

The Epidemiology of Ignorance

The leaky pipeline from research to patient care

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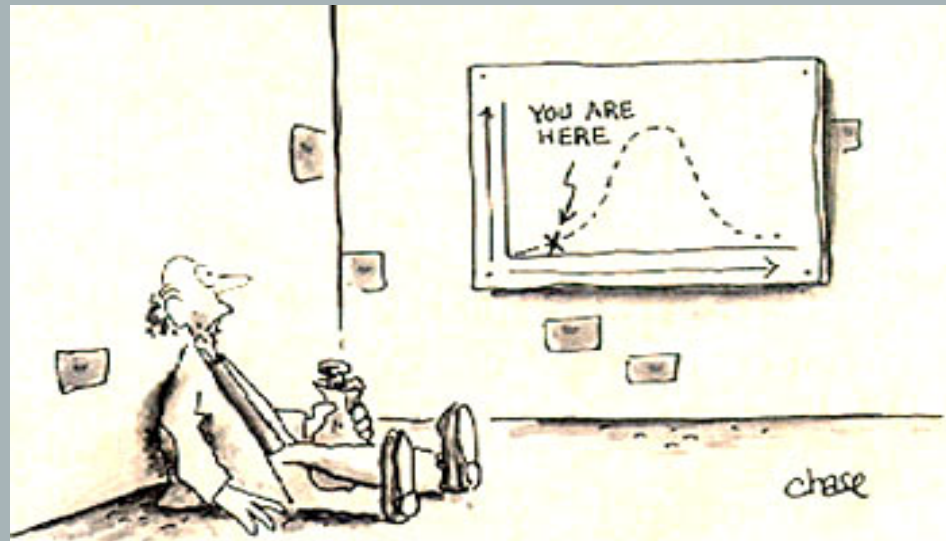
www.cebm.net





The Epidemiology of Ignorance and Knowledge in Health Care

- ▶ *Prevalence & Incidence*
- ▶ *Causes / Etiology*
- ▶ *Prognosis*
- ▶ *Prevention & Treatment*



Prevalence

Ignorance Map





Is bed rest effective?

A systematic review

- ▶ 10 trials of bed rest
 - ▶ no change in headache
 - ▶ Increase in back pain
- ▶ Protocols in UK recommend bed rest
- ▶ ...evidence of harm preceding...

Does bed rest after cervical or lumbar puncture prevent headache?

A systematic review and meta-analysis

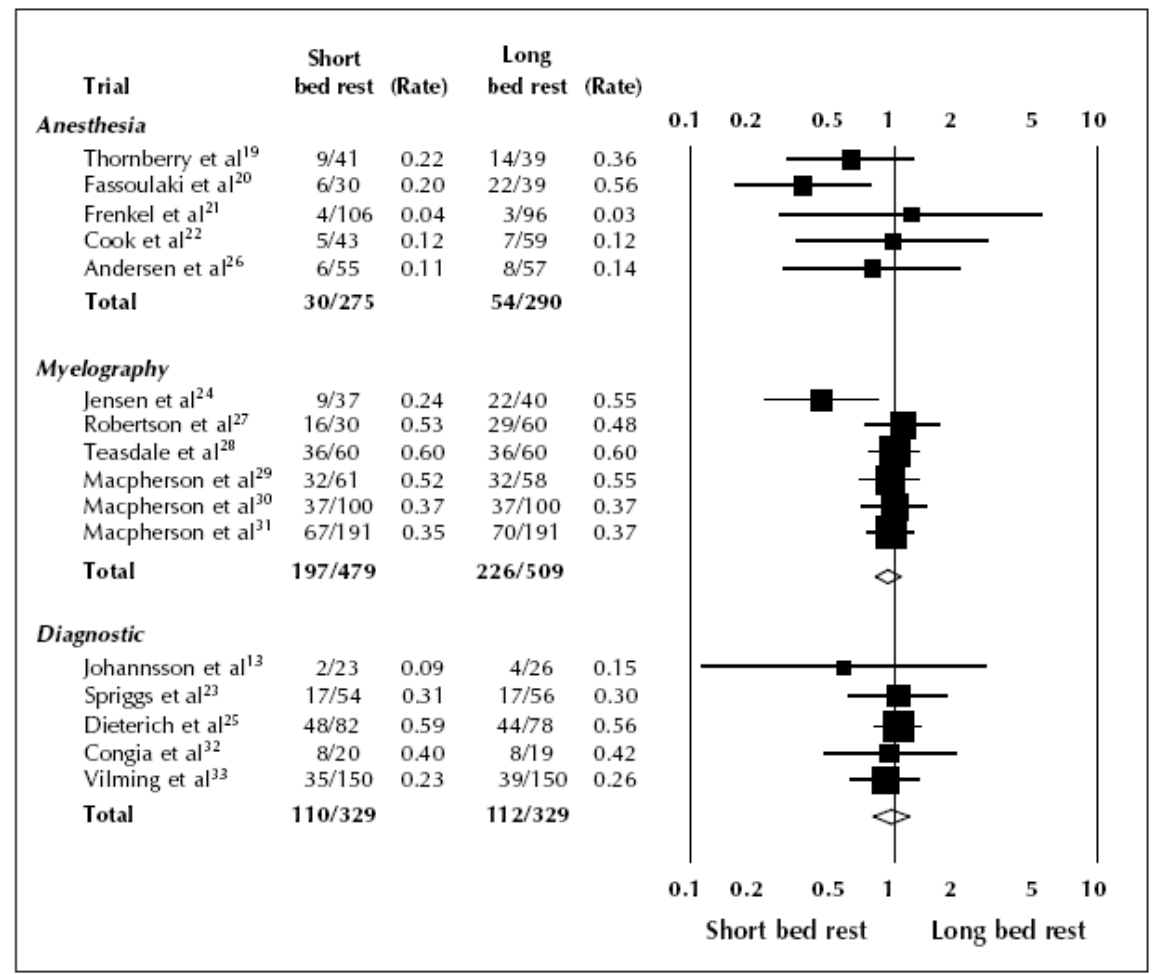


Fig. 2: Absolute and relative effect size for short bed rest versus long bed rest to prevent headache after lumbar or cervical puncture. (An expanded version of the figure, with relative risks and 95% confidence intervals, is available online at www.cma.ca/cmaj/vol-165/issue-10/pdf/thofig2.pdf).

*Allen, Glasziou, Del M

Search
Clear
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Handbook
Glossary
Help
Exit

- Complete reviews (7 hits, 1297 total)
 - Antibiotics for preterm premature rupture of membranes
 - Bed rest in hospital for suspected impaired fetal growth
 - Hospitalisation and bed rest for multiple pregnancy

Comments/Criticisms Back Find Outline

Hospitalisation and bed rest for multiple pregnancy

Crowther CA

Preterm delivery (< 37 weeks) (Hospitalisation and bed rest for multiple pregna)

This review shows...
Issue 1, 2002. C...
A substantive an...
necessary.
Background:
Objectives: T...
and other fetal, i...
Search strate
relevant articles
Selection crit
rest in hospital v...
Data collecti
extracted by the...
carried out to ev...
women with a t...
Main results:
(1) Analyses of...
Routine bed res...
number of low b...
allocation was e...
weight infants. I...

Comparison: Hospitalisation for bed rest for women with a multiple pregnancy
Outcome: Preterm delivery (< 37 weeks)

Study	Expt n/N	Ctrl n/N	Peto OR (95%CI Fixed)	Weight %	Peto OR (95%CI Fixed)
Crowther 1989	51 / 70	55 / 69		17.5	0.69 [0.32, 1.50]
Crowther 1990	36 / 58	40 / 60		18.8	0.82 [0.39, 1.74]
Crowther 1991	8 / 10	9 / 9		1.3	0.13 [0.01, 2.33]
Hartikainen-Sorri	11 / 32	11 / 45		10.7	1.62 [0.60, 4.38]
Maclennan 1990	38 / 69	37 / 72		24.4	1.16 [0.60, 2.24]
Saunders 1985	32 / 105	20 / 107		27.2	1.88 [1.01, 3.52]
Total (95%CI)	176 / 344	172 / 362		100.0	1.14 [0.82, 1.58]

Chi-square 7.50 (df=5) Z=0.78

Bed-rest leads to
non-significant
increase in preterm
delivery

File Edit View Favorites Tools Help

Print Back Forward Stop Refresh Home Search History Edit Favorites Mail Discuss

Address <http://www.pregnancybedrest.com/> Go Links Powermarks

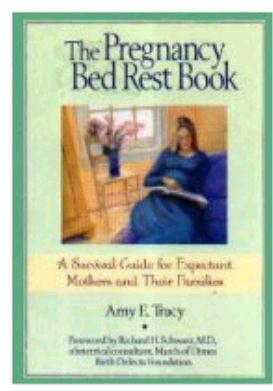
Google bedrest Search Web Search Site PageRank Page Info Up Highlight bedrest

PREGNANCYBEDREST.COM

A READING ROOM TO HELP YOU SURVIVE AND THRIVE DURING YOUR DAYS IN WAITING

- home
- about the book
- information
- support
- ORDER the book**
- resources
- contact the author

The Pregnancy Bed Rest Book A Survival Guide for Expectant Mothers and Their Families



[CLICK TO ORDER](#)

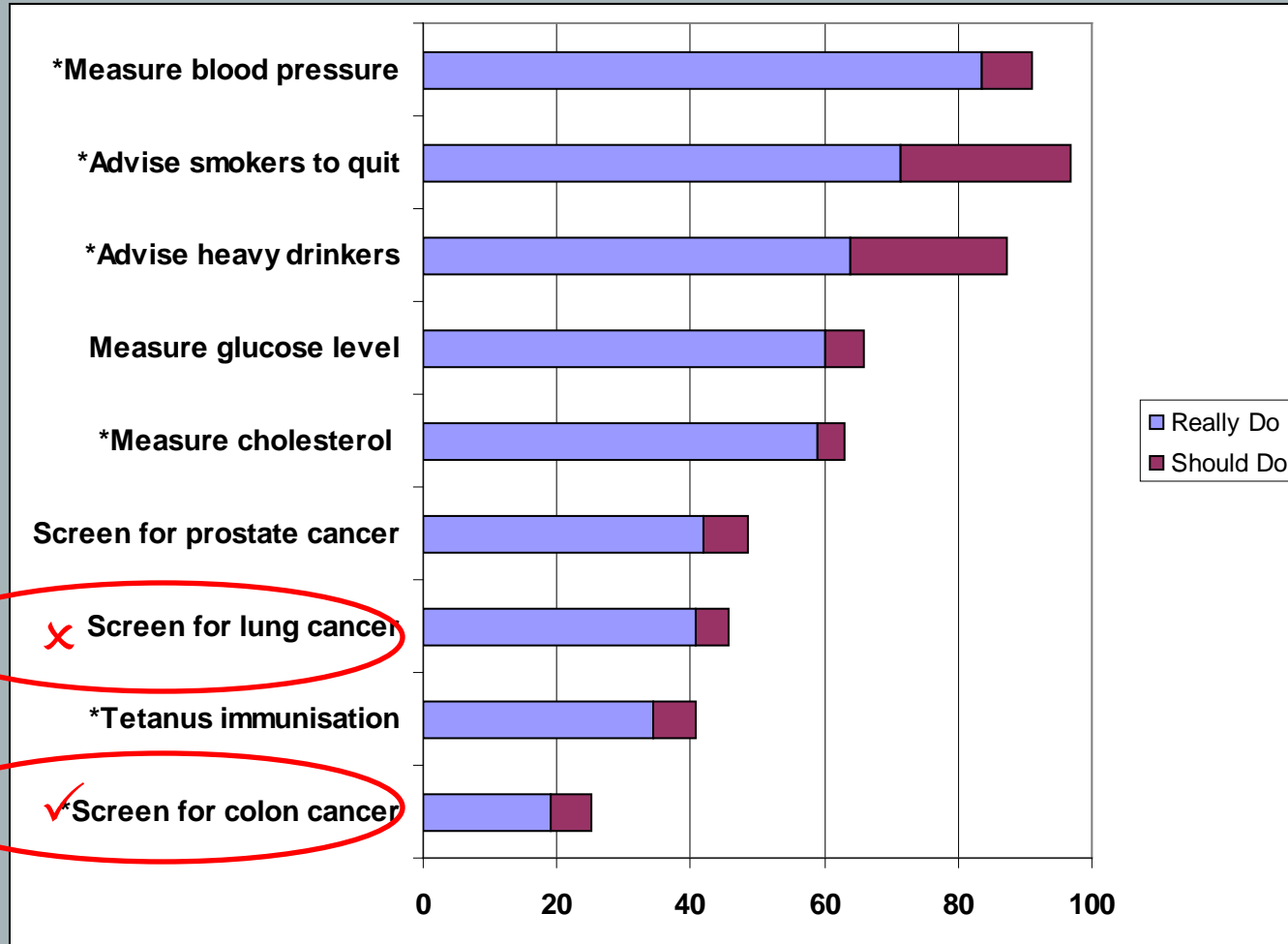
Statistics indicate that up to 700,000 expectant women a year - that's one in five mothers-to-be - are prescribed bed rest as treatment during complicated pregnancies. Bed rest might sound like a relief at first - but the combination of a possible high-risk birth and a lengthy period of staying off your feet can be stressful.

Amy E. Tracy shares her experiences - and those of many others - to help you and your family not only survive but thrive during your days in waiting. With information on everything from informing your employer and making arrangements with your health insurance to proper nutrition and calisthenics, this comprehensive guide also covers such topics as:

- Understanding Your Doctor's Orders
- Adjusting to Horizontal Living



GP beliefs and intentions for preventive procedures in 52 yr male



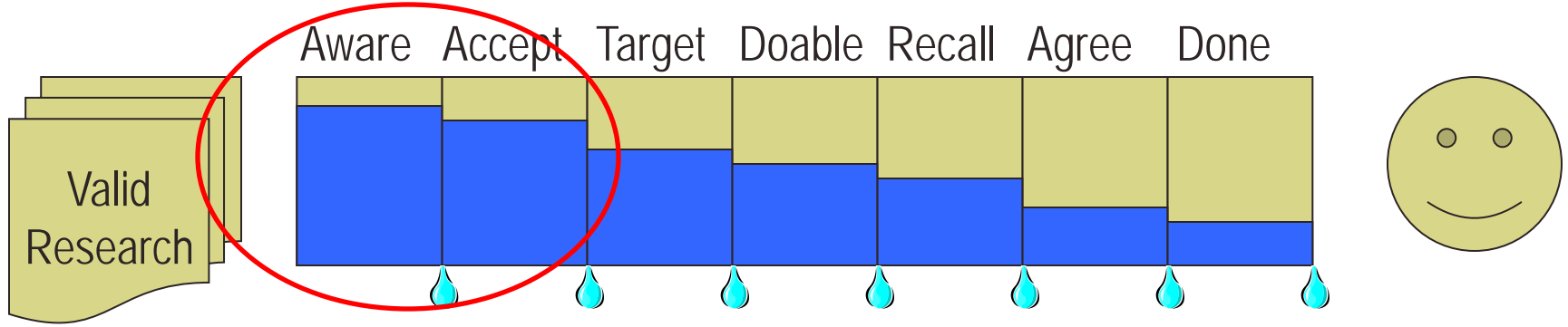
EUROPREV Network Europe. Prev Med. 2005;595-601

Croatia Estonia Georgia Greece Ireland Malta Poland Slovakia Slovenia Spain Sweden



Why? The Etiology/Pathogenesis

The “Leaks” from research & practice



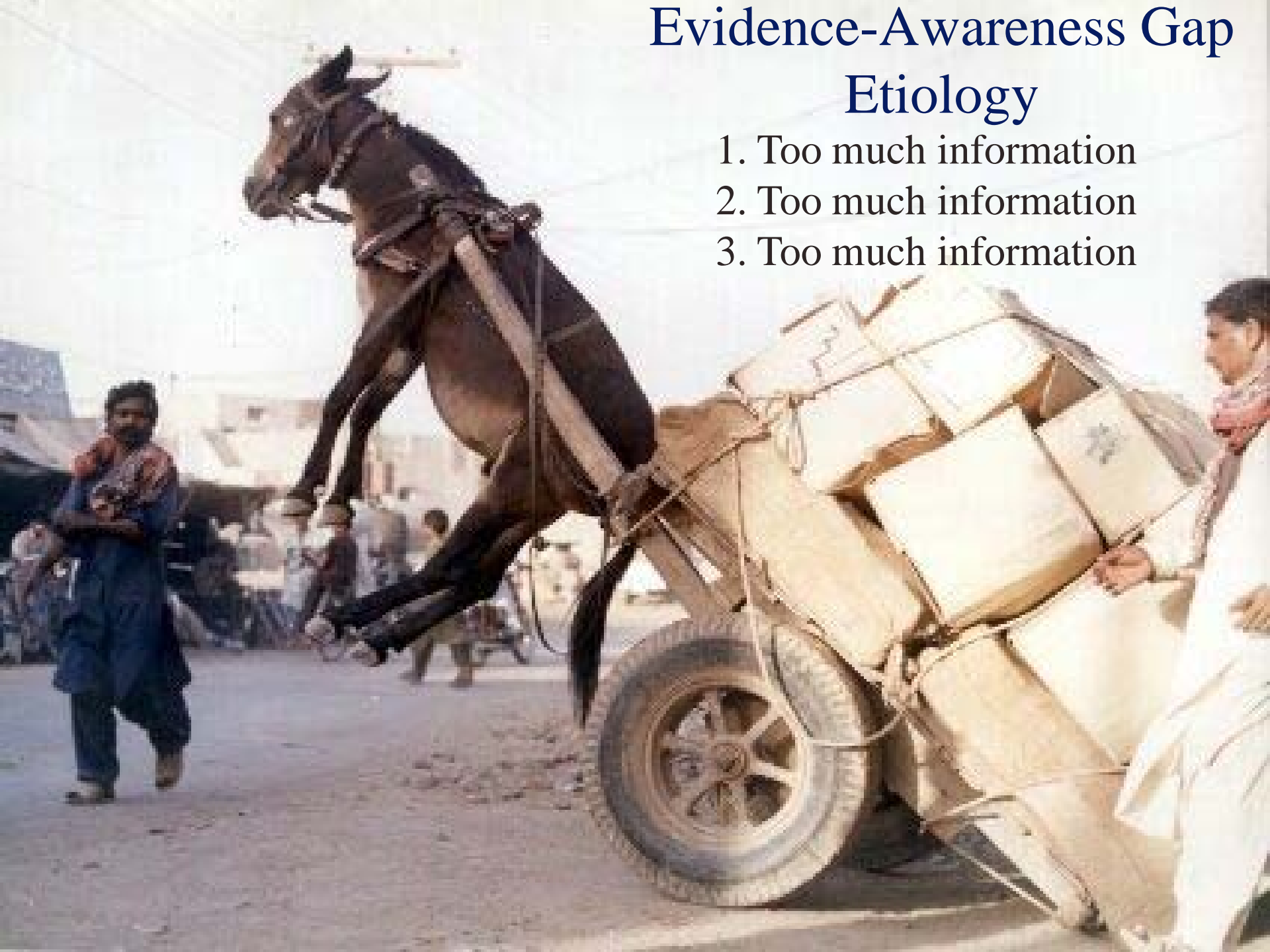
If 80% achieved at each stage then

$$0.8 \times 0.8 \times 0.8 \times 0.8 \times 0.8 \times 0.8 \times 0.8 = 0.21$$

Evidence-Awareness Gap

Etiology

1. Too much information
2. Too much information
3. Too much information





Quant' e Informazioni?

Size of Medical Knowledge

▲ *NLM MetaThesaurus*

▲ *875,255 concepts*

▲ *2.14 million concept names*

▲ *Diagnosis Pro*

▲ *9,200 diseases*

1 per day for
25 years

▲ *20,000 abnormalities (symptoms, signs, lab, X-ray,)*

▲ *3,200 drugs (cf FDAs 18,283 products)*

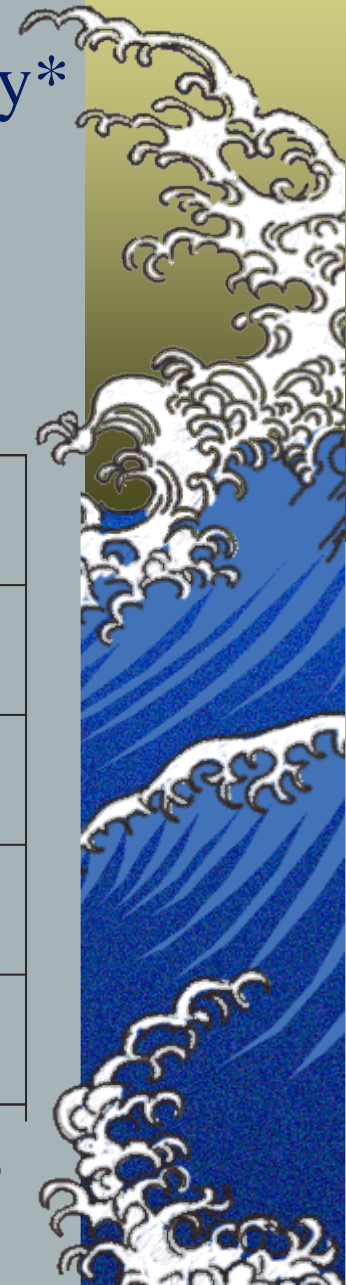
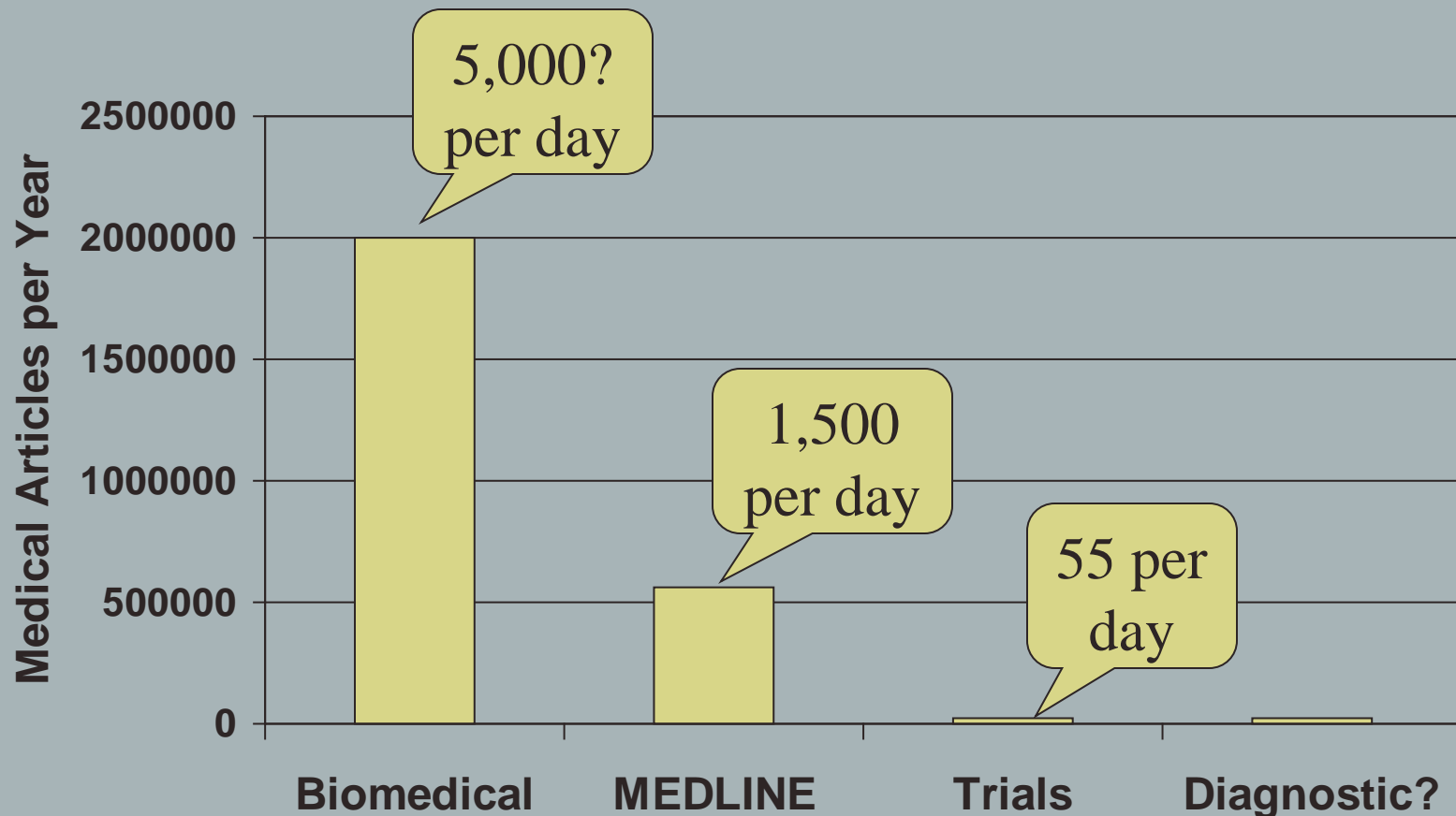




Quant'e Informazioni?

Rule 31 – Review the World Literature Fortnightly*

*"Kill as Few Patients as Possible" - Oscar London



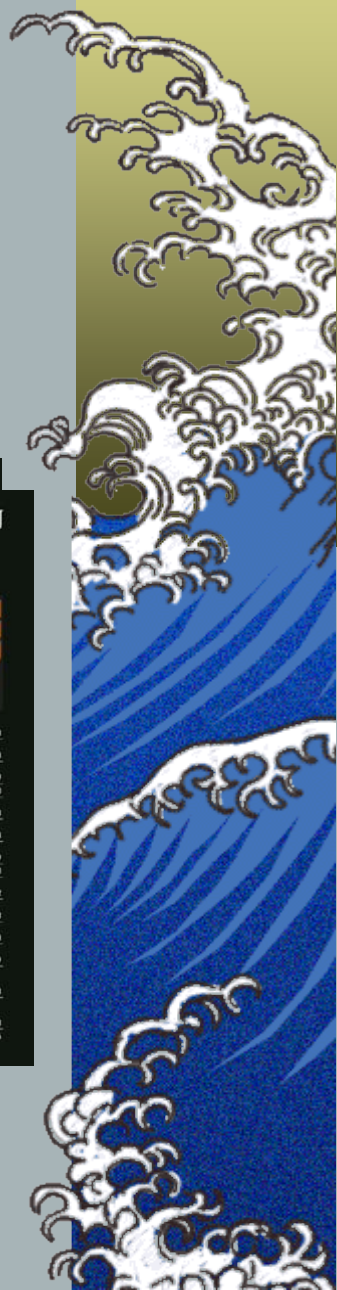
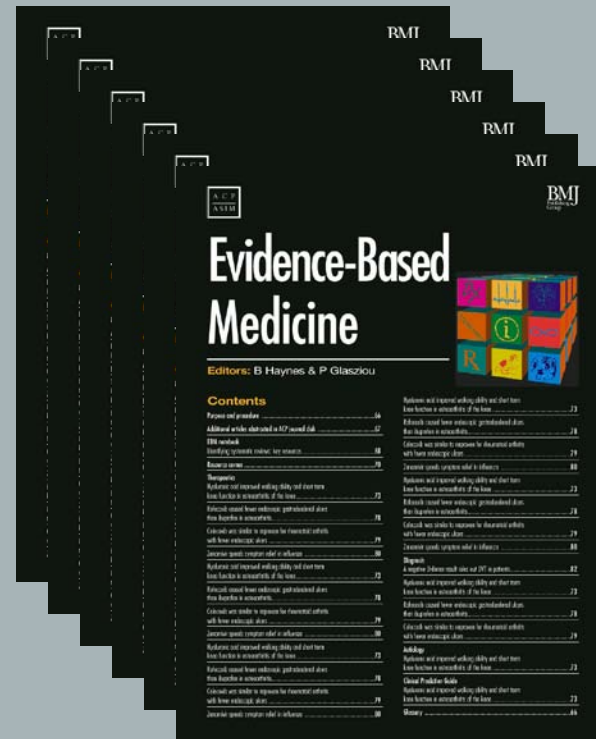


Filtered knowledge

How much is valid AND relevant?

PROCESS

- ▶ 120+ journals scanned
 - ▶ 50,000 articles
- ▶ Is it **valid**? (<5%)
 - ▶ Intervention: RCT
 - ▶ Prognosis: inception cohort
 - ▶ Etc
- ▶ Is it **relevant**?
 - ▶ 6-12 GPs & specialists asked: Relevant? Newsworthy?
- ▶ < 0.5% selected





Prevention & Treatment

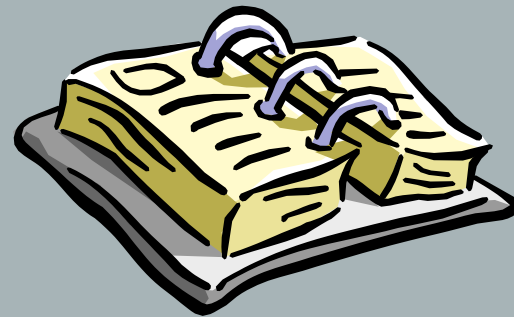




Prevention: The push & pull of Evidence-Based Practice



Read an evidence-based abstraction journal



Keep a logbook of your own clinical questions (and answer some!!)





“Just in Time” learning: Intern’s information needs

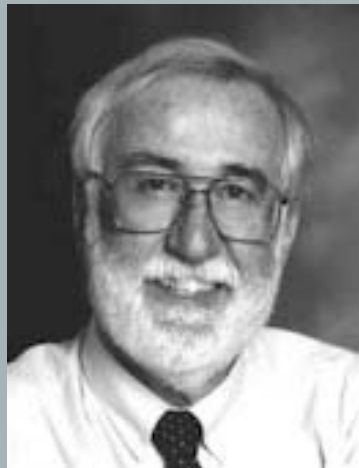
- ▶ *Setting: 64 residents at 2 New Haven hospitals*
- ▶ *Method: Interviewed after 401 consultations*
- ▶ *Questions*
 - ▶ *Asked 280 questions (2 per 3 patients)*
 - ▶ *Pursued an answer for 80 questions (29%)*
 - ▶ *Not pursued because*
 - ▶ *Lack of time*
 - ▶ *Forgot the question*
- ▶ *Sources of answers*
 - ▶ *Textbooks (31%), articles (21%), consultants (17%)*





Prevention: “Just in Time” learning

- ▶ *Shift focus to current patient problems (“just in time” education)*
 - ▶ *Relevant to YOUR practice*
 - ▶ *Memorable – and behaviour changed!*
 - ▶ *Up to date*
- ▶ *Skills and resources for best current answers*



Dave Sackett





Treatment

★ *Difficult an*

★ *No magic i*

★ *Local opi*

★ *Academic*

★ *Audit and*

★ *Reminder*



[The Cochrane Library 2004, Issue 4](#)

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BROWSE TOPICS BY COCHRANE COLLABORATIVE REVIEW GROUP

Effective Practice & Care

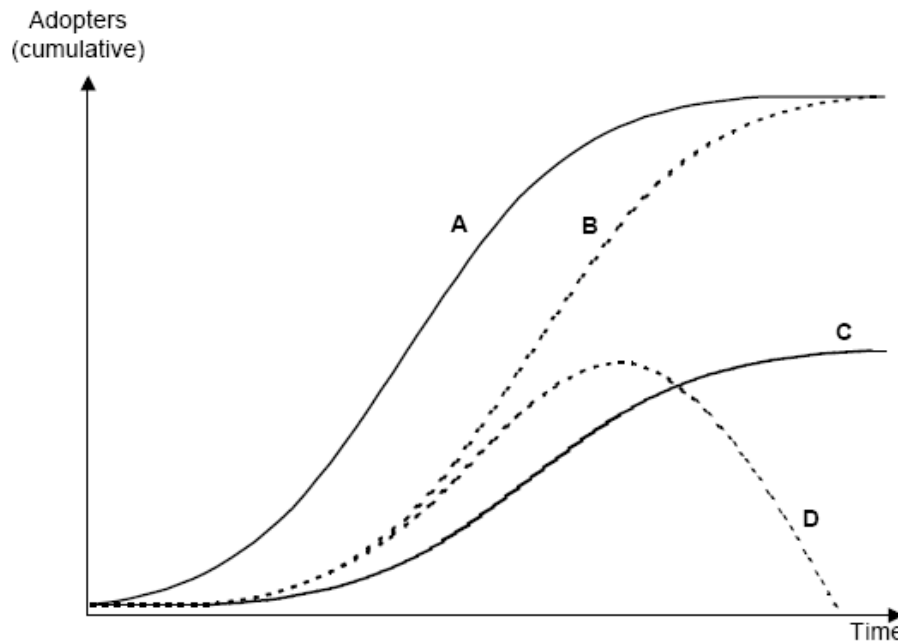
- ▷ Reviews of specific types of interventions (42)
 - ▷ Continuing education and quality assurance (15)
 - ▷ Distribution of educational materials (2)
 - ▷ Educational meetings (including lectures, workshops and traineeships) (1)
 - ▷ Local consensus processes (1)
 - ▷ Educational outreach visits (1)
 - ▷ Local opinion leaders (1)
 - ▷ Patient mediated interventions
 - ▷ Audit and feedback (2)
 - ▷ Reminders (including computerised decision support systems) (3)
 - ▷ Marketing (1)
 - ▷ Mass media (1)
 - ▷ Other (2)
 - ▷ Financial interventions (6)
 - ▷ Organisational interventions (21)
 - ▷ Regulatory interventions
- ▷ Reviews of interventions to improve specific types of practice (15)
- ▷ Broad overviews (summaries to provide guidance for different target audiences, such as clinician



Dissemination and diffusion

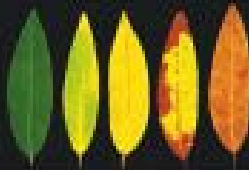
What do we know?

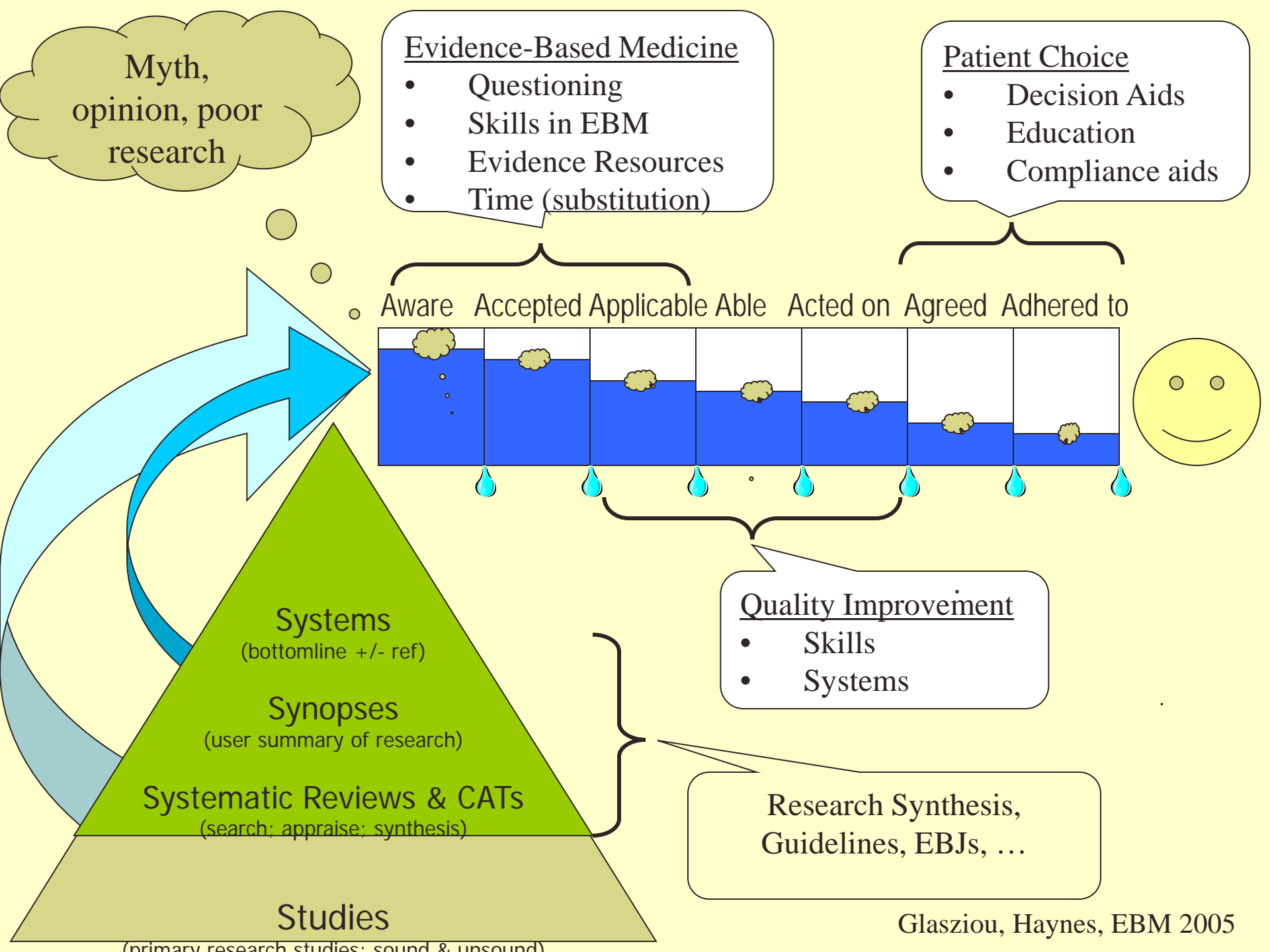
★ *Roger's work in rural sociology*



©
Key: A = rapid and complete adoption by a population; B = similar pattern following a lag phase; C = slower adoption and incomplete coverage; D = adoption followed by discontinuance

Figure 1-2 S-curves for different innovations and/or populations







Summary

- ▶ *Prevalence: Ignorance is common*
- ▶ *Causes: 560,000 research articles/year*
- ▶ *Prevention & Treatment - no “magic bullets”*
 - ▶ *Prevention: EBM skills*
 - ▶ *Treatment: interactive education, academic detailing, ...*



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