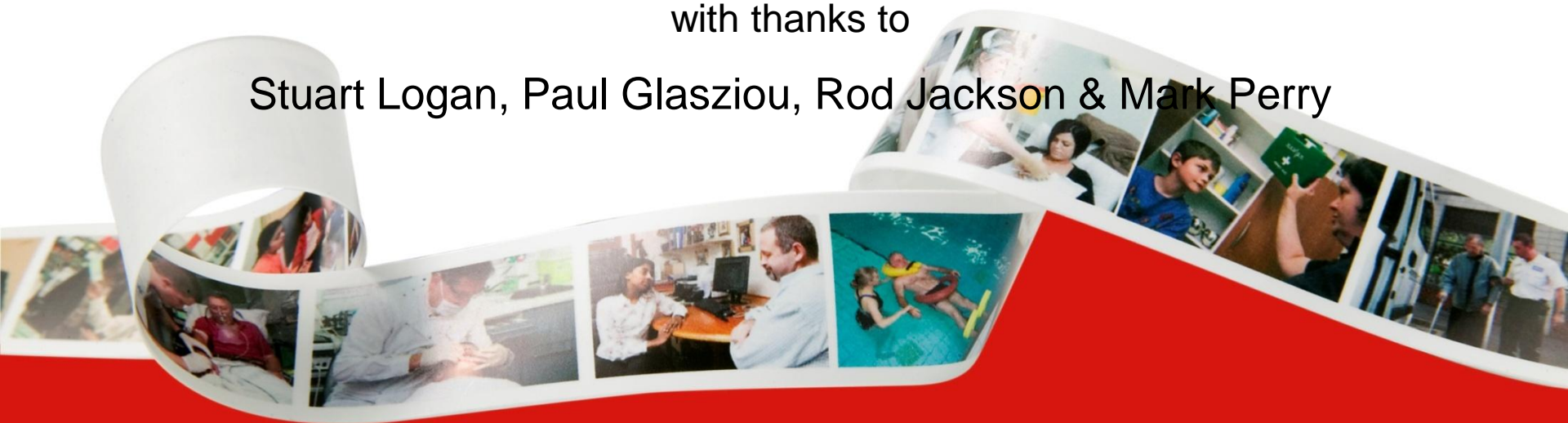


# Clinical decision making or Evidence based practice

Sarah Dean

with thanks to

Stuart Logan, Paul Glasziou, Rod Jackson & Mark Perry



# Aims of the afternoon

Discuss the role of empirical evidence in clinical practice

Think about the quality of evidence we use

Why & how to structure focussed questions

Give you a couple of short cuts to useful evidence

Practise critical appraisal of research

Think about how to apply evidence to practice

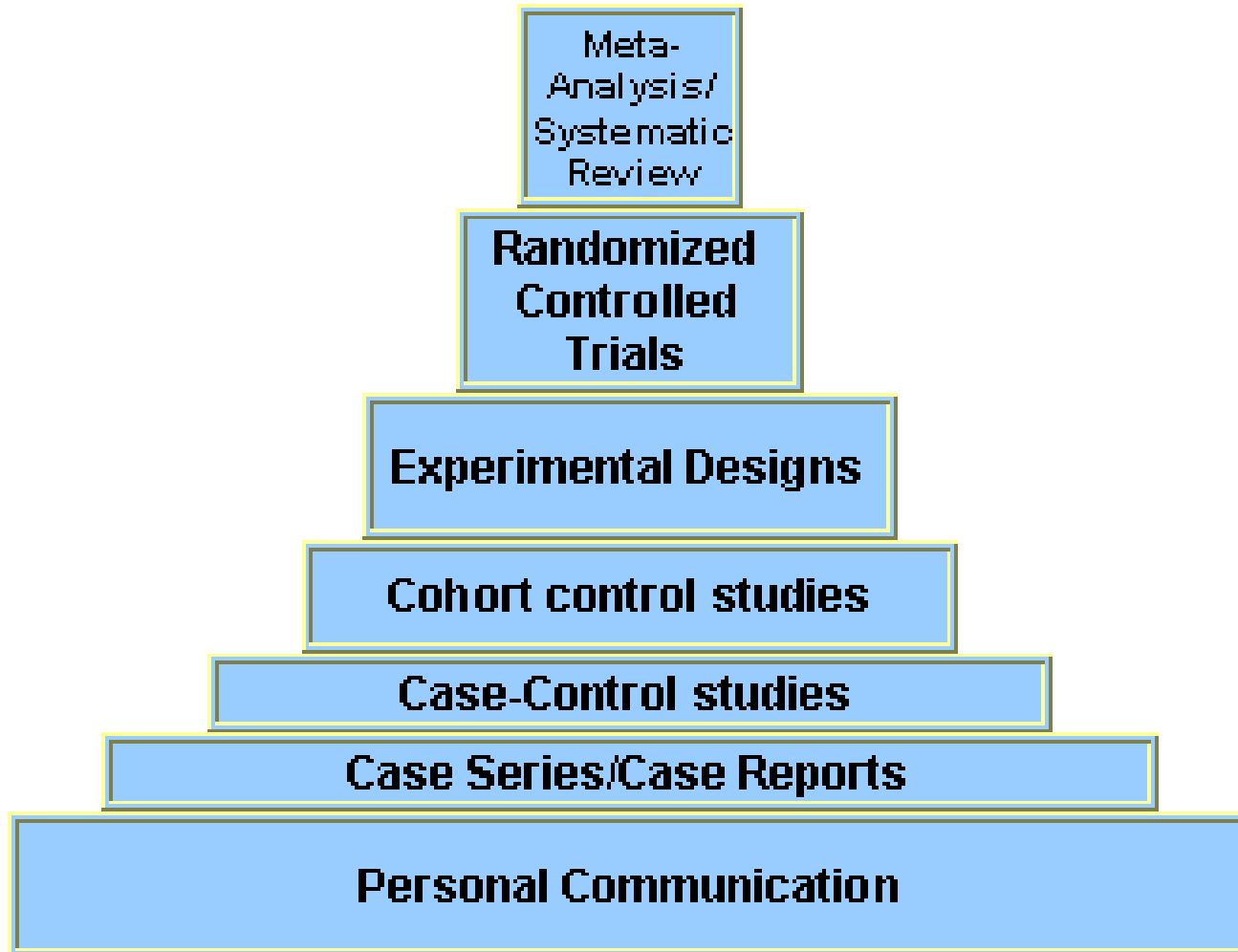
# Clinical Decision Making (CDM): Using evidence to improve practice



# The “best” evidence depends on the type of question

Level	Treatment	Prognosis	Diagnosis
I	<i>Systematic Review of ...</i>	<i>Systematic Review of ...</i>	<i>Systematic Review of ...</i>
II	Randomised trial	Inception Cohort	Cross sectional
III			

# Hierarchy of reliability (for treatment interventions!)



# **The demand for EBP**

**The existence of a research-practice gap**

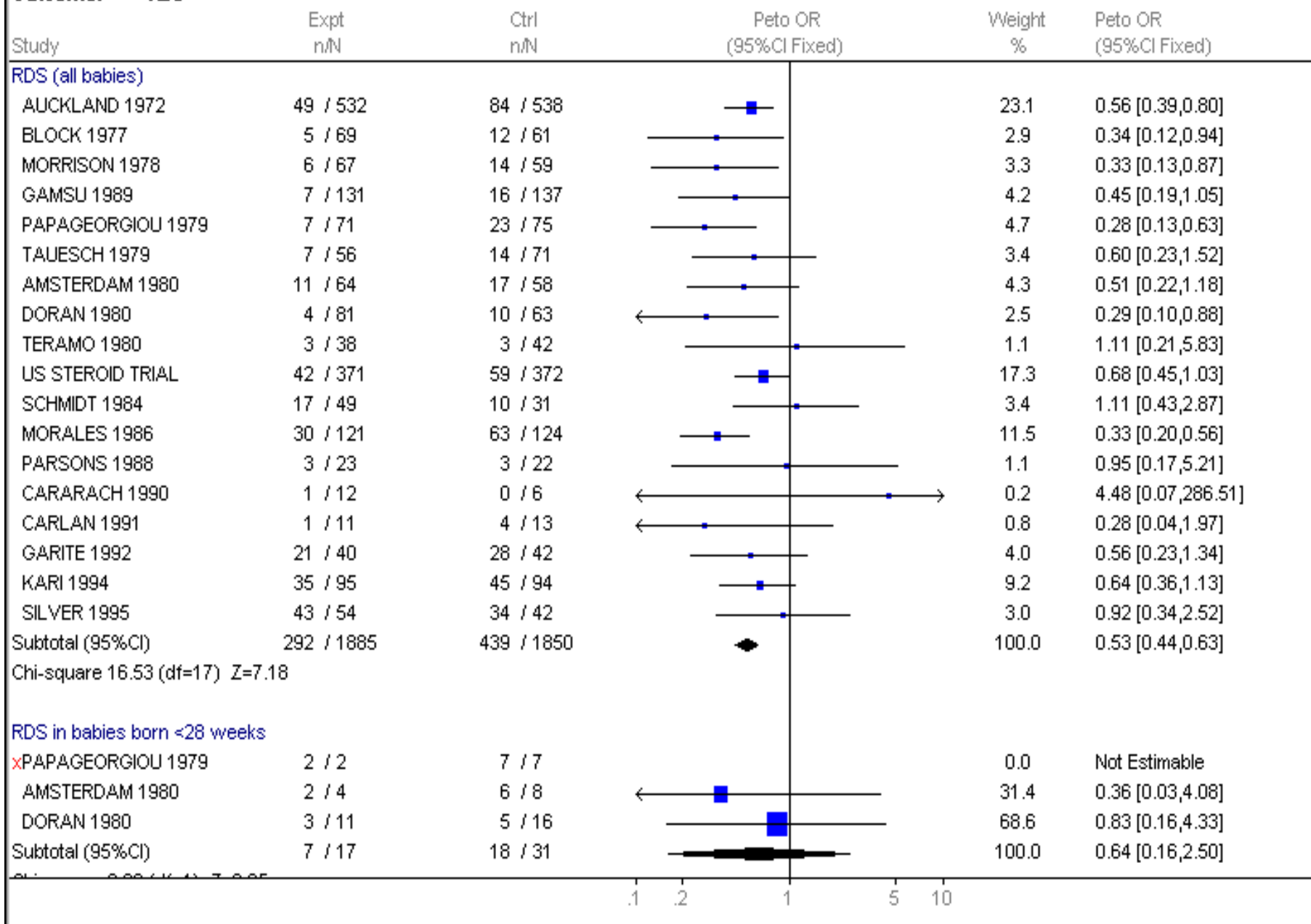
Errors in the interpretation of research evidence

Pressure from “payers” for justification for services

Pressure from families for more involvement in decision-making

**Comparison: Corticosteroids versus placebo or no treatment**

**Outcome: RDS**



# **The demand for EBP**

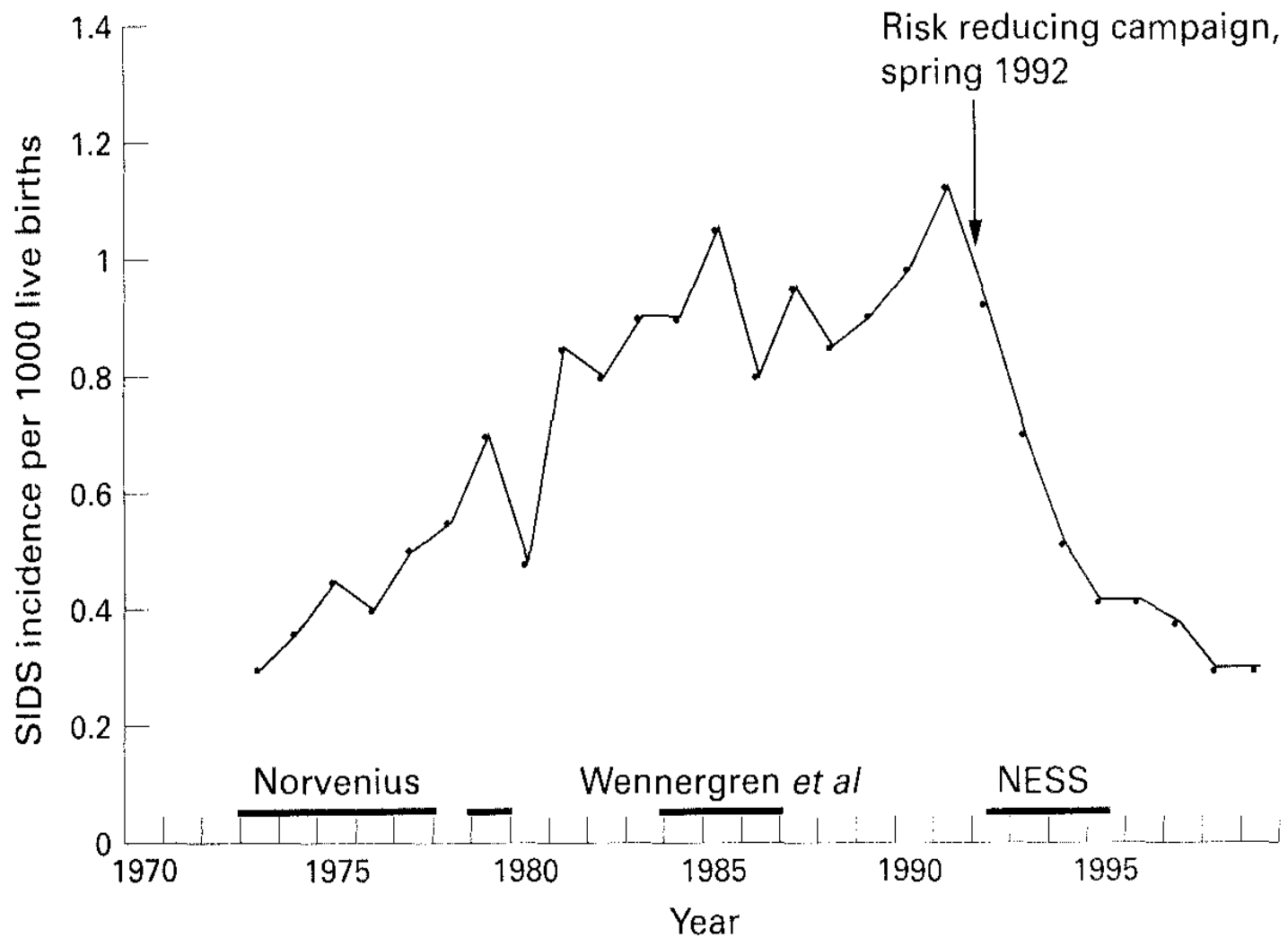
The existence of a research-practice gap

**Errors in the interpretation of research evidence**

Pressure from “payers” for justification for services

Pressure from families for more involvement in decision-making





*Figure 1 Incidence of SIDS in Sweden 1973–1999. Data from the Medical Birth Registry of Sweden. Time periods for studies mentioned in the text are indicated by bold lines.*



# Comparison: 01 Prone vs non-prone sleeping position

Outcome: 01 SIDS

Study	Treatment n/N	Control n/N	OR (95%CI Random)	OR (95%CI Random)
Carpenter 1965	28 / 110	33 / 166		1.38[0.78,2.44]
Froggatt 1970	10 / 148	6 / 148		1.71[0.61,4.85]
Tonkin 1986	21 / 33	122 / 716		8.52[4.08,17.78]
Cameron 1986	144 / 208	161 / 393		3.24[2.27,4.63]
Senecal 1987	17 / 20	95 / 318		13.30[3.81,46.46]
Beal 1988a	85 / 100	59 / 156		9.32[4.93,17.62]
Beal 1988b	80 / 100	53 / 182		9.74[5.42,17.48]
Nicholl 1988	111 / 265	68 / 273		2.17[1.51,3.14]
Lee 1989	7 / 16	2 / 32		11.67[2.05,66.41]
McGlashan 1989	96 / 164	141 / 329		1.88[1.29,2.75]
de Jonge 1989	122 / 142	197 / 320		3.81[2.26,6.43]
Fleming 1990	62 / 67	76 / 134		9.46[3.58,25.04]
Bouvier-Colle 1990	688 / 782	72 / 211		14.13[9.89,20.19]
Dwyer 1991	9 / 15	837 / 2592		3.15[1.12,8.87]
Engelberts 1991	62 / 105	221 / 566		2.25[1.47,3.44]
Mitchell 1991	93 / 128	216 / 503		3.53[2.30,5.41]
Wigfield 1992	20 / 32	62 / 216		4.14[1.91,8.98]
Hoffman 1992	613 / 757	545 / 757		1.66[1.30,2.11]
Ponsonby 1993	39 / 58	36 / 119		4.73[2.41,9.28]
Jorch 1994	70 / 94	244 / 758		6.14[3.77,10.01]
Irgens 1995	43 / 63	135 / 315		2.87[1.61,5.10]
Fleming 1996	30 / 188	24 / 774		5.93[3.38,10.42]
Oyen 1997	129 / 238	170 / 856		4.78[3.52,6.48]
Brooke 1997	13 / 146	5 / 275		5.28[1.84,15.12]
Hauck 2003	149 / 260	91 / 260		2.49[1.75,3.55]
Total(95%CI)	2741 / 4239	3671 / 11369		4.13[3.11,5.47]

Test for heterogeneity chi-square=183.52 df=24 p<0.00001

Test for overall effect z=9.85 p<0.00001

.01 .1 1 10 100  
Favours treatment Favours control



# The need for EBP

The data explosion

Changes in clinical practice

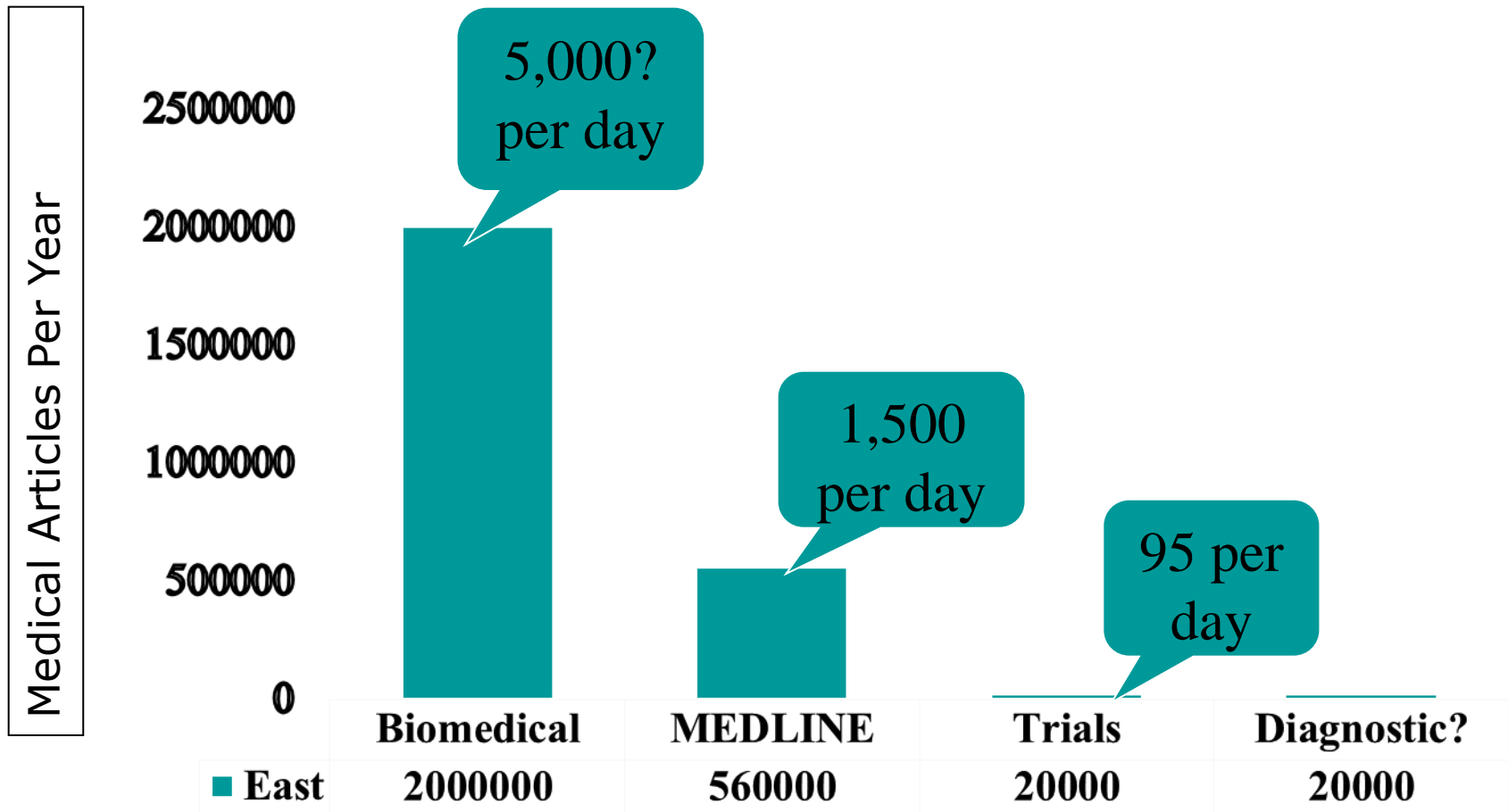
- More teamwork

- More management in primary care

- Less continuity of care

# Rule 31 – Review the World Literature Fortnightly

"Kill as Few Patients as Possible" - Oscar London



Is keeping up to date Mission Impossible?



# **EBP does not consist of:**

Sole reliance on evidence from RCTs

Making decision by the simple application of guidelines

# **Structured questions provide a framework which helps:**

Identify your information needs

Guide your search strategy

Decide the extent to which evidence applies to your particular problem



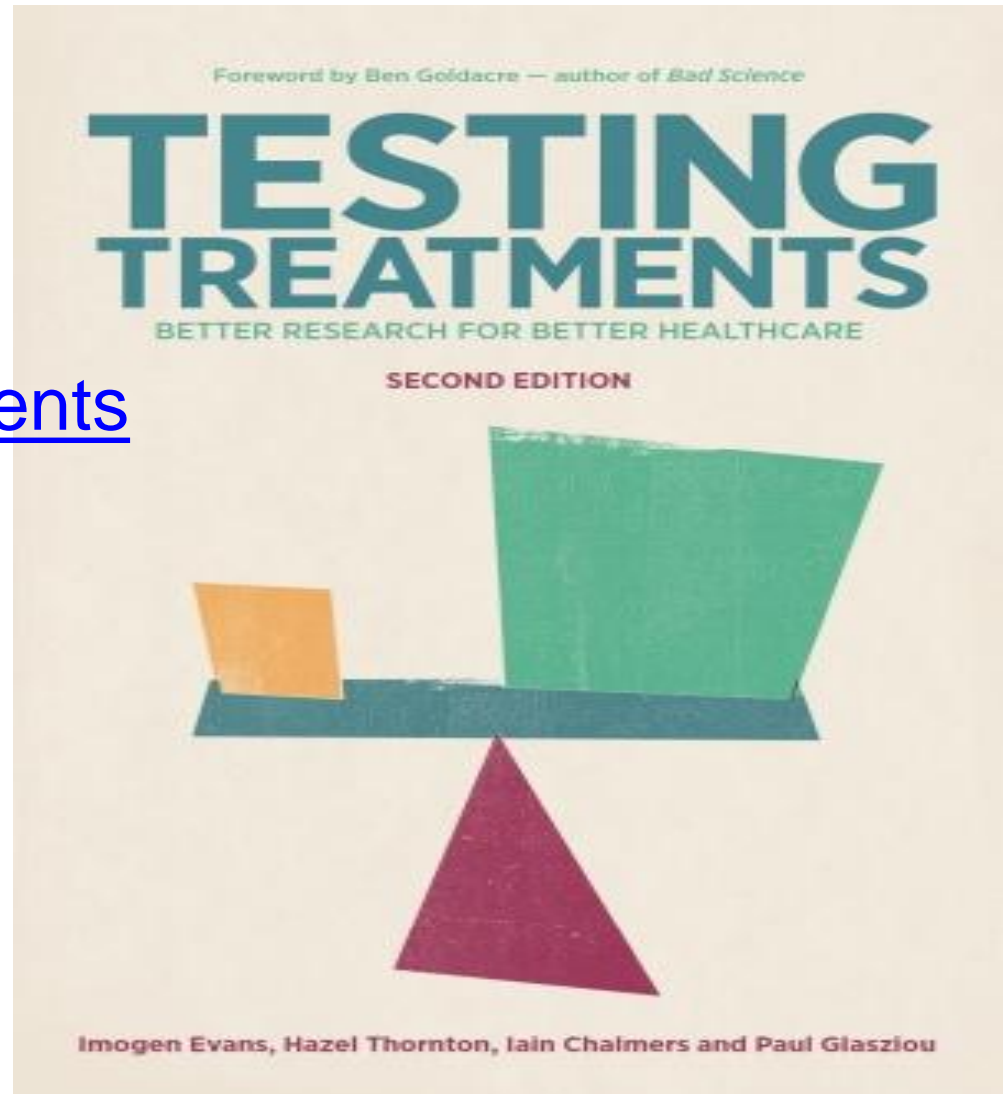
# Sources of evidence

<http://www.tripdatabase.com/>

<https://www.evidence.nhs.uk/>

# Sources of evidence

<http://www.testingtreatments.org/new-edition/>



Structuring questions is not about  
designing the perfect study – it is  
about helping you use existing  
evidence to inform practice

# Getting the question right

Who

What

Why

# Clinical Problem

P

I

C

O

# **Clinical Problem**

Population

Intervention

Comparison

Outcome

# Clinical Problem

P

I

Exposure

C

O

In India, should birth attendants clean newborn babies in the community with chlorhexidine swabs?

P

I

C

O



Should Sarah take inhaled steroids  
for her asthma?

P

I

C

O

Clinical Problem

Study Question

P



P

I



I

C



C

O



O

# Clinical Decision Making

What are the treatment options and the possible outcomes

For each treatment option, how likely is each possible outcome?

What is the relative value of each outcome?