Evidence-based Medicine and Managed Care

Quality Colloquium
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About VCEBM

- **Mission** - Promote understanding and adoption of evidence-based medicine

- **Program Focus:**
  - Educational Programs
  - Research Programs
    - Consumer and provider adherence factors
    - Role of incentives, media coverage, benefits structures, DTC, technology
    - EBM in health system transformation
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. And, in the long run, health insurance costs paid by businesses and their employees might go down.

"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.
Primary Resources

- **Study of 88 Industry Leaders** (November, 2003)
  - *Health transformation approaches, challenges*
- **Study of 89 Health Plans** (January, 2004)
  - *10 month, multi-stage study involving 128 medical directors and 20 pharmacy benefits officers*
- Managed Care Industry Trend Analysis (Ongoing)
- Consumer-directed Care Analysis (Ongoing)
The Health System Today: Obvious Problems

- Runaway Costs
- Explosion in clinical knowledge
- Lack of appropriate technology
- Lack of trust among Key Players
- Inconsistent Quality
- Lack of political will, leadership
- Lack of consumer involvement
- Lack of incentives for right behaviors
- Lack of Access
- Lack of capital and resources
### Delphi Survey Results: What do you consider to be the most important strategies/initiatives for health system transformation in the United State? (88 Healthcare Executives)

<table>
<thead>
<tr>
<th>Strong/Unclear</th>
<th>Strong/Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology standards</td>
<td>Prevention</td>
</tr>
<tr>
<td>Medicare Choice</td>
<td>Disease management</td>
</tr>
<tr>
<td>Weak/Unclear</td>
<td>Consumer-directed care</td>
</tr>
<tr>
<td>Uninsured/Access</td>
<td>Evidence-based medicine</td>
</tr>
<tr>
<td>Prescription drug coverage</td>
<td>Administrative simplification</td>
</tr>
<tr>
<td>Weak/Clear</td>
<td>Weak/Unclear</td>
</tr>
<tr>
<td>Medical malpractice reform</td>
<td>Uninsured/Access</td>
</tr>
<tr>
<td>Employer mandates</td>
<td>Prescription drug coverage</td>
</tr>
</tbody>
</table>

**Consensus**

**DIRECTION/STRATEGY**

*Delphi Survey Results: What do you consider to be the most important strategies/initiatives for health system transformation in the United State? (88 Healthcare Executives)*
Quality: A Key Concern

- Evidence Based Care
- Patient Centered Approach
- System Orientation
What’s so new about evidence-based medicine?

A fundamental approach to market-driven health system transformation or much ado about nothing?
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
EBM: The Traditional Model (McMaster)

1. Create answerable question
2. Review relevant evidence
3. Critically appraise evidence
4. Integrate appraisal with experience
5. Improve process
Evidence-based Practice

**Incentives**
- adherence by clinicians and patients

**Technology**
- knowledge management tools

**Public Policy**
- Tools, not rules

**Engaged Consumers**
- Teachable moments

Optimal Factors: Evidence-based Care
## Common Misconceptions about EBM

<table>
<thead>
<tr>
<th>Misconception</th>
<th>Correct Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBM is cookbook medicine</td>
<td>EBM is based on population-based guidelines; by definition, it’s not applicable to every patient</td>
</tr>
<tr>
<td>EBM is a cost-containment strategy</td>
<td>EBM is a quality improvement strategy; consistently applied, it can reduce costs by reducing inappropriate variation</td>
</tr>
<tr>
<td>EBM is about changing physician behavior</td>
<td>EBM is about increasing adherence by clinicians and patients</td>
</tr>
<tr>
<td>EBM benefits payers most</td>
<td>EBM benefits patients most</td>
</tr>
</tbody>
</table>
Guidelines: The Backbone of 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
Results:

Participants received 54.9 percent (95 percent confidence interval, 54.3 to 55.5) of recommended care. We found little difference among the proportion of recommended preventive care provided (54.9 percent), the proportion of recommended acute care provided (53.5 percent), and the proportion of recommended care provided for chronic conditions (56.1 percent). Among different medical functions, adherence to the processes involved in care ranged from 52.2 percent for screening to 58.5 percent for follow-up care. Quality varied substantially according to the particular medical condition, ranging from 78.7 percent of recommended care (95 percent confidence interval, 73.3 to 84.2) for senile cataract to 10.5 percent of recommended care (95 percent confidence interval, 6.8 to 14.6) for alcohol dependence.

Conclusions: The deficits we have identified in adherence to recommended processes for basic care pose serious threats to the health of the American public. Strategies to reduce these deficits in care are warranted.
Challenge: Knowledge Explosion

- 20,000 biomedical journals
- >150,000 medical articles published each month
- >300,000 randomized controlled trials
Challenge: Lack of Evidence

How many questions have any evidence? (BMJ 2000)

**Answered**
- Beneficial: 248
- Ineffective or harmful: 43
- Trade-off: 67

**Partial Answer**
- Likely to be beneficial: 235
- Unlikely to be beneficial: 64

**Uncertain**
- Unknown effectiveness: 375

Number of Interventions
Challenge: Timeliness

The solid line represents the Kaplan-Meier curve for the Agency for Healthcare Research and Quality (AHRQ) guidelines. The dashed lines represent the 95% confidence interval (JAMA. 2001;286:1461-1467).
Challenges: Media Coverage

Risks and Benefits of Estrogen Plus Progestin in Healthy Postmenopausal Women
Principal Results From the Women’s Health Initiative Randomized Controlled Trial

Writing Group for the Women's Health Initiative Investigators

The Women’s Health Initiative (WHI) focuses on defining the risks and benefits of strategies that could potentially reduce the incidence of heart disease, breast and colorectal cancer, and fractures in postmenopausal women. Between 1993 and 1998, the WHI enrolled 161,809 postmenopausal women in the age range of 50 to 79 years into a set of clinical trials (trials of low-fat dietary pattern, calcium and vitamin D supplementation, and 2 trials of postmenopausal hormone therapy).

Context Despite decades of accumulated observational evidence, the balance of risks and benefits for hormone use in healthy postmenopausal women remains uncertain.

Objective To assess the major health benefits and risks of the most commonly used combined hormone preparation in the United States.

Design Estrogen plus progestin component of the Women’s Health Initiative, a randomized controlled primary prevention trial (planned duration, 8.5 years) in which 16,608 postmenopausal women aged 50–79 years with an intact uterus at baseline were recruited by 40 US clinical centers in 1993–1998.

Interventions Participants received conjugated equine estrogens, 0.625 mg/d, plus medroxyprogesterone acetate, 2.5 mg/d, in 1 tablet (n = 8506) or placebo (n = 8102).

Main Outcomes Measures The primary outcome was coronary heart disease (CHD) (nonfatal myocardial infarction and CHD death), with invasive breast cancer as the primary adverse outcome. A global index summarizing the balance of risks and benefits included the 2 primary outcomes plus stroke, pulmonary embolism (PE), endometrial cancer, colorectal cancer, hip fracture, and death due to other causes.

Results On May 31, 2002, after a mean of 5.2 years of follow-up, the data and safety monitoring board decided to stop the trial early because of a significant increase in breast cancer incidence among the intervention group.
Challenge: Plan Bashing
Challenge: Consumer Expectations

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

"INFORMED" PARENTAL

INTERMEDIATE SHARED DECISION MAKING

PATIENT AS DECISION-MAKER

17.1% Strongly Agree
45% Agree
11%
22.5% Disagree
4.8% Strongly disagree

**Arora NK and McHorney CA. Med Care. 2000; 38:335
Plans play a unique role today, tomorrow

- *Information management* is a core competency
- *Influence* is significant among employers
- *Impact* is pervasive across the spectrum of healthcare
A new report by the National Committee for Quality Assurance (NCQA) finds that "quality gaps" in the U.S. healthcare system result in more than 57,000 avoidable deaths each year. Financial losses sustained from poor quality rang in at $11 billion in lost productivity and more than 41 million lost work days. *These losses could be avoided annually if "best practices" were more widely adopted, according to the report.*
Expert Opinions: A Starting Point

- Chief Medical Officers from 89 health plans
- Chief Pharmacy Officers from 20 major health plans

What about EBM?
Where is managed care now?
Where is it going? (future state 2006 scenario)
What will it take to get there?
“Managed care” industry drivers

- Customer Satisfaction
- Profitability
- Product line strength
- Reputation
- Outcomes
- Access to capital

Winning the war and losing battles...
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
Results of Non-Adherence to EBM: Inappropriate Variation

- **Underuse...**
  - Prevention
  - Dosage
  - Depression

- **Overuse...**
  - Antibiotics
  - Surgery
  - Imaging

- **Misuse...**
  - Hospital infections
  - Drug Events
Performance on Medicare Quality Indicators, 2000–2001

Note: State ranking based on 22 Medicare performance measures.

Realities for managed Care

- Employers want solutions to cost (and large self-insureds also consider quality)
- Medical management risk (costs) are increasing; current approaches do not work.
- How care is delivered (provider focused processes) and consumed (consumers) is the focus
- Plans can play a leading role in solving process and outcome issues
Different Roles, convergent responsibilities...

<table>
<thead>
<tr>
<th></th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yrs in current plan</strong></td>
<td>Mean: 3.4 years</td>
<td>Mean: 1.8 years</td>
</tr>
<tr>
<td><strong>Career Path</strong></td>
<td>Private practice to plan</td>
<td>Varied</td>
</tr>
<tr>
<td><strong>Day to day focus</strong></td>
<td>Senior management Officer level role</td>
<td>Pharmacy management Department level role</td>
</tr>
<tr>
<td><strong>Level of satisfaction with role</strong></td>
<td>Satisfied but growing frustration</td>
<td>Satisfied but impatient</td>
</tr>
<tr>
<td><strong>Reports to</strong></td>
<td>CEO/COO</td>
<td>CMO</td>
</tr>
</tbody>
</table>
Job satisfaction for both is relatively high

<table>
<thead>
<tr>
<th>What is the most satisfying aspect of your job?</th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key measures of success</strong></td>
<td>§ Reputation of plan</td>
<td>§ % Use of generics</td>
</tr>
<tr>
<td></td>
<td>§ Accreditation</td>
<td>§ % Cost managed</td>
</tr>
<tr>
<td></td>
<td>§ Enrollment growth</td>
<td>§ Formulary effectiveness</td>
</tr>
<tr>
<td><strong>Key plan characteristics</strong></td>
<td>§ Financially sound</td>
<td>§ Clinically innovative</td>
</tr>
<tr>
<td></td>
<td>§ Strategically innovative</td>
<td>§ Knowledgeable CMO</td>
</tr>
<tr>
<td></td>
<td>§ Clinical support</td>
<td></td>
</tr>
<tr>
<td><strong>Key professional characteristics</strong></td>
<td>§ Relationships with senior management</td>
<td>§ Relationships in pharmacy benefits program and PBM</td>
</tr>
</tbody>
</table>
### What keeps you awake at night? Major sources of frustration?

<table>
<thead>
<tr>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure to reduce costs</td>
<td>Pressure to reduce costs</td>
</tr>
<tr>
<td>Pressure to demonstrate ROI</td>
<td>Pressure to calculate ROI</td>
</tr>
<tr>
<td>Loss of productivity due to expanded senior management role</td>
<td>Need for data from PBM and plan to modify program</td>
</tr>
<tr>
<td>Tension with physicians</td>
<td>Tension with PBM</td>
</tr>
</tbody>
</table>
## Shared view: consolidation, consumerism, competition likely

<table>
<thead>
<tr>
<th>In 2006, what will healthcare expenditures be as a percentage of total GDP? (Current: 13%)</th>
<th>Mean</th>
<th>Chief Pharmacy Officers</th>
<th>Chief Medical Officers</th>
<th>2003 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.18%</td>
<td>16.29%</td>
<td>13.61%</td>
<td></td>
</tr>
</tbody>
</table>

| In 2006, as a percentage of total health expenditures, what will the following categories be: |
|---|---|---|---|
| Hospital | 31% | 32% | 32% |
| Physician | 24% | 24% | 22% |
| Drugs | 12% | 16% | 9% |

| What will enrollment be in consumer directed health plans as % of total commercial market? (Current enrollment: 6%) |
|---|---|---|---|
| | 13% | 25% | 6% |

| In 2006, how many health plans will be operating in the U.S.? (There are 572 currently with an average enrollment of 142,000.) |
|---|---|---|
| | 472 | 372 | 531 |
## Shared view: employers as catalysts; hospitals, consultants problematic

*1 = “Strongly agree” to 5 = “Strongly disagree”*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals do not encourage physicians to practice evidence-based medicine on a routine basis.</td>
<td><strong>Mean</strong> 1.95</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td><strong>%Strongly Agree/Agree</strong> 77%</td>
<td>35%</td>
</tr>
<tr>
<td>Consultants to large employers do a good job making sure their customers understand how care is delivered and the ways it can be improved.</td>
<td><strong>Mean</strong> 3.45</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td><strong>%Strongly Agree/Agree</strong> 20%</td>
<td>NA</td>
</tr>
<tr>
<td>Large employers are the catalysts for adoption of consumer-driven health programs.</td>
<td><strong>Mean</strong> 2.05</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td><strong>%Strongly Agree/Agree</strong> 76%</td>
<td>NA</td>
</tr>
</tbody>
</table>
Shared View: consumers will play a major role (in tandem with physicians)

<table>
<thead>
<tr>
<th>Scale: 1 “strongly agree” to 5 “strongly disagree”</th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe consumer directed programs are the key to reducing costs in healthcare.</td>
<td>Mean: 2.43</td>
<td>2.55</td>
</tr>
<tr>
<td>% Strongly Agree/Agree: 55%</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>I believe report cards comparing physician adherence to evidence-based guidelines are good ways to stimulate consumers to be more aware of the care they receive.</td>
<td>Mean: 2.13</td>
<td>2.85</td>
</tr>
<tr>
<td>% Strongly Agree/Agree: 69%</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>I believe a consumer will change physicians if they believe their physician is not practicing evidence-based medicine.</td>
<td>Mean: 3.35</td>
<td>na</td>
</tr>
<tr>
<td>% Strongly Agree/Agree: 26%</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>Most consumers do not understand the concept of evidence-based medicine.</td>
<td>Mean: 1.40</td>
<td>1.60</td>
</tr>
<tr>
<td>% Strongly Agree/Agree: 95%</td>
<td>90%</td>
<td></td>
</tr>
</tbody>
</table>
Shared view: Physicians resistance a major concern; financial incentives necessary

<table>
<thead>
<tr>
<th>1=“Strongly agree” to 5 Strongly disagree”</th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physician resistance to change is the major deterrent to widespread adoption of evidence-based medicine as the basis for quality of care decisions.</strong></td>
<td>Mean 2.43</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>%Strongly Agree/Agree 64%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>I believe physicians will change practice patterns if given financial incentives.</strong></td>
<td>Mean 1.85</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>% Strongly Agree/Agree 84%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>To get physicians to adopt evidence-based standards, health plans must adopt a common set of evidence-based clinical guidelines.</strong></td>
<td>Mean 1.58</td>
<td>2.10</td>
</tr>
<tr>
<td></td>
<td>%Strongly Agree/Agree 89%</td>
<td>75%</td>
</tr>
</tbody>
</table>
Coverage decisions for specific drugs are based on several factors. Rate the factors below using percentages to indicate their relative weighting in your CURRENT P&T program and the OPTIMAL weighting each should carry. (1 to 10 scale with 10 the highest weighting)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Current Weight</th>
<th>Optimal Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy</td>
<td>8.40</td>
<td>8.75</td>
</tr>
<tr>
<td>Adverse Event Avoidance</td>
<td>7.55</td>
<td>7.65</td>
</tr>
<tr>
<td>Complications</td>
<td>7.00</td>
<td>7.40</td>
</tr>
<tr>
<td>Clinical Outcome</td>
<td>7.95</td>
<td>8.90</td>
</tr>
<tr>
<td>Cost</td>
<td>6.80</td>
<td>6.45</td>
</tr>
</tbody>
</table>
### Application of EBM: Primarily coverage issues, somewhat difficult to apply

<table>
<thead>
<tr>
<th>What is your understanding of EBM? Its relevance..?</th>
<th>Chief Medical Officers</th>
<th>Chief Pharmacy Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Concept of EBM</strong></td>
<td>Scientific research about treatment strategy (guidelines)</td>
<td>Scientific research about interventions</td>
</tr>
<tr>
<td><strong>Primary application to managed care</strong></td>
<td>Coverage for costly interventions</td>
<td>Formulary decisions</td>
</tr>
</tbody>
</table>
| **Emerging application**                          | Provider profiling and incentives  
Consumer directed care | Formulary modification |
| **Most useful tools, resources**                 | P&T committee | PBM  
P&T Committee |
Transitioning from managed care to care management organizations

- Provider profiling, report cards
  - *physician focus*
- Disease & case management
  - expansion
  - *effectiveness*
- Coverage and denial Management
  - *transparency*
- Pay for performance
  - *outcomes*
  - *adherence*
- Consumer-directed care
  - *Guided self-care*

Evidence-based Care
Evidence-based care built on a shared decision-making model

Implementation

Provider-Consumer shared decision-making

Evidence-based Guidelines and Coaching Tools

Documented Through Measurement
Goal: Guided Self-Care Management

- INFORMATION (Evidence Based Guidelines)
- INTERACTION (Alerts, Reminders, Messages)
- INTERVENTION (Directives)
- THERAPY (Self-Care)

Collaborative Team Coaching
Consumer Responsibility
Evidence-based Medicine and Managed Care: Key Themes

Shared decision-making
Consumerism
Transparency
Tools
Incentives
Evidence!!
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