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Outline:

- A. Introduction of evidence –based medicine(EBM).

- B. Definition and components (skills) of EBM.

10 key skills for future graduates



Sense-making



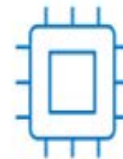
Social
intelligence



Novel & adaptive
thinking



Cross-cultural
competency



Computational
thinking



New media
literacy



Transdisciplinarity



Design
mindset



Cognitive load
management



Virtual
collaboration

Source: The Institute for the Future.

British Council (2017). 10 trends Transformative changes in higher education



“Men are generally ready to believe what they want to believe”

De Bello Gallico (BC 55)

Commentaries on the Gallic War

- Primary care physicians identify 2.4 clinical questions for every 10 encounters
(Barrie and Ward, 1997),
but they spend less than 15 minutes on average with each patient

1) Introduction:

Half of what we learn in medical school
is not any more correct 10 years later
(We just don't know which half)

??

Our problem is **progress**. Science evolves so fast that
what we know now will quickly be outdated if we don't
keep up with the literature.

Graduates required in today's world

Fluency in at least a second language

Ability to communicate and to use ITC

"Life -Long self Learning

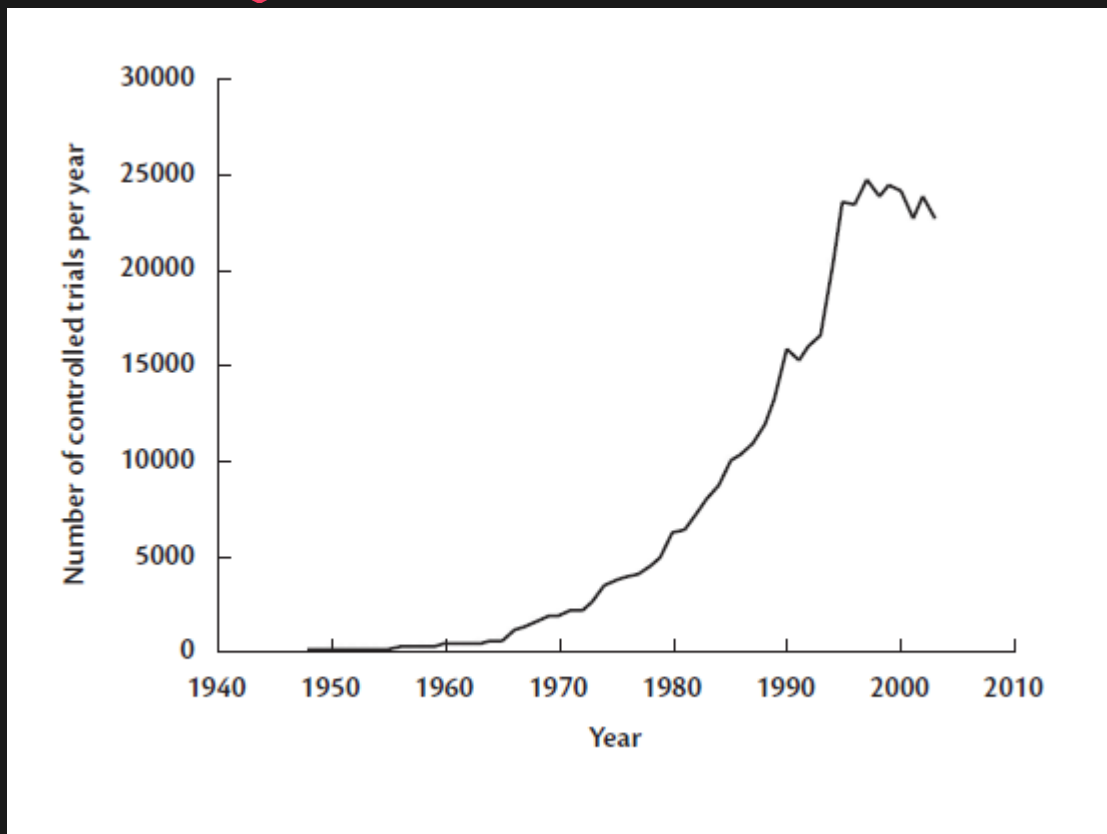
Technical Skills

Knowledge Gaps

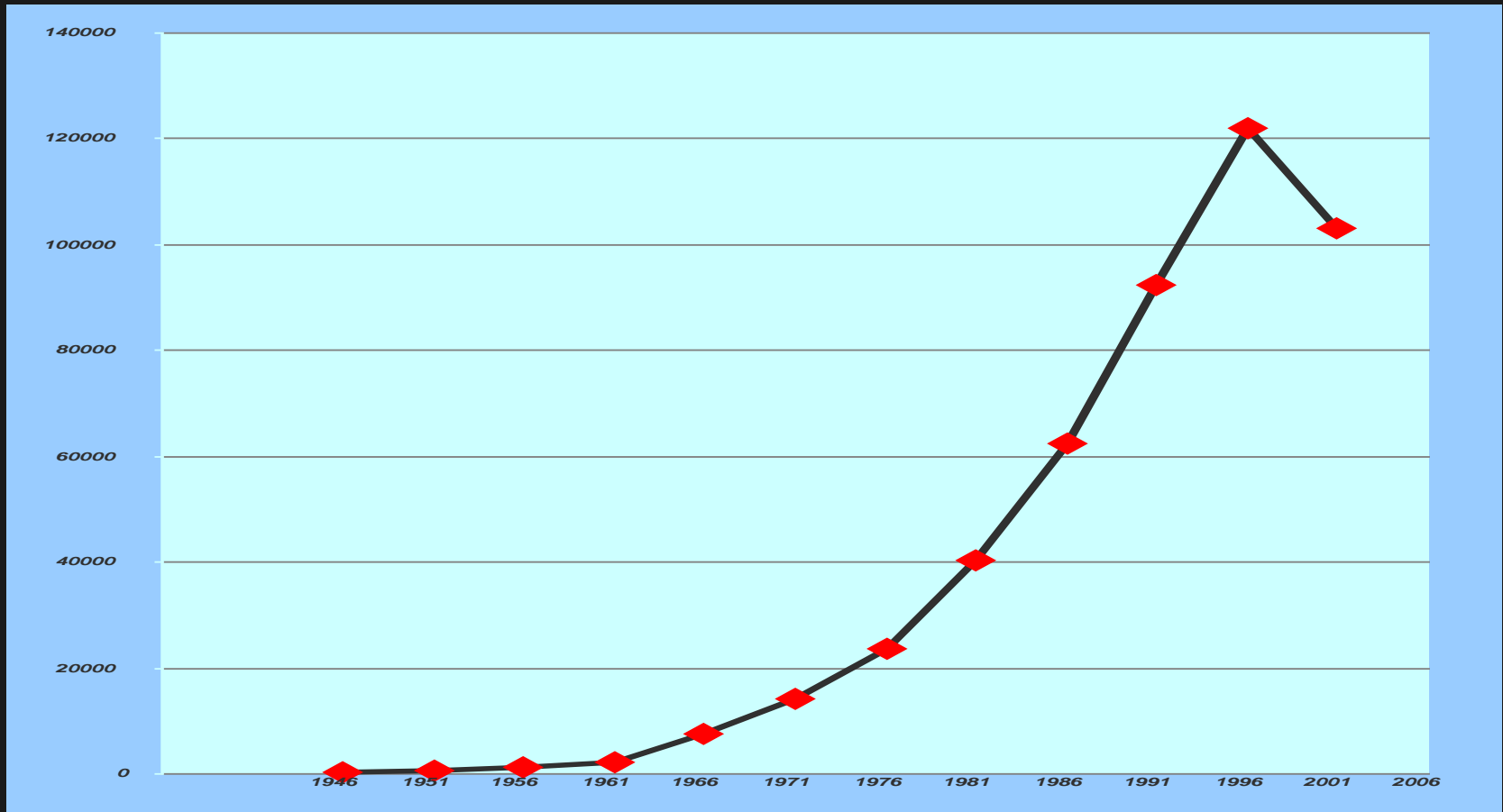
between what is known and what is done

- What are the “gaps” between research and practice?
- Why do such “gaps” exist?
- How can we close a specific gap?
- How can we close **all** gaps?

Too much



Number of randomised clinical trials per five-year interval







- Only 10-15% of the material which appear in print today will subsequently prove to be of lasting scientific value
- Only a tiny proportion of medical research breaks entirely new ground



As a consumer

- We are responsible for determining how to use the results of clinical research

The difficulty for clinicians

- making sense of a range of disparate literature
- Too many journals,
- many trials show great uncertainty

(because of small size) or even conflict in their estimation of net effect

some studies showing harm others show benefit)

- Do not fail to use the many comprehensive sources of evidence-based information.

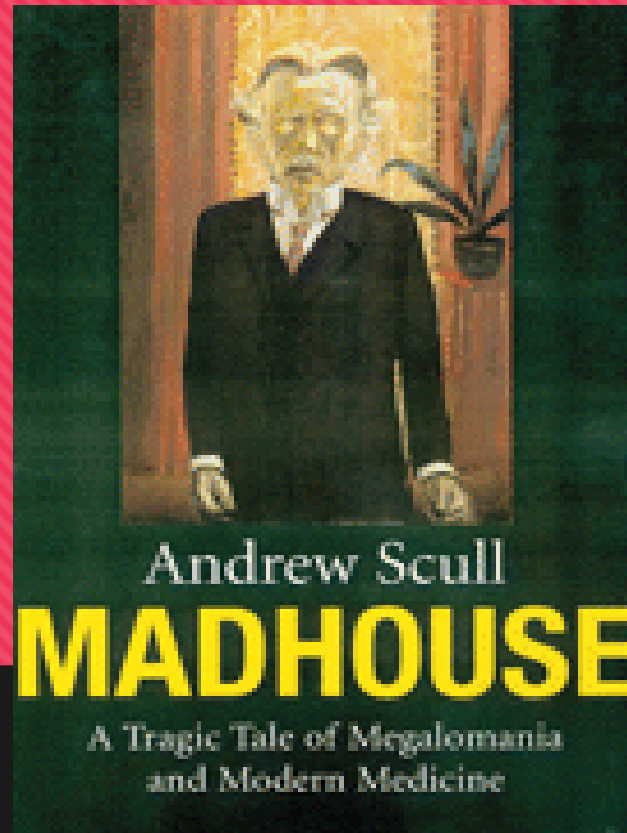
- How to make best use of medical literature
- Help you to read and interpret medical

- How can diligent physicians narrow the gap between their current behaviors and best practices?

History

- Frederick ,king of sisly 1192 -1250 AD was interested in Digestion
- Took two knights gave them identical meals and then send one for hunting the other ordered to bed

Dr. Henry Cotton, chief psychiatrist Mental Hospital in New Jersey 1916 to 1933 relied on "focal sepsis" to justify his extreme treatments,



unwilling to change

- Although clinical experience is a powerful educator it is inherently biased
- Practitioners may be unwilling to change behaviour despite emerging evidence:
 - Reluctant to alter long-standing practice
 - Clinical "inertia"

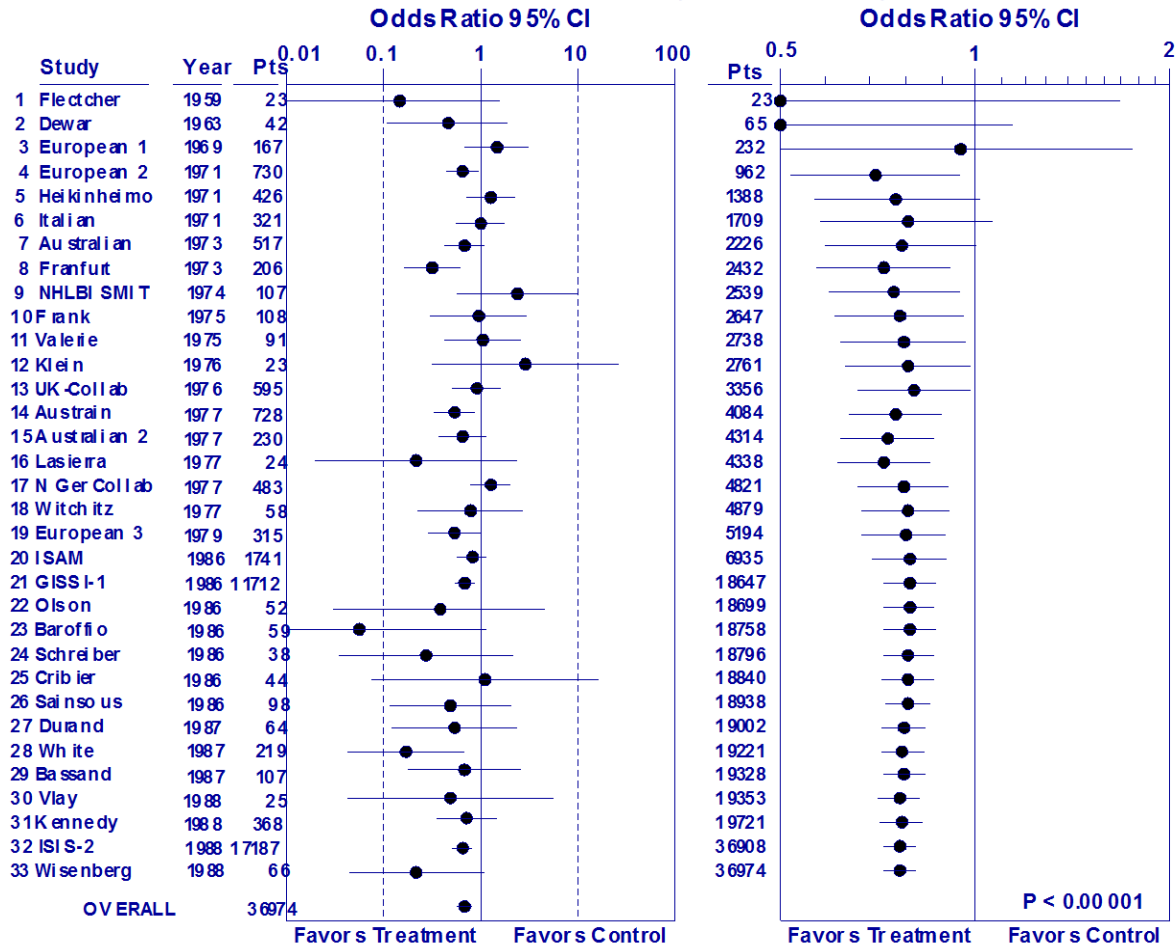
Inertia

Failure to

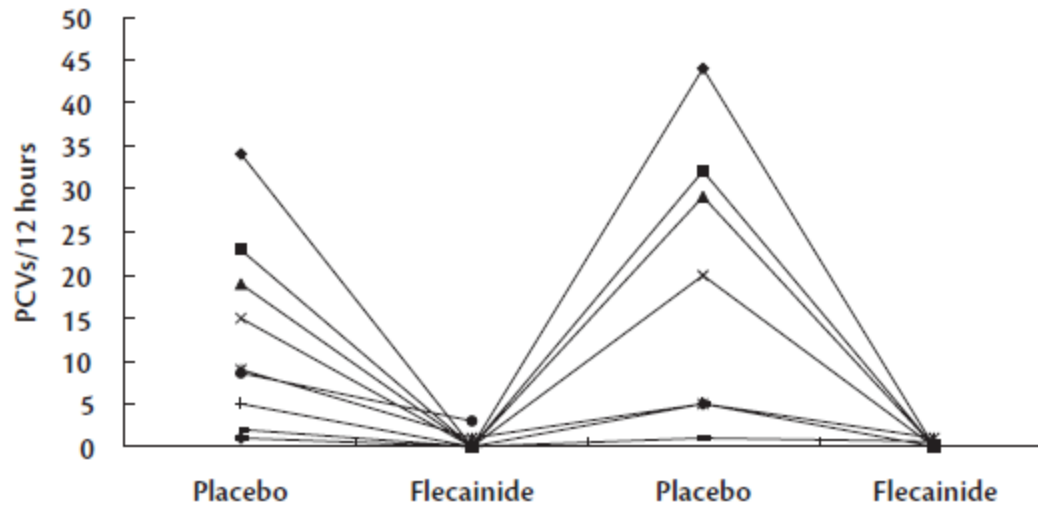
- initiate
- Intensify
- Modify *therapy as indicated*

Intravenous Streptokinase Therapy for Acute Myocardial Infarction

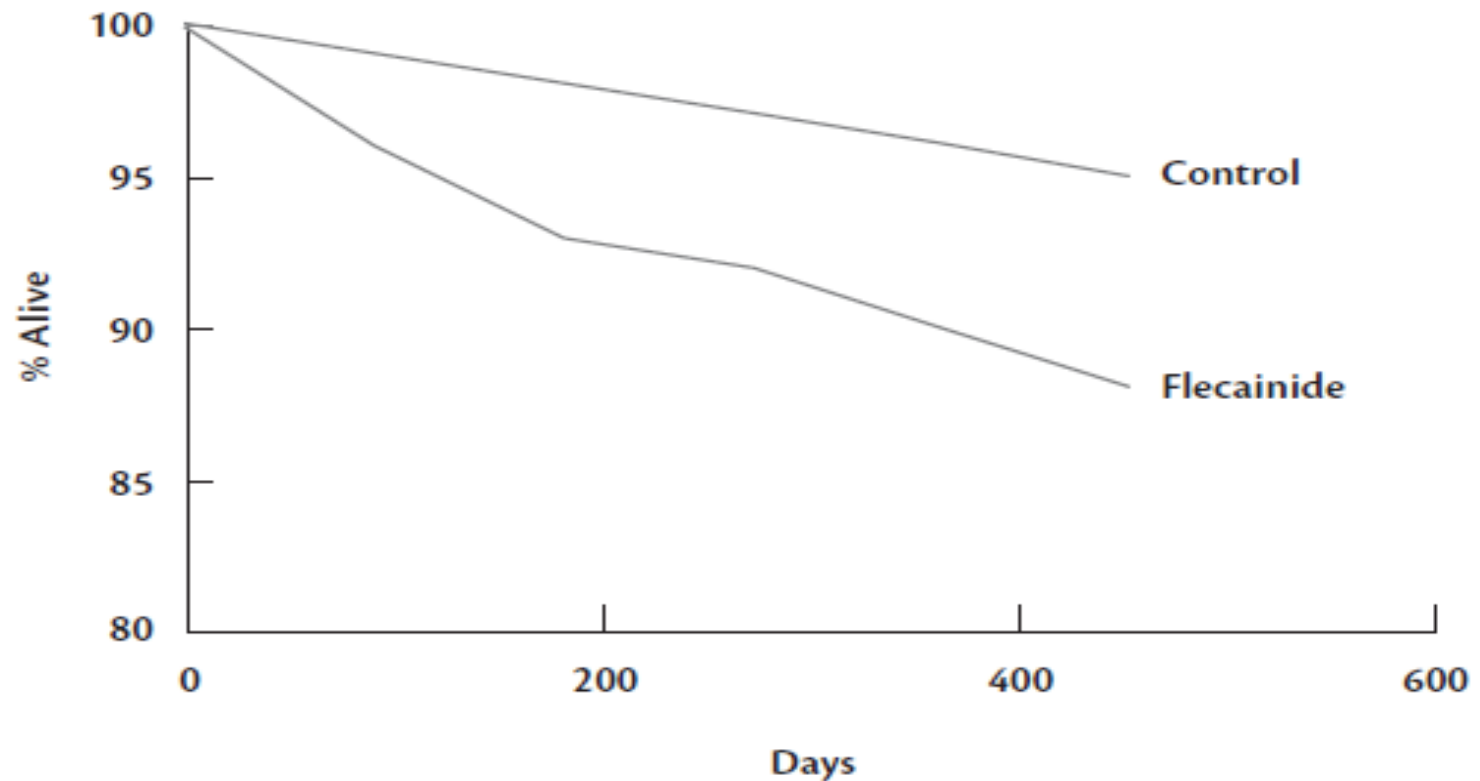
Fixed Effects Model (Mantel-Haenszel)



Suppression of arrhythmias in nine patients
(Each line represents one patient)



Cardiac arrhythmia suppression trial





'There's something wrong Mrs. Cruz. We need to do more tests. According to this study you should have had a stroke a year ago!'

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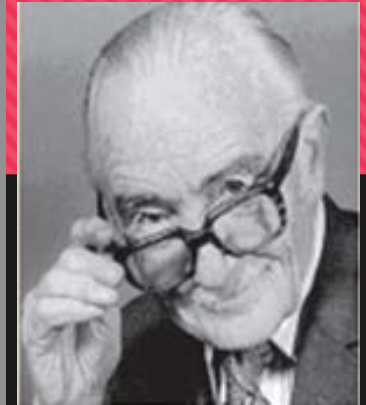
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SYT

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- Do not assume that results even from a well-done study are applicable to your population of patients.



medical researcher in the United Kingdom who contributed to the development of epidemiology as a science. In an influential book published in 1972, *Effectiveness and Efficiency*, he drew attention to the great collective ignorance at that time about the effects of health care. He recognized that doctors did not have ready access to reliable reviews of available evidence. In a 1979 article, he said:

'It is surely a great criticism of our profession that we have not organized a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials:

State of mind

- The concept of EBM is nothing more than the state of mind that every clinical teacher hopes to develop in their students

Forces the mind to think differently

- Structuring my new knowledge so that am comfortable to teach it is challenging,
- "it benefits me and my approach to treating patients."

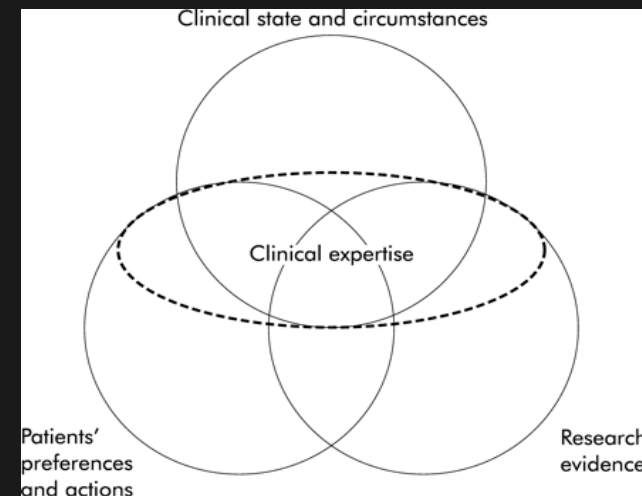
EBM

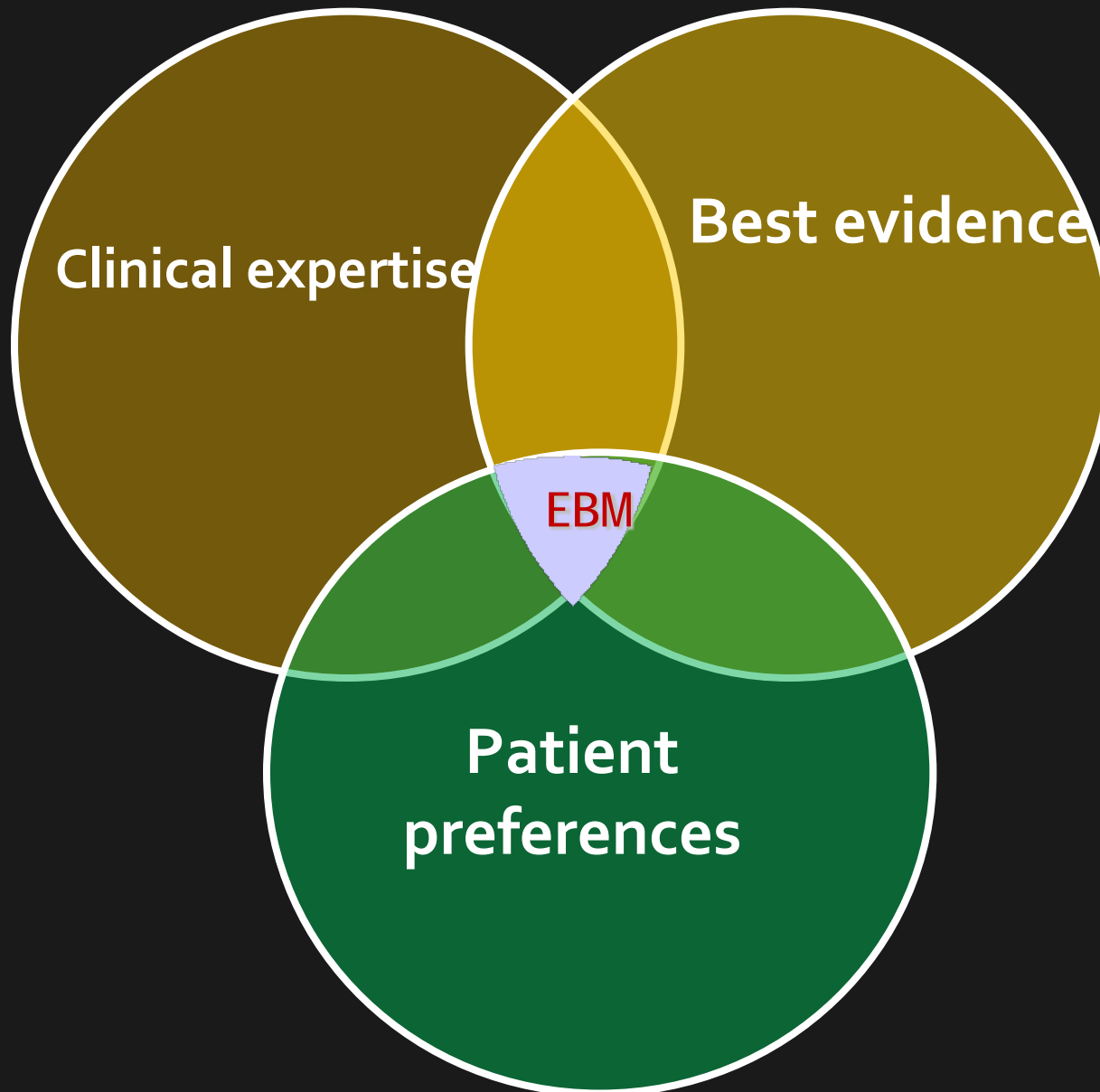
- Evidence based medicine (EBM) involves the judicious use of the best available evidence to inform decisions about patient care

What is Evidence-Based Medicine?

“Evidence-based medicine is the integration of best research evidence with clinical expertise and patient values”

- *Sackett & Straus*





- Evidence-based medicine (EBM)—asking clear, relevant clinical questions, finding appropriate studies, critically appraising the literature, and implementing changes in practice behavior

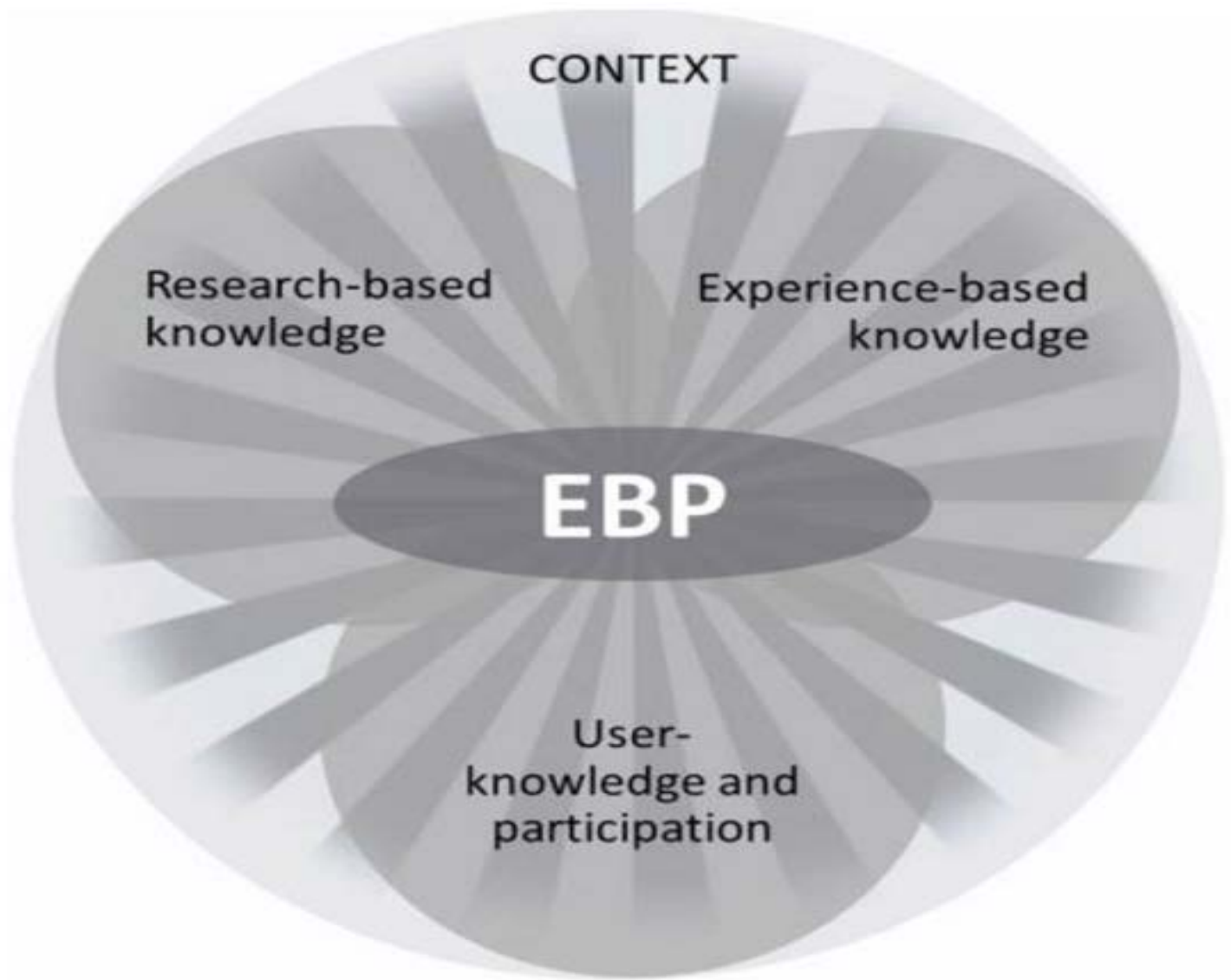


Fig. 1 Model of evidence-based practice (EBP) [51]

- Evidence Based Practice (EBP) is a universal philosophy for decision making in health care which considers the patient's perspective, therapist expertise and best available research evidence

Definition

- EBM is the use of mathematical estimates of the risk of benefit and harm , derived from high –quality research on population sample ,to inform clinical decision – making in the diagnosis ,investigation or management of individual patient

- there is more to evidence than just numbers.

EBM

- Greeted with mixed reaction
- The bulk of the medical profession appears to be slightly hurt by the concept
- Politicians and those who administrate health services have greeted the motion with enormous glee

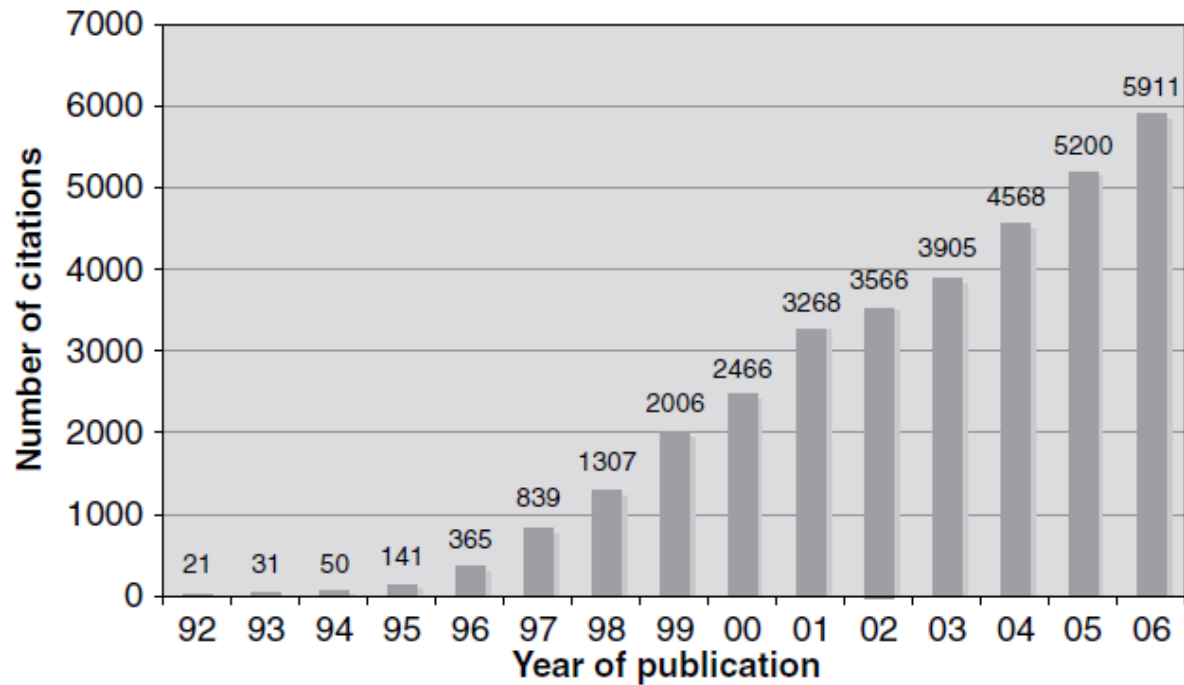


Figure 1.1 MEDLINE citations containing the phrase 'evidence-based' in the title or abstract

Process of EBP

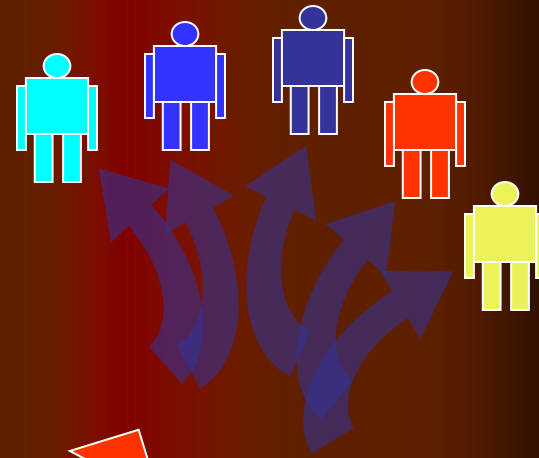
Patient dilemma 

Ask

Act & Assess

Acquire

Principles of evidence-based practice

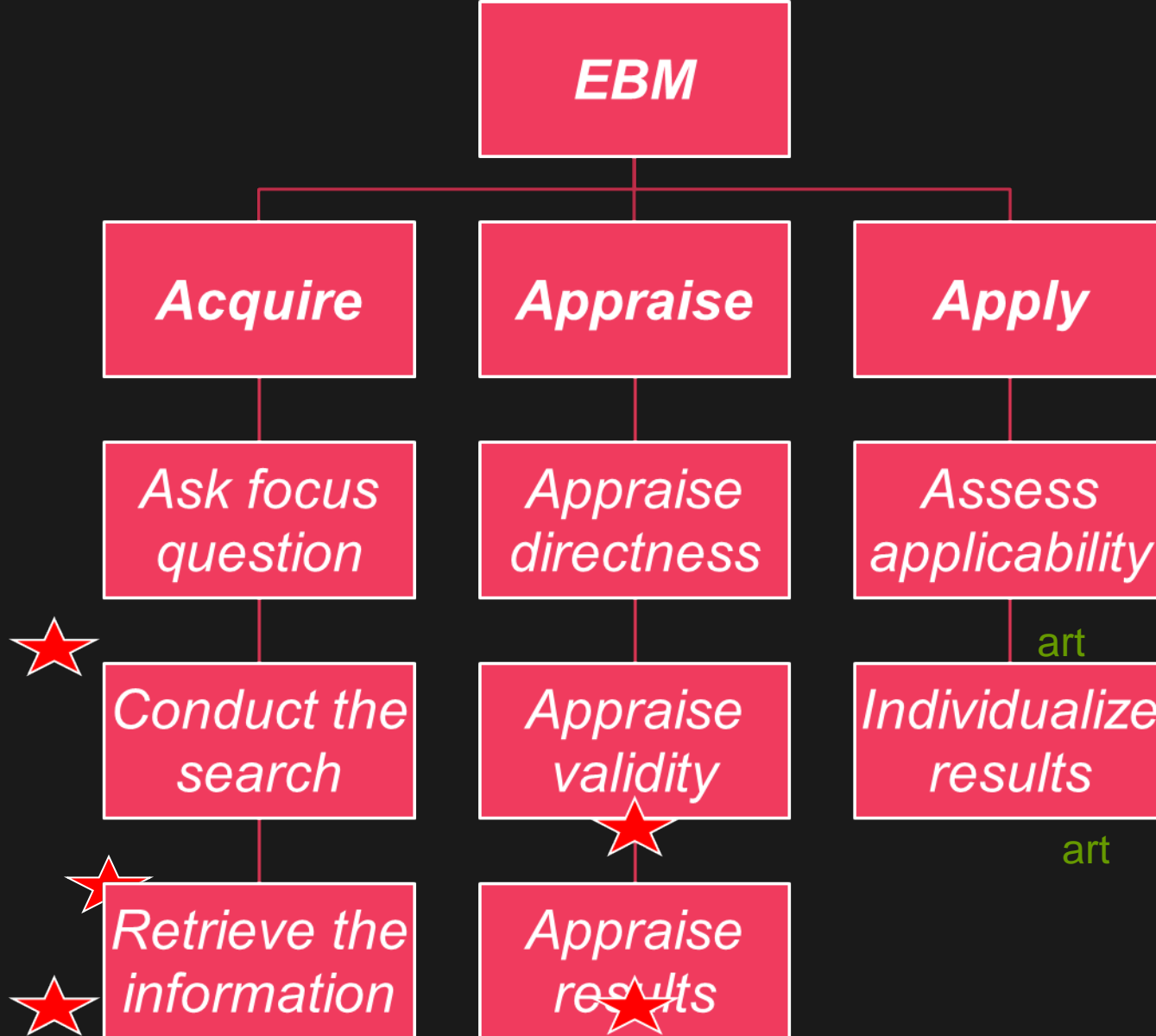


Appraise

Hierarchy of evidence

Apply

Evidence alone does not decide – combine with other knowledge and values

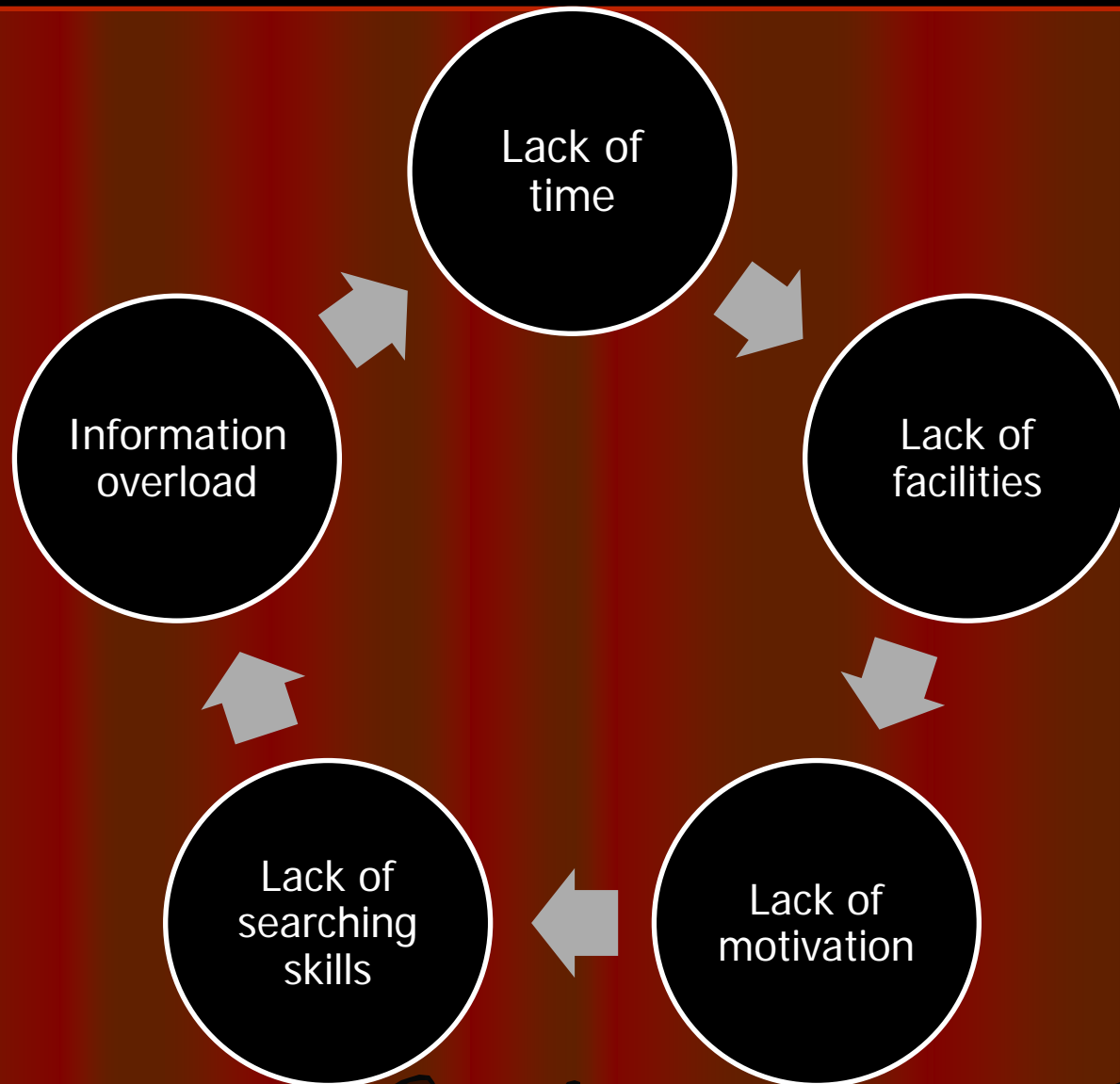


Critical appraisal

- The process of systematically examining research evidence to assess its
- Validity
- Results
- Relevance
- before using it to inform decision

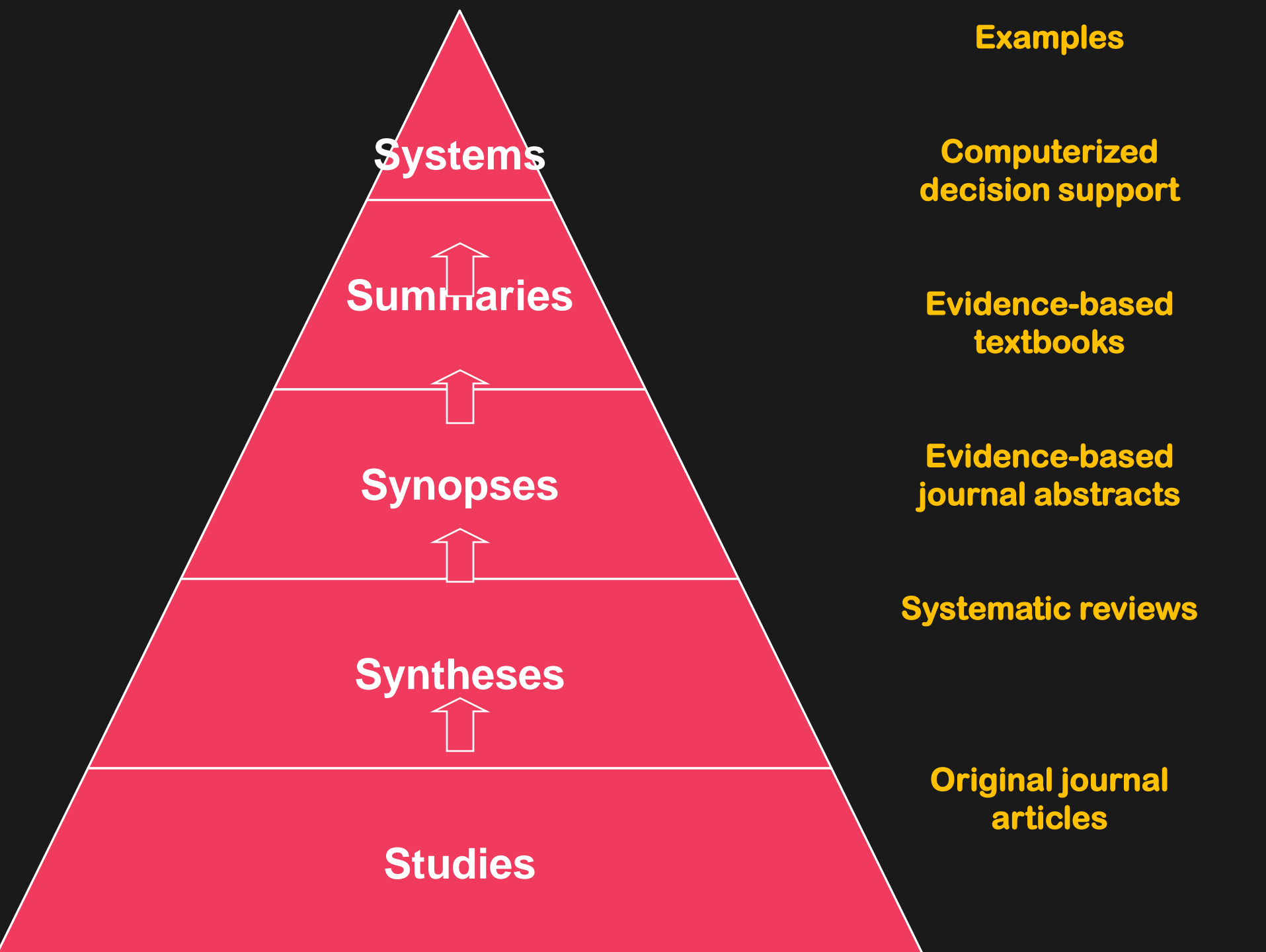
To be an intelligent reader of the
medical literature

Barriers Abound



Evolving EBM

- Pre EBM: Passive diffusion ("publish it and they will come")
- Early EBM: Pull diffusion ("teach them to read it and they will come")
- Current EBM: Push diffusion ("read it for them and send it to them")
- Future EBM: Prompt diffusion ("read it for them, connect it to their individual patients")



EBM

- Should be part of the everyday practice of all physicians

closing your eyes and having a think

- ask yourself these questions:
- Can I apply it in my work?
- What barriers am I likely to come across?
- How will I manage these barriers?
- How will I know if I,am doing things better?