

# Evidence Based Medicine: What is it, and how to use it

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# Disclosures

- **I have no actual or potential conflict of interest in relation to this program/presentation.**
- **I will discuss occasional instances of working outside the available body of evidence based guidelines in the interest of clinical efficacy, reducing needless disability, and preventing medical cases (medical managed care) from becoming legal cases (legal managed care).**

# Evidence Based Medicine

## Audience Question #1

- Would you accept a medical intervention that was physician recommended but that had not been backed/proven by a double blinded, placebo controlled evidence based study?



# Audience Question #2

- If you were to jump out of an airplane, would you accept a parachute if offered to you?



Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomized controlled trials. GCS Smith, JPPell. BMJ Vol 327



GCSSmith, JPPell. BMJ, Vol 327.

# Parachute use to prevent trauma from gravitational challenge

- What we already know
  - Parachutes are widely used to prevent trauma after gravitational challenge
  - Parachute use is associated with adverse effects due to failure of the intervention and iatrogenic injury
  - Studies of free fall do not show 100% mortality

# Parachute use to prevent trauma from gravitational challenge

- What this study adds
  - No randomized controlled trials of parachute use
  - Basis for parachute use is purely observational, apparent efficacy possibly explained by “healthy cohort” effect
  - Individuals who insist all interventions be validated by RCT need to come down to earth with a bump

# Evidence Based Medicine...

## 3-2-1 JUMP!

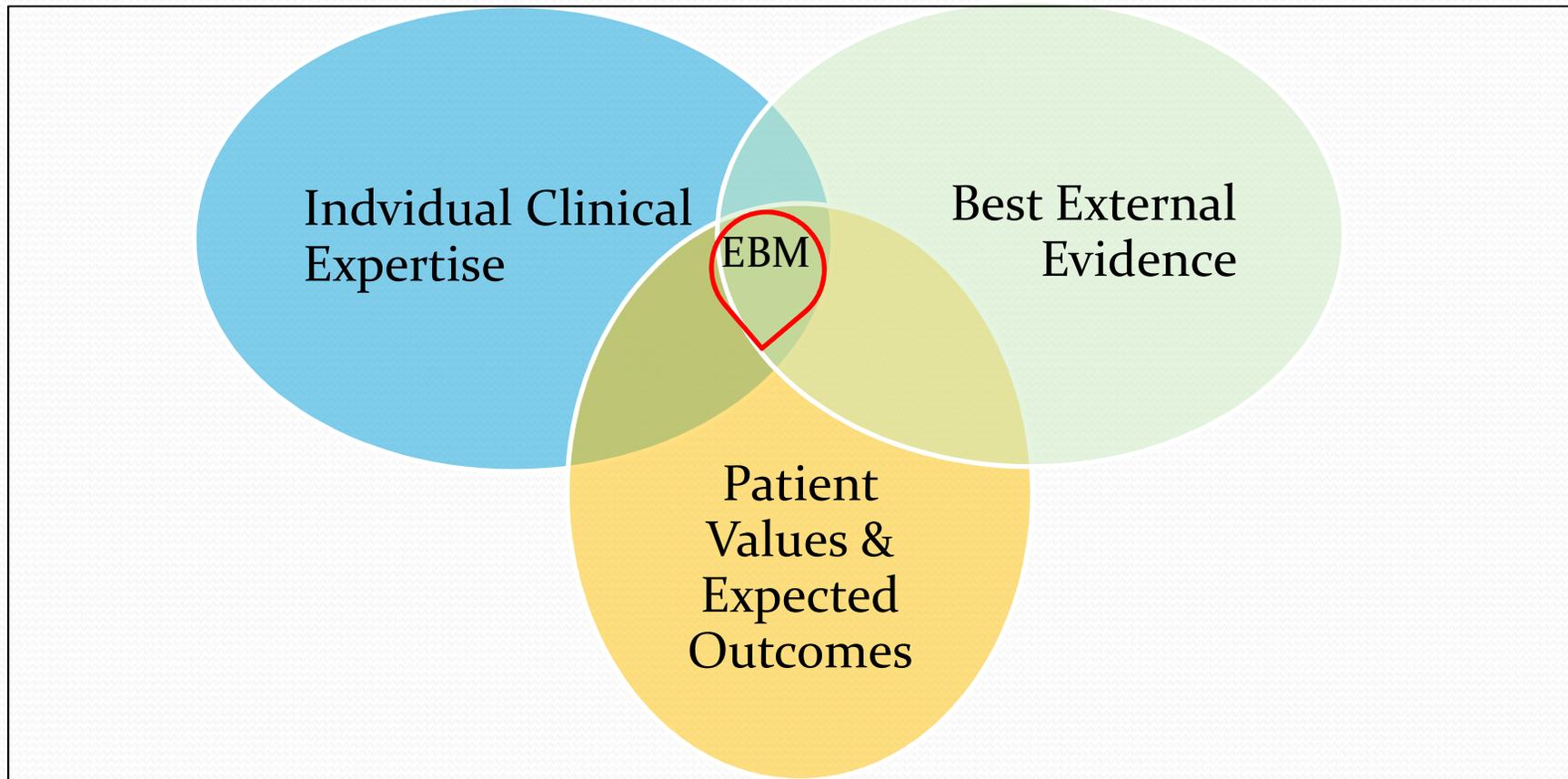




# Evidence Based Medicine

- Definition: “The conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available clinical evidence from systematic research.” D. Sackett

# Evidence Based Medicine Triad





# Evidence Based Medicine - Mark I

- New, improved philosophy of medicine...or political hot potato?
- Use evidence from RCT's, systematic reviews and expert guidelines
- Clinical interventions based on sound research
  - “Good” doctor: Access and appraise the evidence with armament of statistics (risk ratios/confidence intervals)
  - “Bad” doctor: Doesn't know sensitivity from specificity
- Implication: Decision of which evidence to access, whether and how to apply it, is irrelevant

# Evidence Based Medicine – Mark I





# Evidence Based Medicine Mark II

- Scientific evidence should not be pursued free form, but “conscientious, judicious, and explicit”
- Allow clinician at bedside to accept or reject EBM – have cake and eat it (or don’t!)
  - If evidence fits your old-fashioned, indiosyncratic ways, then use it
  - If evidence doesn’t fit your practice, then let your experience and judgement take the place of evidence
- Was this a step forwards...or backwards?!

# Evidence Based Medicine - Mark II





# Evidence Based Medicine Mark III

- Retain the respect for high-quality epidemiological and clinical trial research, combined with cost-effective interventions based on economic and clinical grounds (EBM Mark I)
- Retain flexibility, patient-centeredness (EBM Mark II)
- Introduce notion of scientific scrutiny of the clinician's decision making process (EBM Mark III)

# Evidence Based Medicine – Mark III



# EBM – Practical example

- Patient with low back strain injury at work
  - Exam shows no red flags
- OM provider wants to refer to PT
- Patient requests to see alternate treater
- What does the Occupational provider do?
  - 1) Insist on PT first (“my way or the highway”)
  - 2) Show multiple graphs, charts and studies that nothing helps, “croak” the case, and return to work
  - 3) Allow for trial of chiro per guidelines

# EBM – Unifying paradigm

- Allow for trial of alternate care per guidelines
- Low likelihood of serious morbidity from LB strain
- Sets tone of respect to patient in the WC care process
- Patient more likely to trust your clinical judgement going forward
- Patient less likely to be dissatisfied with care
  - Will have more positive outlook
  - Less likely to “shop around”
  - More likely to have a successful outcome

# Evidence Based Medicine – Real world example II





# EBM – Unifying paradigm

- In reality, medical practice does not fit the model in which clinical encounters are reduced to unidimensional problems, neatly solved by recourse to research trials and the hierarchy of evidence.
- Abstracted data from scores of clinical encounters should not be the only scientific tool
- Need Decision Analysis Based or “Context Sensitive Medicine” for evidence based practice

# Evidence Based Medicine – The New Frontier

- End the debate between extremist views
- There is a science – a social science – to the art of medicine
- Through this science we can:
  - Systematically explore, validate, and refine the art of medicine
  - Integrate it with our diagnostic, therapeutic and epidemiological expertise.

# EBM – Data, successes

- A New Method of Assessing the Impact of Evidence Based Medicine on Claim Outcomes. Hunt DL, et. al. JOEM, 2016 May.
  - 45,951 WC claims reviewed (2008 – 2013)
  - Injured workers managed according to EBM guidelines (ODG), better outcomes, lower costs
    - 37.8% lower medical cost
    - 13.2% decreased claim duration
    - States adopting EBM guidelines have had similar results
- Center of Occupational Health & Education (COHE): WA
  - Train providers, work with employers in communities
  - Improved injury outcomes, reduced disability



# Evidence Based Medicine – Future

- EBM-oriented clinicians should:
  - Use evidence summaries in clinical practice
  - Help develop and update selected systematic reviews or evidence-based guidelines in their area of expertise
  - Enroll patients in studies of treatment, diagnosis, prognosis on which medical practice is based

# Evidence Based Medicine - Resources

- Official Disability Guidelines - <http://www.odg-twc.com/>
- ACOEM Practice Guidelines / MDGuidelines – <http://www.mdguidelines.com/>
- State WC Guidelines – Colorado, Washington, Massachusetts, New York, others.
- Centre for Evidence Based Medicine - <http://www.cebm.net/>
- Cochrane Library and Database of Systematic Reviews <http://www.cochranelibrary.com/>



# Practical use of EBM Guidelines

- 5 Step Approach
- 1) Select your guidelines source (ODG, MDA/ACOEM, state)
- 2) Select body region, injury/illness, or intervention
- 3) Review the available information, critically
- 4) Apply to your patients situation
- 5) Evaluate efficacy of EBM application to your patient

# Evidence Based Medicine – The End

- Rescued at last!! Questions?

