

## Overview of Meta-analysis

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## Meta-analysis

Quantitative approach for systematically combining results of previous research to arrive at conclusions about the body of research



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## Need of Evidence Based Medicine

- Our daily need of valid evidence for diagnosis, therapy, prognosis, prevention
- Textbooks are frequently outdated
- Experts are often wrong
- Explosion in medical publications and journals
- Didactic CME and seminar not able to change the practice

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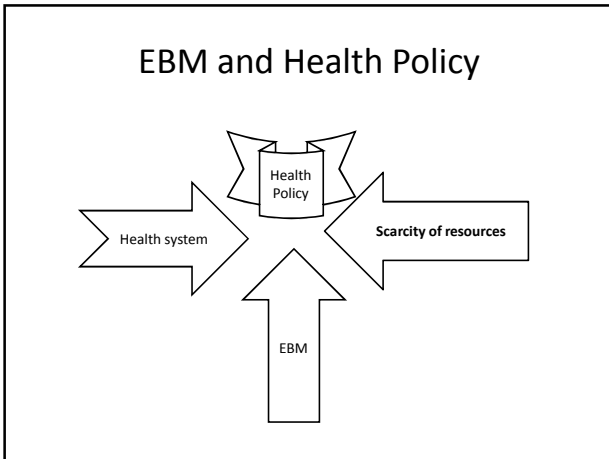
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- ### 5 A's of EBM
- Asking an answerable question (about prevention, diagnosis, prognosis, therapy, causation, etc) based on clinical need
  - Acquiring the best evidence with which to answer that question
  - Appraising critically that evidence for its validity (closeness to the "truth"), impact (size of the effect), and applicability (usefulness in our clinical practice)
  - Applying the evidence, our clinical expertise and our patient's unique biology, values and circumstances in an integrated
  - Assessing The outcomes for our patients ( or our effectiveness and efficiency in executing the 4 'A's) and seeking ways to improve them both for next time

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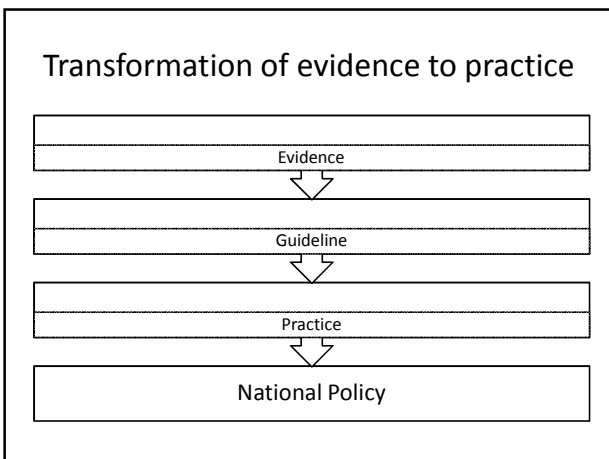
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- Every decision will have to be based on a systematic appraisal of the best evidence available in the context of the prevailing values & resources available

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### **Components of Meta-analysis**

- **Quantitative : numbers**
- **Systematic : methodical**
- **combining: putting together**
- **previous research**
- **conclusion**

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### **Steps of Meta-analysis**

- **Identify studies**
- **Determine eligibility of studies**
  - Inclusion criteria
  - Exclusion criteria
- **Extract Data from the studies**
- **Analysis**

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**Heterogeneity approach**

- Fixed effect model
- Random effect model

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**References**

<http://www.cochrane.org/resources/handbook/index.htm>  
<http://www.cochrane-net.org/openlearning/>  
The Revman user guide.  
<http://www.ccims.net/RevMan/documentation.htm>

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