

# EBM Core Competencies: An Area of Controversy

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**McMaster University**



# Conflicts of interest

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- Work with lots of guideline groups
- Co-chair GRADE working group
- Consultant UpToDate

# Who are you and your experience?

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- Clinicians – look after patients or used to?
- Work closely with non-academic clinicians?
  - Colleagues or students (practicing clinicians, trainees)

# Questions

- True or false?
- Conducting critical appraisal of primary research articles core skill/activity EBM clinician
- Conducting critical appraisal
  - Involves assessing risk of bias
- Assessing risk of bias requires reading methods and results

# Estimates of behavior

- Non-academic practicing clinicians
- What % have read the methods and results of an original journal article in the last 6 months
  - Less than 5%
  - 5 to 20%
  - 20 to 50%
  - More than 50%

# Provision of high quality care

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- Clinicians who never read methods and results can provide high quality evidence-based clinical care?

# My beliefs

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- Very few clinicians read methods and results
- Many provide basic EB high quality care
- Few provide most advanced EB care
  - Shared decision-making

# How did I get to these beliefs?

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- 1990 took over internal medicine residency
- Mission to teach new approach to medicine
- Needed a name: EBM



# Evidence-Based Medicine

## A New Approach to Teaching the Practice of Medicine

Evidence-Based Medicine Working Group      JAMA, November 4, 1992—Vol 268, No. 17

EBM represents a new paradigm for medical practice

Less emphasis intuition, clinical experience, pathophysiologic rationale

Instead evidence from clinical research

## Users' Guides to the Medical Literature

I. How to Get Started      JAMA, November 3, 1993—Vol 270, No. 17

Andrew D. Oxman, MD, MSc; David L. Sackett, MD, MSc; Gordon H. Guyatt, MD, MSc;  
for the Evidence-Based Medicine Working Group

# Evolution of EBM

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- Residency program the laboratory
- Teaching all residents to critically appraise
- All would be reading methods and results
- Maximal training compatible with residency

# Evolution of EBM

- Seven years later
  - Failure in initial goals
  - Most won't have skills sophisticated appraisal
  - None will have the time

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Practitioners of evidence based care

*BMJ* 2000;320:954-5

*Not all clinicians need to appraise evidence from scratch but all need some skills*

- Results and applicability still crucial
  - Trade offs benefits and harms
  - Shared decision-making

**Consensus Statement** | Medical Education

# Core Competencies in Evidence-Based Practice for Health Professionals

## Consensus Statement Based on a Systematic Review and Delphi Survey

Loai Albarqouni, MD, MSc; Tammy Hoffmann, PhD; Sharon Straus, MD, MSc; Nina Rydland Olsen, PhD; Taryn Young, PhD;  
Dragan Ilic, PhD; Terrence Shaneyfelt, MD, MPH; R. Brian Haynes, MD, PhD; Gordon Guyatt, MD, MSc; Paul Glasziou, MBBS, PhD

*JAMA Network Open*. 2018;1(2):e180281. doi:[10.1001/jamanetworkopen.2018.0281](https://doi.org/10.1001/jamanetworkopen.2018.0281)

# What Clinicians Need to Know

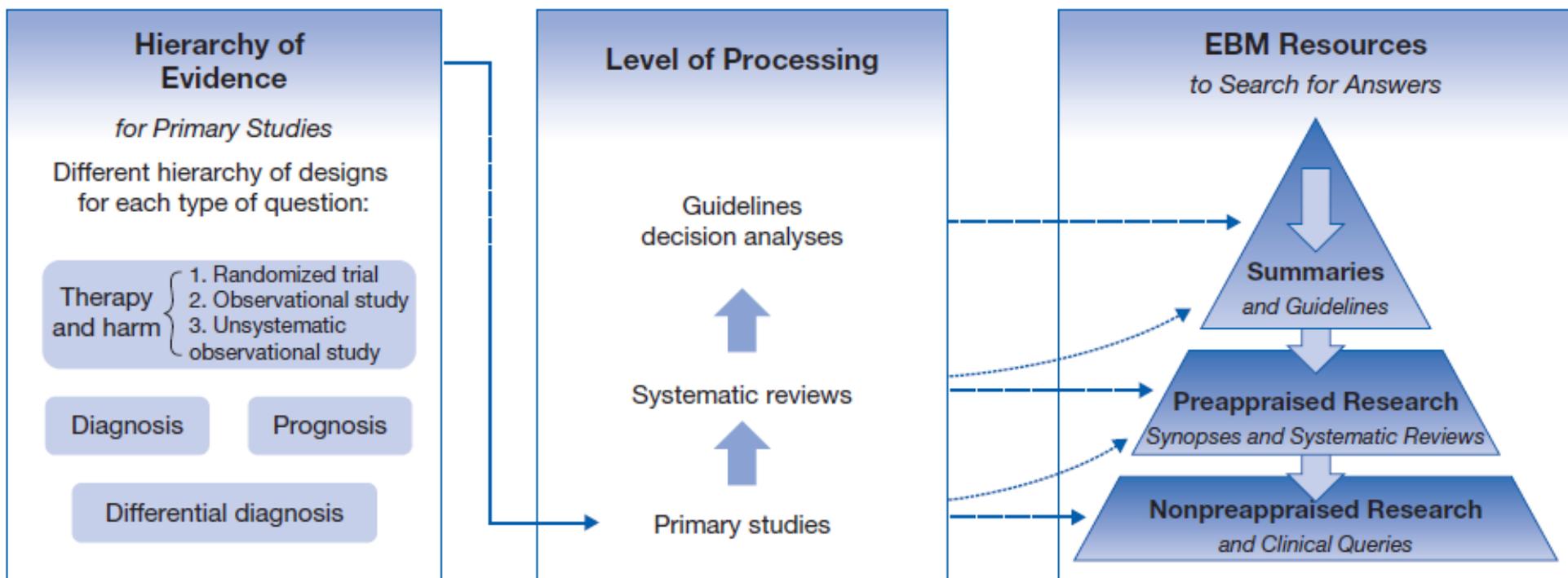
- Don't need
  - RoB
    - RCTs concealment, blinding, LFUP, ITT
    - Observational adjustment

0.4 Practice the 5 steps of EBP: ask, acquire, appraise and interpret, apply, and evaluate<sup>a</sup>

- Still teach – why?

0.3 For each type of clinical question, identify the preferred order of study designs, including the pros and cons of the major study designs

## From Evidence to Evidence-Based Resources



# >110 organizations have adopted **GRADE**



# What they need to know

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- What do strong, weak recommendations mean?
- What does high to very low quality evidence mean?
  - Teach RoB, imprecision, inconsistency, indirectness, PB
- What is a relative and an absolute effect
  - What is the relation between the two
- Recognize trivial, small, moderate, large effects

# Bad sore throat in last decade?

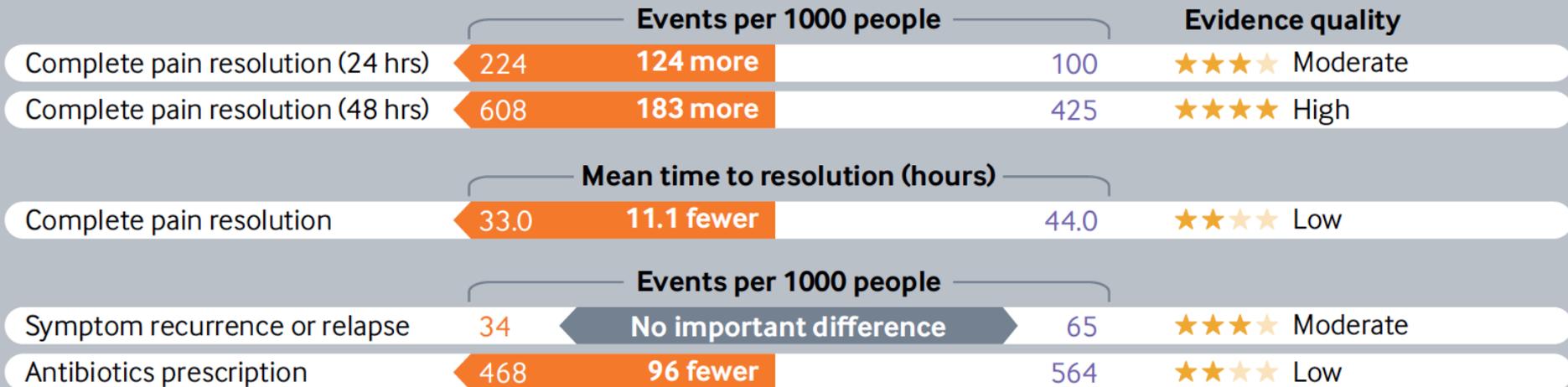
## Single dose of dexamethasone

### Comparison of benefits and harms

Favours steroids

No important difference

Favours no steroids



Age 65–74

Weak

Why? 

### Comparison of benefits and harms

Favours  
transfemoral TAVI

Favours SAVR

Events per 1000 people – within 2 years

Quality of evidence

Deaths	73	19 fewer	92	★★★★ Moderate
Strokes	56	14 fewer	70	★★★★ Moderate
Aortic valve reinterventions	10	7 fewer	3	★★★★ Moderate
Pacemaker insertions	226	134 fewer	92	★★★★ Moderate
Life-threatening bleeds	161	252 fewer	413	★★★★ High
New onset atrial fibrillation	134	178 fewer	312	★★★★ High
Moderate / severe heart failure	87	18 fewer	69	★★★★ Moderate

Events per 1000 people – within 10 years

Aortic valve reinterventions	198	137 fewer	61	★★★★ Very low
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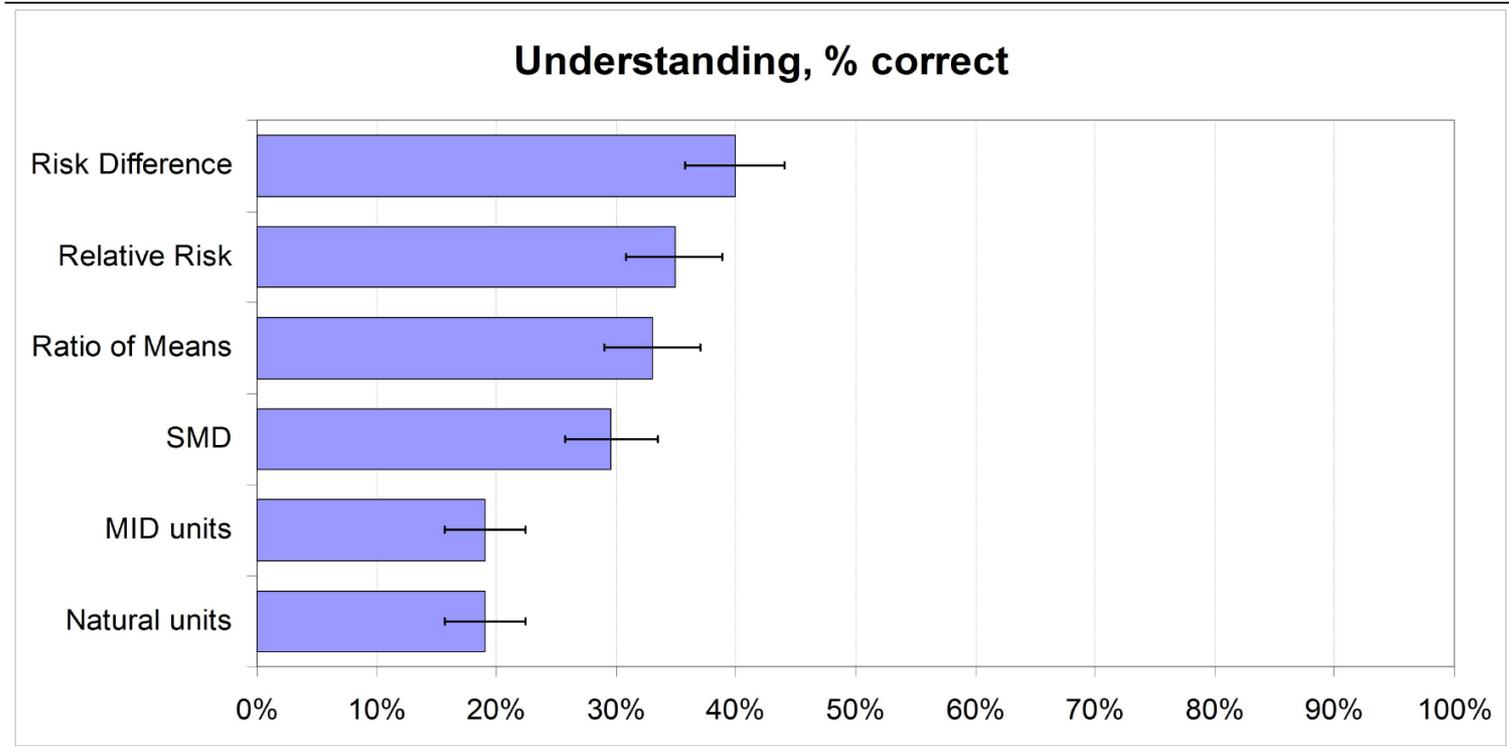
Length of hospital stay

Median days in hospital	8	4 fewer	12	★★★★ High
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# Cross-sectional, paper-based survey

## Academic centers in 8 countries, Internal and family medicine, 531/610 (87%)

**Figure 3:** Understanding of the presentation approaches,  $n = 531$



**Problem: Clinicians don't understand results  
So how can they do shared decision-making?**

# Implications for education

- Critically appraise not a core skill
- Evidence summary
  - Magnitude of effect
  - Quality/certainty of evidence
- Much less RoB, critical appraisal
- Much more results, applicability
- Much less primary studies
- Much more systematic reviews, guidelines
- Do you tweet?

**McMaster University**

**EBCP WORKSHOP**  
McMaster Evidence-Based  
Clinical Practice Workshops

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McMaster Centre for Evidence-Based  
Clinical Practice, birthplace of Evidence-  
Based Medicine, promoting the use of  
the best evidence to inform clinical  
decisions

- Hamilton, On, Canada
- ebcp.mcmaster.ca
- 10 Photos and videos

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