

## Component 2: Evidence- Based Medicine

### Unit 5: Evidence-Based Practice Lecture 1

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### What is Evidence-Based Medicine (EBM)?

- A set of tools and disciplined approach to informing clinical decision-making
  - Applies the best evidence available
  - Though cannot forget the caveat: “Absence of evidence is not evidence of absence” (Carl Sagan)
- Allows clinical experience (art) to be integrated with best clinical science
- Makes medical literature more clinically applicable and relevant

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2

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### Why are we not evidence-based?

- Kida (Don't Believe Everything You Think, 2006) lists six ways we arrive at false beliefs
  - We prefer stories to statistics
  - We seek to confirm, not to question, our ideas
  - We rarely appreciate the role of chance and coincidence in shaping events
  - We sometimes misperceive the world around us
  - We tend to oversimplify our thinking
  - Our memories are often inaccurate

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3

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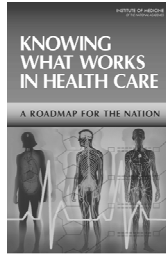
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## Growing advocacy for medicine being more evidence-based

- “Effectiveness” was one of 6 attributes advocated in IOM Quality Chasm report (IOM, 2001)
- A recent report in this series advocates this in more detail and advocates use of informatics for a “learning health care system” (Eden, 2008)
- Descriptions of methodological details and challenges for EBM in supplement to *Medical Care* (2007, 47: 10 Supp 2)



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## “Cultural” pushback on EBM

- Not everyone agrees with the experimentally oriented approach of EBM (Luce, 2010)
- There are some valid criticisms of EBM (Cohen, 2004)
  - Challenges physician-patient autonomy
  - Focuses on large-scale randomized controlled trials that homogenize individual differences
  - Concerns about manipulations of clinical trials data and reports

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## The new EBM mantra: comparative effectiveness research

- Achieved new prominence when American Recovery and Reinvestment Act (ARRA) allocated \$1.1 billion for comparative effectiveness research (CER)
  - Also a “down payment” on healthcare reform
  - Allocated to HHS Secretary (\$0.4B), NIH (\$0.4B), and AHRQ (\$0.3B)
  - Required preparation of two reports by June 30, 2009 to inform operational plan
    - Federal Coordinating Council for CER (HHS, 2009)
    - IOM report for prioritizing research (IOM, 2009; NAP, 2009)

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## CER (cont.)

- From the "draft definition" of CER
  - "research comparing different interventions and strategies to prevent, diagnose, treat and monitor health conditions"
  - "must assess a comprehensive array of health-related outcomes for diverse patient populations"
  - "necessitates the development, expansion, and use of a variety of data sources and methods" (informatics!)
- Federal Coordinating Council report called for emphasis not only on research but also human and scientific capital, data infrastructure, and dissemination (HHS, 2009; Conway, 2009)
- IOM report prioritized top 100 research priorities (Sox, 2009; Iglehart, 2009) – not only addresses common diseases but also healthcare delivery and disparities

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7

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## Unit topics

1. Definitions and Application of EBM
2. Intervention
3. Diagnosis
4. Harm and Prognosis
5. Summarizing Evidence
6. Putting Evidence into Practice

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8

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