The Epidemiology of Ignorance

The leaky pipeline from research to patient care

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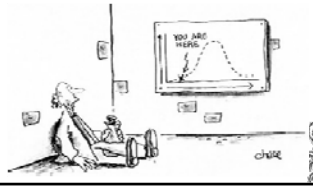
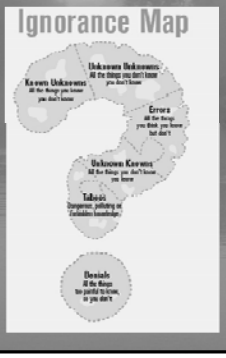
The Epidemiology of Ignorance and Knowledge in Health Care

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



Prevalence



Is bed rest e

A systematic re

- *10 trials of bed*
  - *no change in h*
  - *Increase in bac*
- *Protocols in UK recommend bed*
- *…evidence of h preceding...*

*Allen, Glasziou, Del M

Does bed rest after cervical or lumbar puncture prevent headache? A systematic review and meta-analysis

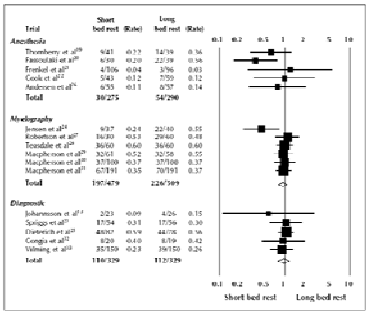
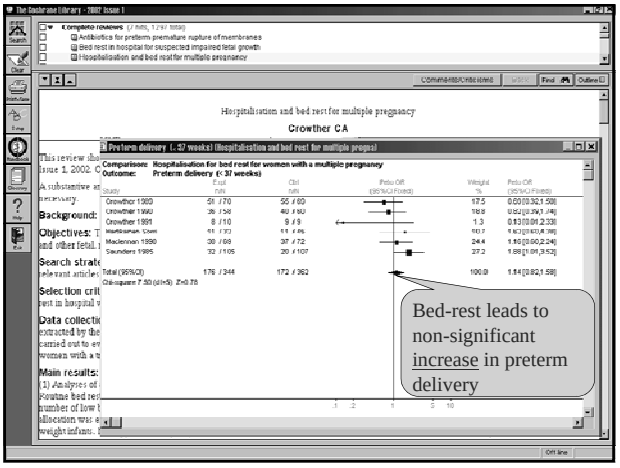
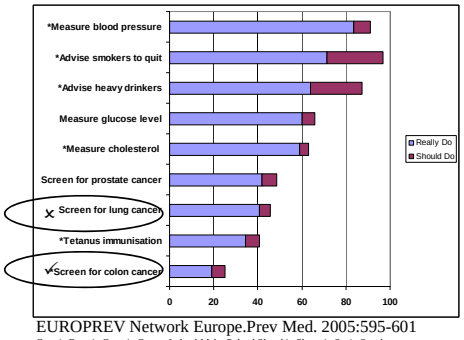


Fig. 2: Absolute and relative effect size for short bed rest versus long bed rest to prevent headache after lumbar or cervical puncture. (An expanded version of the figure, with relative risks and 95% confidence intervals, is available online at www.cmaj.ca/cgi/content/full/165/10/1265/DC1.)



GP beliefs and intentions for preventive procedures in 52 yr male

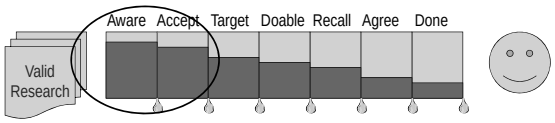


EUROPREV Network Europe.Prev Med. 2005:595-601

Croatia Estonia Georgia Greece Ireland Malta Poland Slovakia Slovenia Spain Sweden

Why? The Etiology/Pathogensis

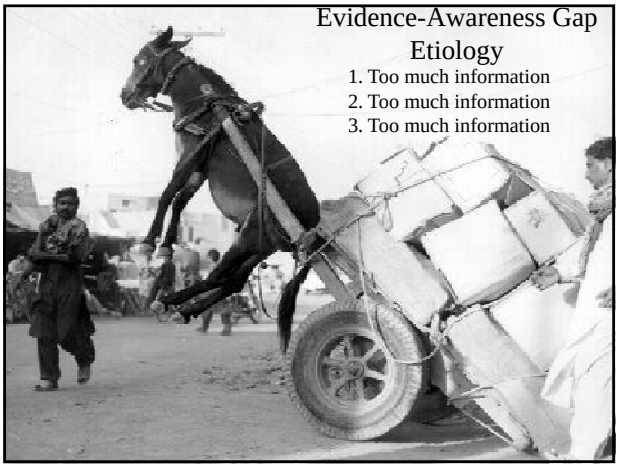
The "Leaks" from research & practice



If 80% achieved at each stage then

0.8 x 0.8 x 0.8 x 0.8 x 0.8 x 0.8 x 0.8 = 0.21

Evidence-Awareness Gap Etiology



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

JASPA*

(Journal associated score of personal angst)

J: *Are you ambivalent about renewing your* ***JOURNAL*** *subscriptions?*

A: *Do you feel* ***ANGER*** *towards prolific authors?*

S: *Do you ever use journals to help you* ***SLEEP****?*

P: *Are you surrounded by* ***PILES of PERIODICALS****?*

A: *Do you feel* ***ANXIOUS*** *when journals arrive?*

YOUR SCORE? (0 TO 5)

0 (?liar)
1-3 (normal range)
>3 (sick; at risk for polythenia gravis and related conditions)

* Modified from: BMJ 1995;311:1666-1668

Quant'e Informazioni?

Size of Medical Knowledge

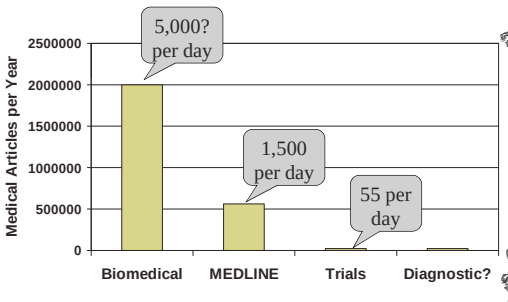
- *NLM MetaThesaurus*
  - *875,255 concepts*
  - *2.14 million concept names*
- *Diagnosis Pro*
  - *9,200 diseases*
  - *20,000 abnormalities (symptoms, signs, lab, X-ray,)*
  - *3,200 drugs (cf FDAs 18,283 products)*

1 per day for 25 years

Quant'e Informazioni?

Rule 31 – Review the World Literature Fortnightly*

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



And the information we need is widely scattered

Studies of BNP in MEDLINE

Natriuretic Peptide 10,110
MeSH BNP 2,204
PubMed: Clinical Queries
broad 799
narrow 82

Our systematic review
Of BNP accuracy for the
Diagnosis of heart failure

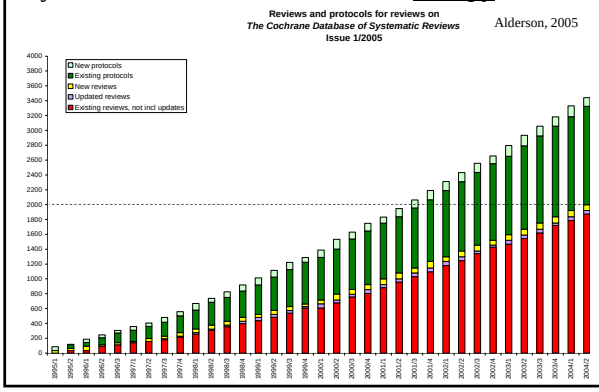
20 studies qualified;
Found in 16 journals

Age Ageing
Am J Med
Br Heart J
BMJ 3
Circulation
Clin Cardiol
Clin Chem Acta
Eur J Heart Fail
Hypertension
JAMA
J Card Fail
J Hypertens
Lancet 3
N Engl J Med
Rev Esp Cardiol
Rev Port Cardiol

From Doust, Pietrzak, Dobson, Glasziou. Archives Int Med 2004

Organising the Information: The Cochrane Library systematic reviews - 20% done for therapy

Alderson, 2005



Filtered knowledge
How much is valid AND relevant?

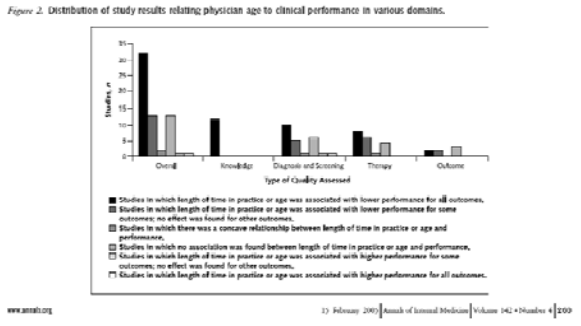
PROCESS

- *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*

www.evidence-basedmedicine.com

Prognosis of Ignorance

The Prognosis of Ignorance is Poor



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

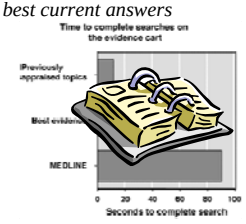
- *Setting: 64 residents at 2 New Haven hospitals*
- *Method: Interviewed after 401 consultations*
- *Questions*
  - *Asked 280 questions (2 per 3 patients)*
  - *Pursued an answer for 80 questions (29%)*
  - *Not pursued because*
    - *Lack of time*
    - *Forgot the question*
- *Sources of answers*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

Green, Am J Med 2000

Prevention: "Just in Time" learning

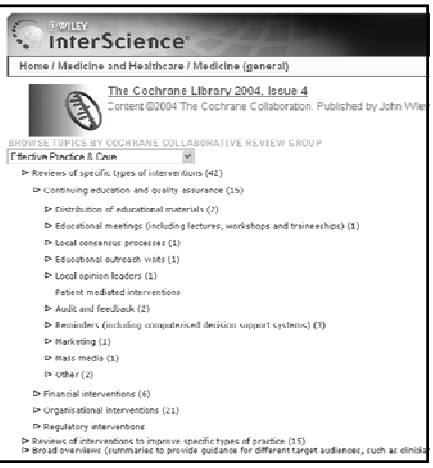
- *Shift focus to current patient problems ("just in time" education)*
  - *Relevant to YOUR practice*
  - *Memorable – and behaviour changed!*
  - *Up to date*
- *Skills and resources for best current answers*

Dave Sackett



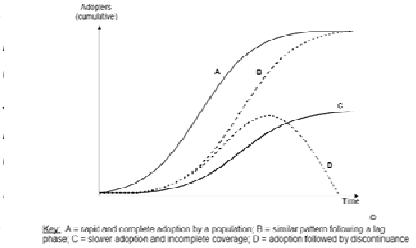
Treatmen

- *Difficult a*
- *No magic*
  - *Local op*
  - *Academi*
  - *Audit an*
  - *Reminde*



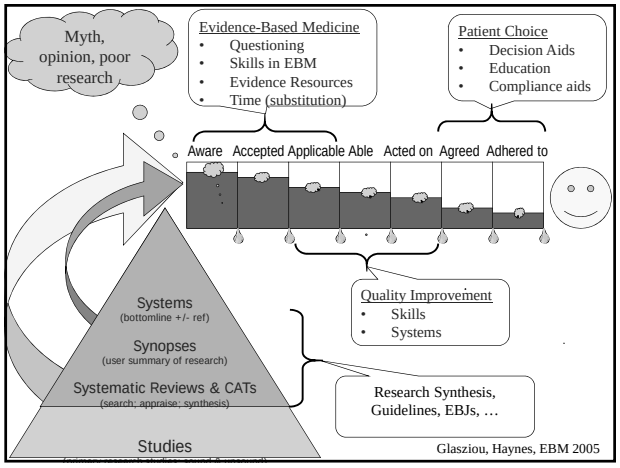
Dissemination and diffusion What do we know?

- *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



Glasziou, Haynes, EBM 2005

Summary

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