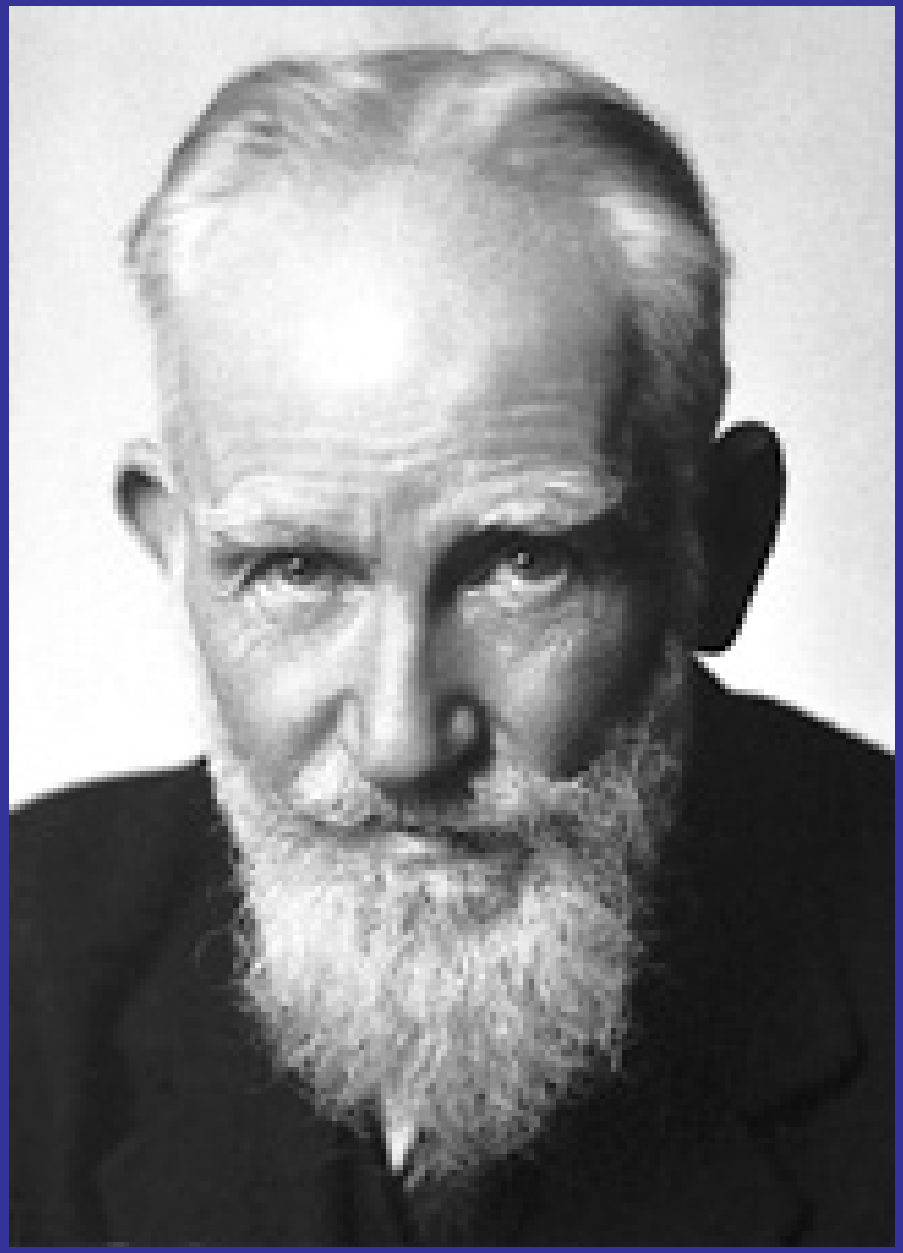
Dear Fain:

Please find enclosed the copy of
1989 paper by GBS.

Together with Bernd I'll come back
to the microbial-priming and -diversification
issue in a separate letter, shortly.

Best regards,

yours Michael.



Transactions of the
medico-legal Society
6: 202-228, 1909

THE SOCIALIST CRITICISM OF THE MEDICAL PROFESSION*

BY

G. BERNARD SHAW.

Since I have no professional qualifications of any kind I should just like to say a word as to what emboldens me to address the Society on this particular subject.

I was born in the year 1856. That does not seem—if I may judge from the expression of your faces—to convey very much to you; but if you will remember that Darwin's "Origin of Species" was published in 1859 you will understand that I belong to a generation which, I think, began life by hoping more from Science than perhaps any generation ever hoped before, and, possibly, will ever hope again. I give the date in order to get out of the minds of any of you who may entertain such an idea, that I am in any way hostile to science. Science will always be extraordinarily interesting and hopeful to me. At the present moment we are passing through a phase of disillusion. Science has not lived up to the hopes we formed of it in the 1860's; but those hopes left a mark on my temperament that I shall never get rid of till I die. Therefore I have more or less all my life concerned myself with science, because throughout my lifetime science has been very largely going wrong on social questions. I may say that almost all my life it has been my good fortune to number amongst my best friends members of the medical profession. During rather more than half my life I could not afford to pay doctor's fees at all: during the other part of my life I could afford to pay them

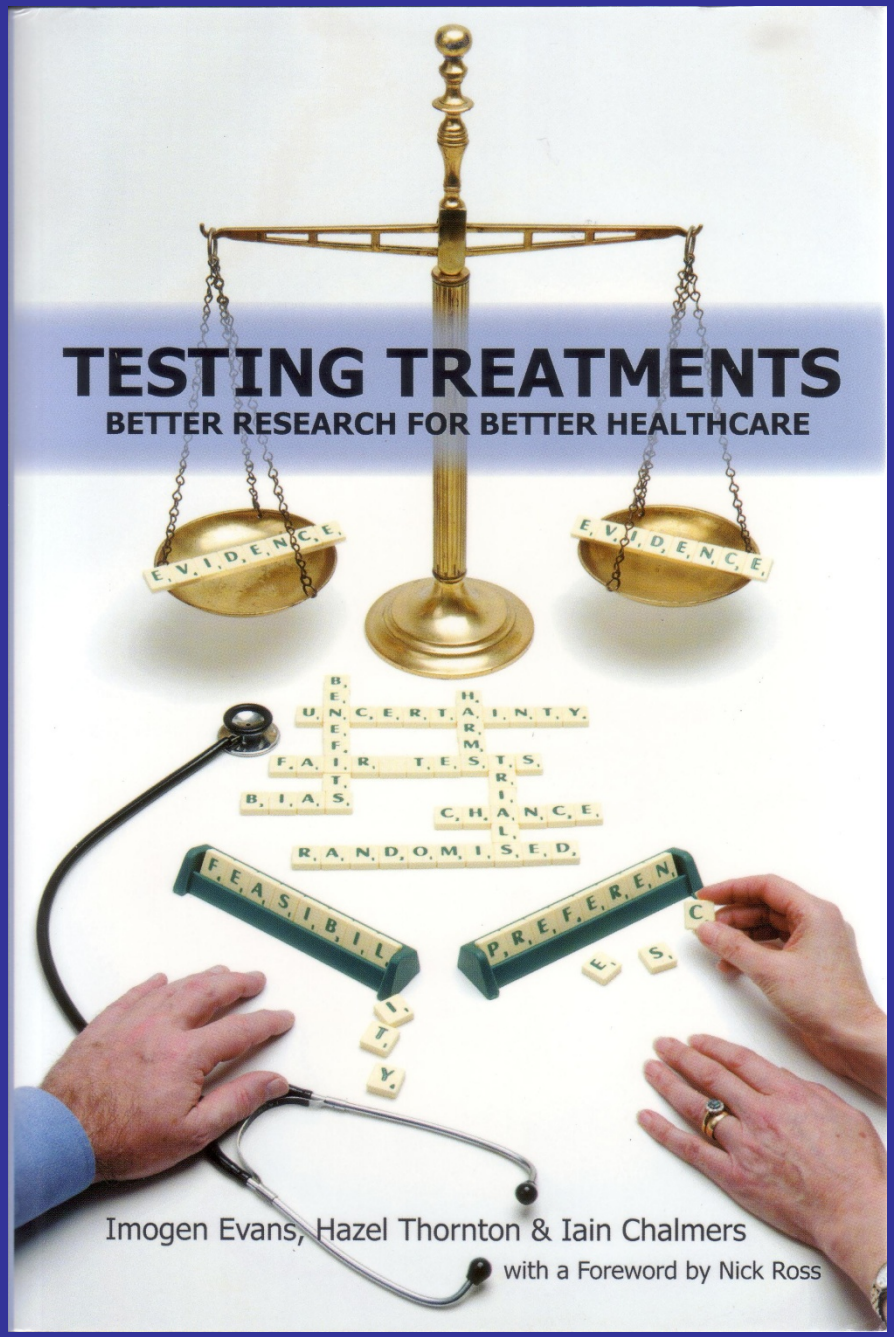
* Read before the Society on February 16th, 1909.

Medizinische
Klinik
2002;97:629–34 (Nr. 10), © Urban & Vogel, München

The Era of Enlightenment Ends with the Golden Calf

Michael Berger[1] (†)

…**the only way to go [is] the education of the public and patients** about the possibilities and the deficiencies of what medical practice and prevention can do – and what it cannot – and how any available or recommended procedure is to be evaluated for its patient-orientated benefit. **I cannot see any other way to protect the public and the individual patient from the threats to health by the new irrationality and by medico-industrial interests** as reinforced under the roof of medical utopianism."


TESTING TREATMENTS
BETTER RESEARCH FOR BETTER HEALTHCARE
EVIDENCE
EVIDENCE
BENEFITS
UNCERTAINTY
HARM
FAIR TESTS
RISK
BIAS
CHANCE
RANDOMISED
FEASIBILITY
PREFERENCES
Imogen Evans, Hazel Thornton & Iain Chalmers
with a Foreword by Nick Ross

2006

عربي (Arabic)

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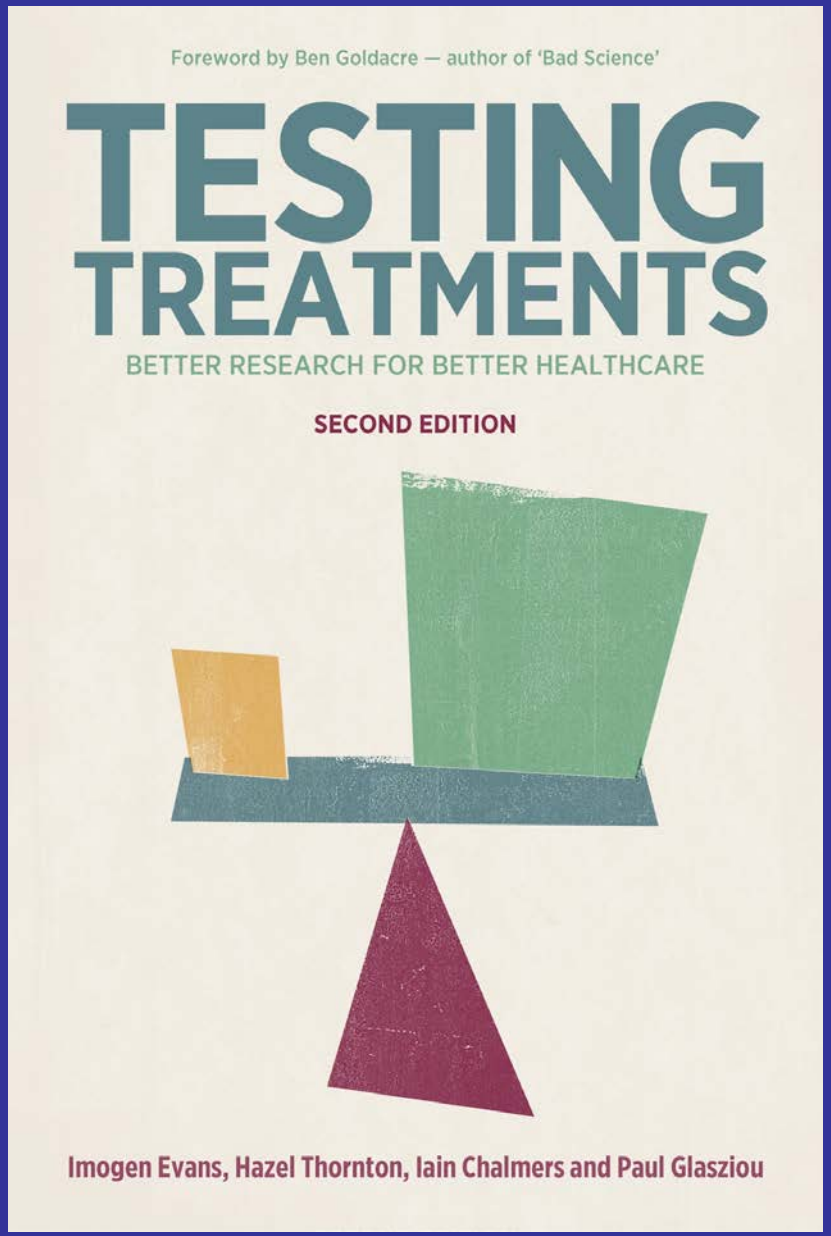
Deutsch (German)

Italiano (Italian)

Polski (Polish)

Español (Spanish)


Foreword by Ben Goldacre — author of 'Bad Science'
TESTING TREATMENTS
BETTER RESEARCH FOR BETTER HEALTHCARE
SECOND EDITION
Imogen Evans, Hazel Thornton, Iain Chalmers and Paul Glasziou

2011

Gerd Antes


WO IST DER BEWEIS?
Plädoyer für eine evidenzbasierte Medizin
IMOGEN EVANS, HAZEL THORNTON
IAIN CHALMERS, PAUL GLASZIOU
Deutsche Ausgabe herausgegeben von Gerd Antes
HUBER

AN ACTION PLAN – THINGS YOU CAN DO

Promote research on the effects of treatments…

Encourage and work with health professionals, researchers, research funders, and others who are trying to promote research addressing inadequately answered questions about the effects of treatment which you regard as important.

AN ACTION PLAN – THINGS YOU CAN DO

Promote research on the effects of treatments…

Encourage and work with health professionals, researchers, research funders, and others who are trying to promote research addressing inadequately answered questions about the effects of treatment which you regard as important.

…but only if it meets scientific and ethical principles

Agree to participate in a clinical trial only on condition (i) that the study protocol has been registered and made publicly available (ii) that the protocol refers to systematic reviews of existing evidence showing that the trial is justified; and (iii) that you receive a written assurance that the full study results will be published, and sent to all participants who indicate that they wish to receive them.

Welcome to Testing Treatments interactive

How do you know whether one treatment is better than another, or whether the evidence about a treatment's benefits and harms is reliable?

Does current research address what you want to know? If not, what can you do to make treatment research more relevant to you?

Testing Treatments *interactive* (TTi) is for patients, health professionals and anyone else who is interested in these questions.

It will help you to understand the importance of having fair tests of the effects of treatments, and how you can help make them a reality.

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- Evidence Based Medicine Matters: Examples of where EBM has benefitted patients
- Shared Decision-Making
- Catch 22: Clinical Trial Edition

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Find out about the funding, management and day-to-day running of Testing Treatments *interactive*.

Inaugural meeting of the TT*i* Editorial Alliance, Oxford, 24 Jan 2013.

Matt Penfold, Philippe Ravaud, Iain Chalmers, Livia Puljak, Roberto D'Amico, Kjetil Olsen, Gerd Antes, Amanda Burls, Douglas Badenoch, Giordano Peres.

Participated by telephone: Paul Glasziou, Vasya Vlassov, Metin Gülmezoğlu, João de Souza, Rouben Hohvannesyan

Unable to participate: Adib Essali, Yaolong Chen, Rahma Evasari Lubis, Maria Kasprzak

Testing Treatments *interactive*

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"*Bad Science* introduces the basic scientific principles to **help everyone become a more effective bullshit detector**."