Introduction to Evidence-based Medicine

Relevance to Disease Management
Definition: Evidence-Based Medicine

“The practice of EBM includes the judicious integration of current best scientific literature, clinical experience and patient understanding and values.”

Adapted from Guyatt et al. and Sackett et al.
Three Dimensions of EBM

Clinician training and experience

Judicious Integration of science

Patient preferences and values
Guidelines: The Framework for EBM

“Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.”

– IOM ’92

- Derived from...
- 10,000 RCTs annually
- 4,000 guidelines since 1989
- 2,500 periodicals in NLS
Limitations of EBM

“Evidence-based medicine in practice defines the likelihood of something happening. It is never 100%. It is not absolute truth. Evidence never tells you what to do. The same evidence applied in one case may not apply in another. The circumstances of the individual may be different, r the circumstances may be the same but patients may refuse one treatment in favor of another. What evidence-based medicine does is inform one about what their best options are—but it doesn’t make the decision.”

Brian Haynes MD, McMaster University at the Canadian Medical Association September 30, 2003
<table>
<thead>
<tr>
<th>Condition</th>
<th>% Recommended Care Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senile Cataract</td>
<td>78.7</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>75.7</td>
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<tr>
<td>Prenatal Care</td>
<td>73.0</td>
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<tr>
<td>Low back pain</td>
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</tr>
<tr>
<td>Coronary artery disease</td>
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<tr>
<td>Hypertension</td>
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<tr>
<td>Congestive heart failure</td>
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<tr>
<td>Cerebrovascular disease</td>
<td>59.1</td>
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<tr>
<td>Chronic obstructive pulmonary disease</td>
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<tr>
<td>Depression</td>
<td>57.7</td>
</tr>
<tr>
<td>Orthopedic conditions</td>
<td>57.2</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>57.3</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>53.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Recommended Care Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>53.5</td>
</tr>
<tr>
<td>Benign prostatic hyperplasia</td>
<td>53.0</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>48.6</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>45.4</td>
</tr>
<tr>
<td>Headache</td>
<td>45.2</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>40.7</td>
</tr>
<tr>
<td>Community acquired pneumonia</td>
<td>39.0</td>
</tr>
<tr>
<td>Sexually transmitted diseases</td>
<td>36.7</td>
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<tr>
<td>Dyspepsia/peptic ulcer disease</td>
<td>32.7</td>
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<tr>
<td>Atrial fibrillation</td>
<td>24.7</td>
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<tr>
<td>Hip fracture</td>
<td>22.7</td>
</tr>
<tr>
<td>Alcohol dependence</td>
<td>10.5</td>
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</tbody>
</table>
Results of Non-Adherence to EBM: Quality Gaps

**Preventive care deficiencies**
- Child immunizations: 76%
- Influenza vaccine: 52%
- Pap smear: 82%

**Acute care deficiencies**
- Antibiotic misuse: 30-70%
- Prenatal care: 74%

**Surgery care deficiencies**
- Inappropriate hysterectomy: 16%
- Inappropriate CABG surgeries: 14%

**Chronic care deficiencies**
- Beta blockers: 50%
- Diabetes eye exam: 53%

**Hospital care deficiencies**
- Proper CHF care: 50%
- Preventable deaths: 14%
- Preventable ADEs: 1.8/100 admits
  - Life threatening: 20%
  - Serious: 43%

Health Services...
- Safe
- Effective
- Patient-centered
- Timely
- Efficient
- Equitable
Integrating EBM in Disease Management
Strategic Questions

- ROI
- In-sourcing vs. outsourcing
- Clinical efficacy (evidence-based care management)

We will focus on the last one!!
VUMC study tries new tactic to cut health-care costs

12-22-04

A Vanderbilt University Medical Center study is considering a novel way to cut health-care costs.

*If insurers paid doctors for talking patiently with patients — instead of seeing as many people as possible in a day — we all might become healthier and spend less on medical care.*

• Hypertension
• Congestive heart failure
• Type II Diabetes

"If somebody pays doctors to see patients, they are going to see patients. If someone pays doctors to care for patients, maybe they'll do what they need to do," said Dr. Steve Coulter, chief medical officer for Chattanooga-based Blue Cross Blue Shield of Tennessee, which helped organize the Vanderbilt study and is playing a key role in it.
Challenge: Consumer Expectations

73% of patients depend on physicians to make decisions for them!


**Arora NK and McHorney CA. Med Care. 2000; 38:335
EBM and System Transformation: Supply and Demand Focus

Major Purchasers: Plans, Employers, Government

Innovators: Informatics, Device Pharma

Converters: Hospitals, Physicians, Outpatient Care

Demand Strategy

Incent & Enable Consumers

Drive Process Excellence

Supply Strategy

Reduced Variation

Personalized Medicine

Evidence-Based Care

Reduced Costs of Poor Quality

Leverage Points to Overcome Fragmentation
Industry Groups, Coalitions, Consultants, Accreditation Organizations
## Health Cost Strategies for Payers

<table>
<thead>
<tr>
<th>Employer Strategy</th>
<th>3 yr. ROI Potential</th>
<th>5-yr. ROI Potential</th>
<th>Potential Annualized Savings*</th>
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</thead>
<tbody>
<tr>
<td>HSA/HRA</td>
<td></td>
<td>✓</td>
<td>-2-3%</td>
</tr>
<tr>
<td>PBM/Aggressive Formulary</td>
<td>✓</td>
<td>✓</td>
<td>-3-6%</td>
</tr>
<tr>
<td>Malpractice Reform</td>
<td>✓</td>
<td></td>
<td>-1-2%</td>
</tr>
<tr>
<td>EBM Adherence</td>
<td></td>
<td></td>
<td>-5-10%</td>
</tr>
<tr>
<td>Overuse</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underuse</td>
<td></td>
<td>✓</td>
<td>+1-3%</td>
</tr>
<tr>
<td>Misuse</td>
<td>✓</td>
<td></td>
<td>-2-3%</td>
</tr>
<tr>
<td>Chronic Care Management</td>
<td></td>
<td>✓</td>
<td>-3-6%</td>
</tr>
</tbody>
</table>
Evidence-based Chronic Care Management

- Incentives: adherence by clinicians and consumers
- Technology: knowledge management tools for clinicians and consumers
- Public Policy: Tools, not rules. Shift funding
- Engaged Consumers: Context for coaching

EBM Guidelines
EBM and Disease Management: The Tipping Point Questions

• Diagnostics and enrollment…
  – Are predictive models based on appropriate application of the evidence?
  – Do predictive models account for co-morbidities?
  – Are enrollee values incorporated with treatment directives?
  – How is clinician adherence evaluated?
EBM and Disease Management: The Tipping Point Questions

• Care Management processes
  – How is co-morbidity managed?
  – How are guidelines from societies adapted/modified based on evidence?
  – How is the clinician engaged as coach?
  – Are enrollee values incorporated with treatment directives/coaching methods?
EBM and Disease Management: The Tipping Point Questions

• Results management…
  – What measures are important for monitoring adherence? Outcomes?
  – How is appropriate variation measured/accommodated?
Moving toward Evidence-based Care Management

- Need to invest in clinical tools, processes for integration of evidence and outcome measurement
- Need to adapt coaching models to include clinicians as well as consumers
- Need to evaluate models in context of payment systems for providers and consumers
- Need to be transparent
Contact

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