



Translational research: How the advent of systematic reviews changed the scientific process of critical appraisal from G.A.L.I.L.E.hO.

Group for Appraising Literature and Implementing Levels of Evidence in hOspitals



Evidence
Generators



Evidence Users



Evidence
Finders



Evidence
Ignorers



TWO DANGERS IN DAY-TO-DAY PRACTICE



**To accept the confusion
and do nothing to combat it**

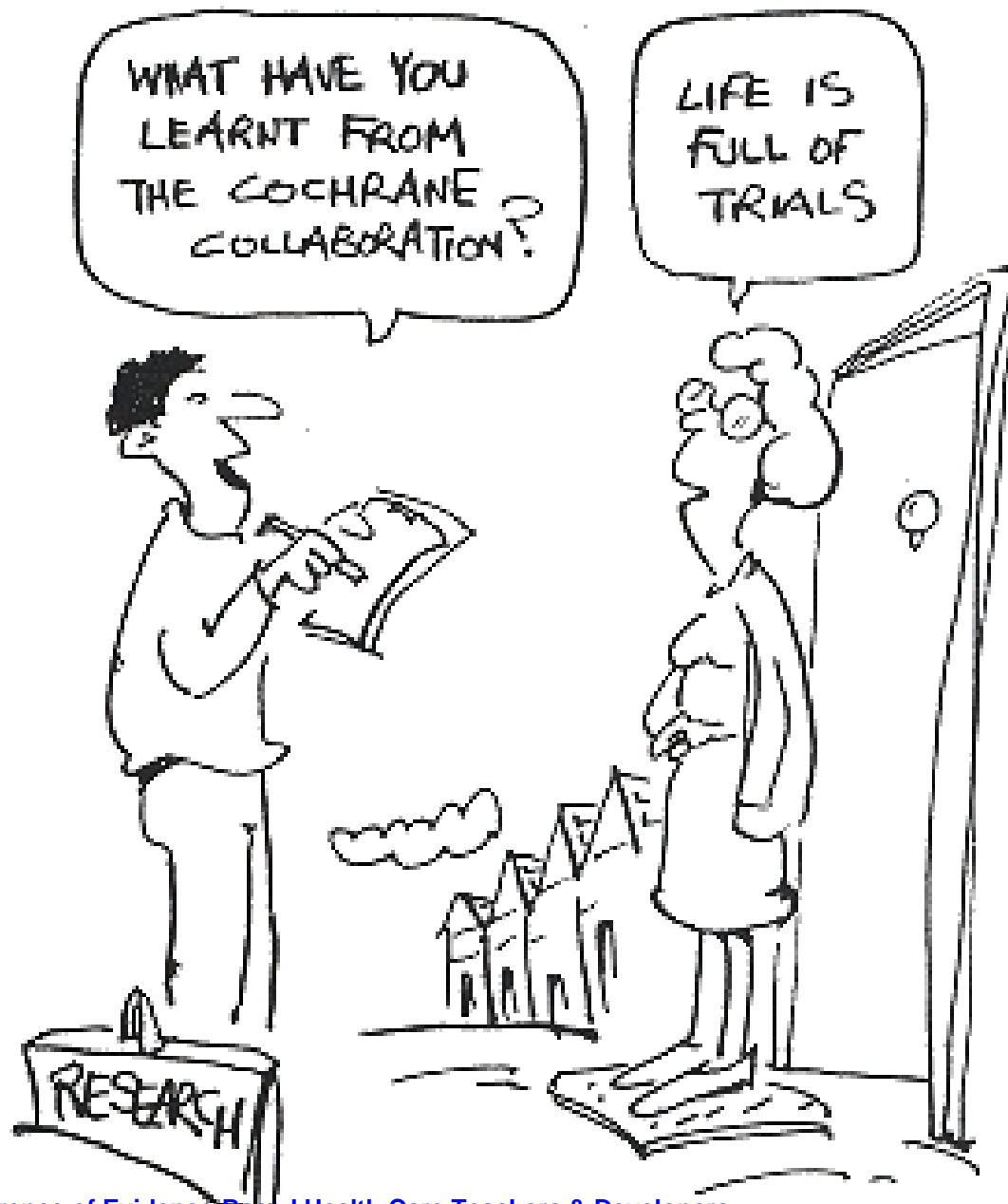
**Let the confusion get
the upper hand**



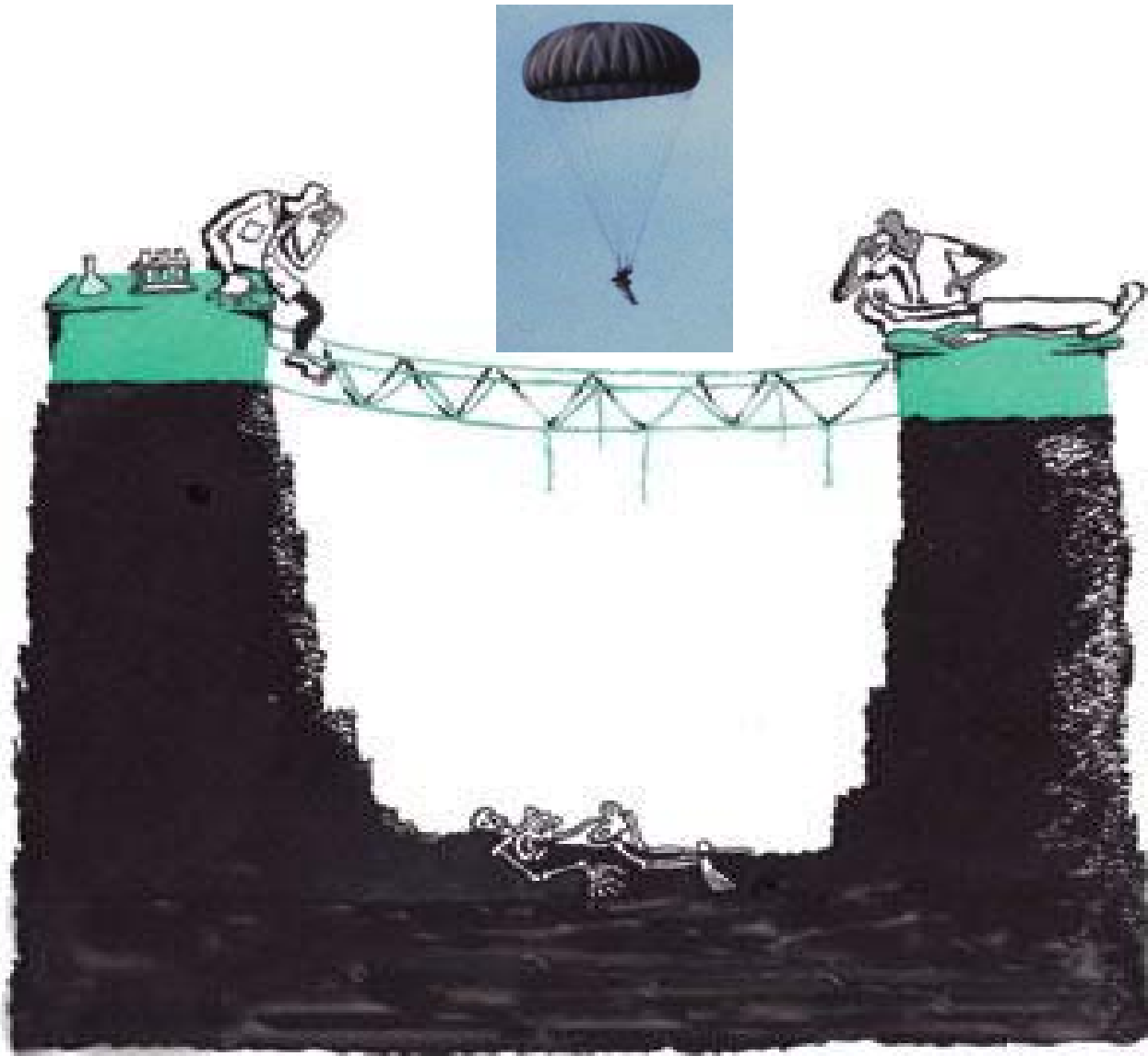


Butler D. Crossing The valley of death. Nature 2008, 453; 840-2

How can we bridge the gap between basic research and clinical practice, the “valley of death”, and do it as quickly and reliably as possible?



Shared
decision
making
process



Butler D. Crossing The valley of death. Nature 2008, 453; 840-2



Parachute approach to evidence based medicine

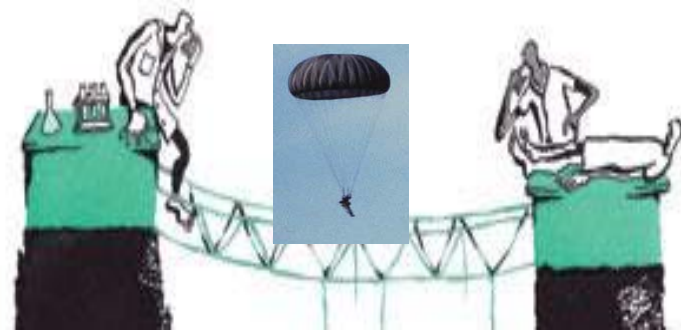
Malcolm Potts, Ndola Prata, Julia Walsh, Amy Grossman

BMJ VOL 333 30 SEPTEMBER 2006 bmj.com



If the science is good, we should act before the trials are done

Sometimes it's best just to jump in



Background

Systematic reviews (SRs) caused an earthquake in the scene of medical literature.

Nowadays SRs are an essential part in health care decision making because only few scientists have sufficient time, knowledge and interest to read carefully and to critically appraise scientific papers.

Most scientists will therefore rely on SRs.

Hence the inevitable risk of accepting potentially poor scientific information.



5th International Conference of Evidence-Based Health Care Teachers & Developers
Model of Practice in Hospital and Primary Care Taormina (Italy), 28th October - 1st November, 2009

Paola Rosati Rome, Italy



All truths are easy to understand once they are discovered, the point is to discover them

Galileo Galilei (1564-1642)

LESS IS MORE

MIND THE GAP

Galileo's scientific method aimed essentially to simplify the phenomena studied by distinguishing them as far as possible from secondary effects that might mask the desired result.



LESS IS MORE !!!

You can sit...and do not fall...



MIND THE GAP!!!



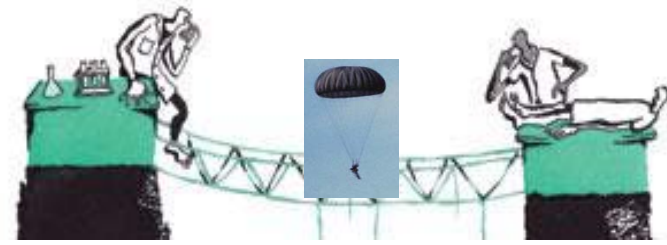


AIM

We investigated whether the health quality of hospital care could be improved by forming a multidisciplinary group within the hospital to distill the knowledge acquired, analyze SRs and rapidly translate the reliable information gathered into proper clinical decisions.



Methods



In May 2009, 24 persons (paediatricians, cardiac surgeons, anaesthetists, statisticians, psychologists, biologists and a librarian) took part in a course aimed to disseminate secondary publications in our paediatric hospital.

As the first task, using the questionnaire proposed by the Critical Appraisal Skills Programme (CASP) they critically analysed a Cochrane SR on interventions for promoting booster seat use in four-to-eight year olds travelling in motor vehicles.

Second, they selected the two key papers (highest Forest plot weights and not overlapping the null hypothesis) in the SR.

Third, using the CASP questionnaire, they critically appraised two key papers in the review.



Methods of the current study



1st step go to SR and check the Forest plot

2nd step identify two or more important studies

3rd step pre-check the study reading if they ask a right question and use the most simple and appropriate design to answer the question posed (ie the same design you might use)

4th step appraise the studies using CASP

5th step accept or refuse the clinical bottom line



Interventions for promoting booster seat use in four to eight year olds traveling in motor vehicles (Review)

Ehiri JE, Ejere HOD, Magnusson L, Emusu D, King W, Osberg JS



THE COCHRANE
COLLABORATION®

This is a reprint of a Cochrane review prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2006, Issue 2

<http://www.thecochranelibrary.com>



Interventions for promoting booster seat use in four to eight year olds traveling in motor vehicles (Review)
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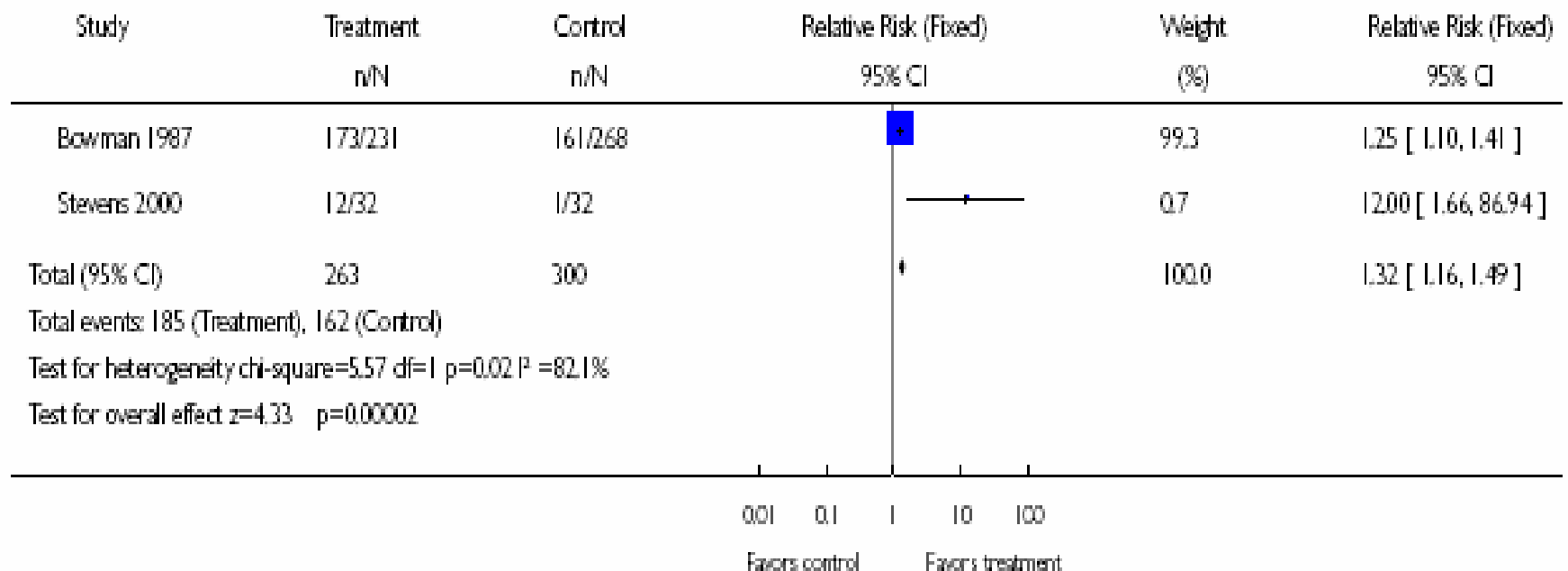
GRAPHS AND OTHER TABLES

Analysis 01.01. Comparison 01 Education versus No Intervention, Outcome 01 Booster seat use (reported or observed)

Review: Interventions for promoting booster seat use in four to eight year olds traveling in motor vehicles

Comparison: 01 Education versus No Intervention

Outcome: 01 Booster seat use (reported or observed)



Interventions for promoting booster seat use in four to eight year olds traveling in motor vehicles (Review)

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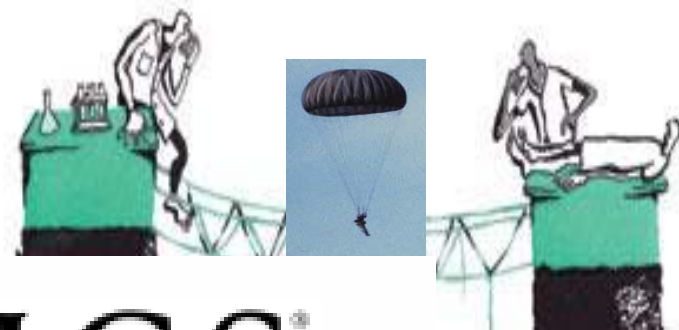
References to studies included in this review

Bowman 1987 *(published data only)*

Bowman JA, Sanson-Fisher RW, Webb GR. Interventions in preschools to increase the use of safety restraints by preschool children. *Pediatrics* 1987;79(1):103–8.

Stevens 2000 *(unpublished data only)*

Stevens SL. Effects of intervention on booster seat purchase: a field study. Thesis at Virginia Polytechnic Institute and State University 2000.



PEDIATRICS[®]

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Interventions in Preschools to Increase the Use of Safety Restraints by Preschool Children

Jennifer A. Bowman, Robert W. Sanson-Fisher and Gloria R. Webb
Pediatrics 1987;79:103-109

The online version of this article, along with updated information and services, is located on the World Wide Web at:
<http://www.pediatrics.org>



Results



After initially appraising the SR with the CASP questionnaire all of the participants agreed that the eligibility criteria for inclusion in the studies suffered from different bias.

When they carefully read the Bowman paper selected they found that had high weight in the Forest plot but contained numerous flaws that weakened the results (ie limited settings, non homogeneous legislation rules) that led to poor precision, generalisability and applicability of the findings.



Results



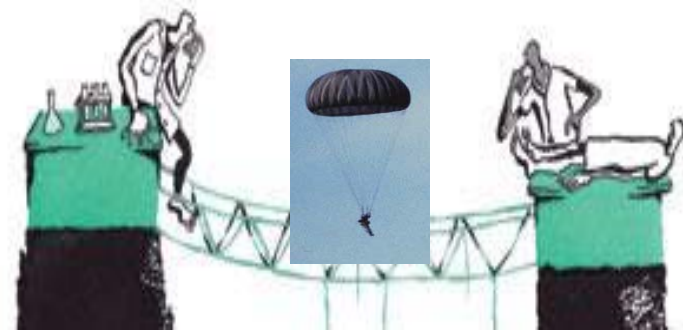
When the course ended, the participants proposed forming a group that could analyse the results of SRs rapidly though reliably.

**This group was named G.A.L.I.L.E.O.
Gruppo per l'apprezzamento della letteratura
e l'implementazione dei livelli di evidenza
negli ospedali**

**Group for Appraising Literature and
Implementing Levels of Evidence in hOspitals.**



Conclusion



AIM We investigated whether the health quality of hospital care could be improved by forming a multidisciplinary group within the hospital to distill the knowledge acquired, analyze SRs and rapidly translate the reliable information gathered into proper clinical decisions.

The quality of hospital care can be improved by forming a multidisciplinary group that can harmonize the knowledge acquired, analyze SRs and translate the right information into proper clinical decisions.



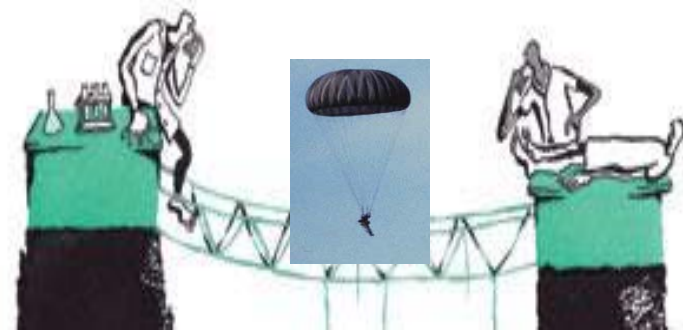
Conclusion



Our study underlines that the quality of a systematic review should undergo careful appraisal before information from the review can be used in clinical practice.



Conclusion



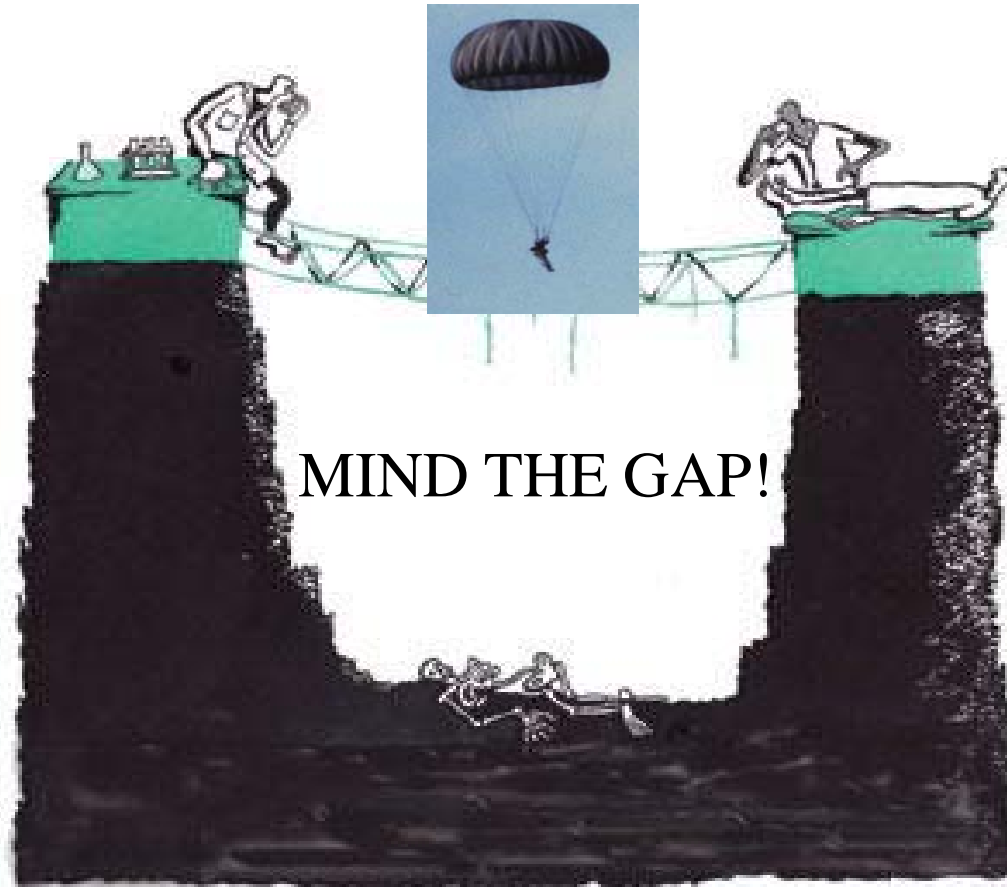
A rapid appraisal nevertheless risks losing important scientific observations and leaving their clinical relevance unclear

Gathering the information requires considerable skills and applying the evidence is time consuming



In future

- A ‘translational multidisciplinary group’ could be formed by few people:
 - two clinicians
 - a biologist or a basic researcher
 - a librarian
 - a statistician
 - a patient?
 - ...
- We need to check the current method to validate it



Why doctors kill more people than airline pilots?

Chalmers T. BMJ 1998; 317

**Tom Chalmers answered:
'If doctors died with their patients,
they'd take a great deal more care.'**