Evidence-Based Medicine (EBM): An overview of the informational foundations

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Programme outline

Key points

1. Introduction
   “Are not all medical decisions based on good evidence?”

2. Evidence-based medicine
   Origins, principles and perspectives.

3. Key publication types
   Systematic reviews and meta-analyses.

4. Key information sources
   Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.

5. Quo vadis EBMP?
   Joanna Briggs Institute (JBI).
Programme task
*Identify the informational foundations of EBMP.*
Programme “first aid”
References and assistance.

Ovid®

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Cochrane

Click here

Click here

Click here

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Wolters Kluwer
When you have to be right
1. Introduction

"Are not all medical decisions based on good evidence?"

Not necessarily...

Throughout the ages, the informational basis of medical practice has varied between opinion and evidence. Often it has been a mixture of both in a variety of proportions.

Sometimes opinion and guesswork has triumphed over evidence, and not always to the patient’s advantage. Consider for example the work and subsequent fate of Ignaz Semmelweis (1818-1865).
1. Introduction

“Are not all medical decisions based on good evidence?”

Obtaining the evidence is one thing...

“Ignaz Philipp Semmelweis (born Semmelweis Ignác Fülöp; 1 July 1818 - 13 August 1865) was a Hungarian physician of German extraction now known as an early pioneer of antiseptic procedures. Described as the "savior of mothers", Semmelweis discovered that the incidence of puerperal fever (also known as "childbed fever") could be drastically cut by the use of hand disinfection in obstetrical clinics. Puerperal fever was common in mid-19th-century hospitals and often fatal, with mortality at 10%-35%. Semmelweis proposed the practice of washing hands with chlorinated lime solutions in 1847 while working in Vienna General Hospital's First Obstetrical Clinic, where doctors' wards had three times the mortality of midwives' wards. He published a book of his findings in Etiology, Concept and Prophylaxis of Childbed Fever.”

1. Introduction

“Are not all medical decisions based on good evidence?”

...having people act upon it is another!

“Despite various publications of results where hand washing reduced mortality to below 1%, Semmelweis’s observations conflicted with the established scientific and medical opinions of the time and his ideas were rejected by the medical community. Some doctors were offended at the suggestion that they should wash their hands and Semmelweis could offer no acceptable scientific explanation for his findings. Semmelweis’s practice earned widespread acceptance only years after his death, when Louis Pasteur confirmed the germ theory and Joseph Lister, acting on the French microbiologist’s research, practiced and operated, using hygienic methods, with great success. In 1865, Semmelweis was committed to an asylum, where he died at age 47 of pyaemia, after being beaten by the guards, only 14 days after he was committed.”

1. Introduction

“Are not all medical decisions based on good evidence?”

But what Ignaz Semmelweis knew then...

1. **Introduction**

“Are not all medical decisions based on good evidence?”

...we are now realising!

Better health is not a science problem, it’s an information problem.

Source: It's time to redesign medical data by Thomas Goetz
http://www.ted.com/talks/thomas_goetz_it_s_time_to_redesign_medical_data
2. Evidence-based medicine
*Origins, principles and perspectives.*

The man Archie Cochrane.....

“Archie Cochrane was born in the Scottish cloth-manufacturing town of Galashiels in 1909. He studied natural sciences at Cambridge, and completed his medical studies in London after serving with a field ambulance unit during the Spanish Civil War. He spent most of his career as a medical researcher in Wales, conducting several long-term epidemiological studies into tuberculosis and other chest diseases among the coal mining communities of South Wales. The success of these studies earned Cochrane the respect and admiration of his peers, but his international renown is founded on the publication in 1972 of his book ‘Effectiveness and Efficiency: random reflections on health services’.”

2. Evidence-based medicine

_Origins, principles and perspectives._

....and his legacy....

“Cochrane continued to be critical of the medical profession for failing to seek evidence to support treatment recommendations. In a paper published in 1979 he famously wrote, ‘It is surely a great criticism of our profession that we have not organised a critical summary by speciality or subspeciality, adapted periodically, of all relevant randomised controlled trials’.”


http://www.cochrane.org
2. Evidence-based medicine

*Origins, principles and perspectives.*

....which has now become this....

See http://www.cochrane.org/about-us/our-logo
2. Evidence-based medicine
*Origins, principles and perspectives.*

"Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available evidence from systematic research."

Source: „What is evidence-based medicine and what is not?“ D.L. Sackett et al.

*Fig. 2. Three quintessential components of evidence-based medicine (EBM).*

Archie Cochrane and His Vision for Evidence-Based Medicine. Shah, Hriday; Chung, Kevin

2. Evidence-based medicine
Origins, principles and **perspectives**.
3. Key publication types

**Systematic reviews and meta-analyses.**
3. Key publication types

Systematic reviews and meta-analyses.

Considering clinical significance

4. Key information resources

Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.
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Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.

**Essentials:**

Provider: NLM, USA
Type: Bibliographic
Focus: Biomedical
Scope: 1946 to date
Journals: 5,600
Records: 23 million
4. Key information resources
Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.

Question: How can I locate RCTs on Ovid MEDLINE?

Answer: Limits

Note: Limit is “Publication Types”

Answer: Search Filters

OR

Source: Click here
4. Key information resources
Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.

Essentials:

Provider: Elsevier, NL
Type: Bibliographic
Focus: Pharmaceutical
Scope: 1974 to date
Journals: 7,500
Records: 22 million
4. Key information resources
Cochrane (SRs), Cochrane (RCTs), Ovid MEDLINE, Embase.

Question: How can I locate RCTs on Embase?

Answer: Limits

Note: Limit is “Clinical Trials”

Answer: Search Filters

Source: Click here
5. Quo vadis EBMP?

Joanna Briggs Institute (JBI)
Summary

EBMP has sound informational foundations.
Thank you for your time!

Contact information.

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*Figure 2. Structural features of RecQ DNA helicases. Sit down, relax and unwind: structural insights into RecQ helicase mechanisms.* Killoran, Michael; Keck, James  
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