A POPULATION HEALTH MANAGEMENT APPROACH FOR EMPLOYERS

Orlando March 10, 2005

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Organization of Talk

Paradigm Shifts in the US Health Care System
Supply Side Management to Demand Side Management to *Buyer’s Side Management.*

Economic Value of Demand Management
CBO Earthquake and After Shocks

**Conceptual Solution: Independent, Valid Assessments**
Ethical Principles: Assessing *independence*
Evaluation Principles: Assessing *validity*

**Operational Solution: Assessing Credibility**
The Role of the Population Health Impact Institute.
Health System Cost Containment
Paradigm Shifts

• “Supply side management” (provider-focused) to “demand side management” (patient-focused)
  – “Suppliers” have entered the “demand-side management” (e.g. Consumer Directed Health Plans, Wellness, HRA, Disease Management, etc.)
    – DM is nearly a $1b industry, Rapid Growth, Private and Public investments
  – Question: How do we manage the “suppliers” of “demand management”?

• A Prediction: “Buyer-side Management”
  – Where health itself is an central goal (not just health care supply and health care demand) and the “value” (economic and otherwise) of good health is a principle goal
  – Where purchasers (government, employers) actively manage both the process and outcomes.
Demand-Side Earthquake
CBO Report

“Insufficient Evidence” from the Peer-Reviewed Literature.

– After 100s of articles, presentation, etc. an independent group (the US Congressional Budget Office) concluded there was “insufficient evidence to conclude that DM programs can generally reduce overall health spending.”

An Analysis of the Literature on Disease Management Programs

October 13, 2004
After Shocks
from the CBO Report

<table>
<thead>
<tr>
<th>DM Value Area</th>
<th>DMAA</th>
<th>AHIP</th>
<th>IHPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Clinical Evidence</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2 Satisfaction</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3 Rapid DM Growth</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4 Economic Evidence</td>
<td>Yes</td>
<td>Yes</td>
<td>“insufficient”</td>
</tr>
</tbody>
</table>

- Why? What to do? How do we turn “insufficient evidence” to “sufficient evidence” Who should do it?
Credibility … The Solution

- **Validity**: Clear Evaluation Framework
- **Independence**: Clear Ethical Principles

  - We will discuss ethics first, even though it is not a hot issue as it is in many other places, we don’t want it to become an issues here: *This is a preventive strategy.*
  - We don’t want the new patient centered paradigm to falter.
Background to Ethics: 
*Health Care Crises of Confidence*

- Rx Industry
- Medical Journal Editors
- NIH and consultants
- CDC immunization promotion vs. safety of immunizations.
- FDA panel
  - New advisory board separating safety from approval
Ethics? With “Disclosure” it is in the “Eyes of the Beholder”

The New York Times

February 24, 2005

The Votes on Painkillers: A Second Look

Ten of the 32 members of the advisory panel that voted last week to advise the F.D.A. against banning Bextra, Vioxx and Celebrex had financial ties with the companies that make these drugs.

Should the following drugs be allowed to continue marketing?

<table>
<thead>
<tr>
<th></th>
<th>Bextra (Pfizer)</th>
<th>Vioxx (Merck)</th>
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</thead>
<tbody>
<tr>
<td>Total vote</td>
<td>17 YES 13 NO</td>
<td>17 YES 15 NO</td>
</tr>
<tr>
<td>Vote of those with financial ties</td>
<td>9 YES 1 NO</td>
<td>9 YES 1 NO</td>
</tr>
<tr>
<td>Vote of those with no known ties*</td>
<td>8 YES 12 NO</td>
<td>8 YES 14 NO</td>
</tr>
</tbody>
</table>

Sources: F.D.A.; Center for Science in the Public Interest  *Two abstained on Bextra.  Panel voted 31-1 in favor of Celebrex.

The New York Times

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Our Goal: 

*Preventing Ethical Problems*
PHI Institute Solution: CODE OF EVALUATION ETHICS

1) Objectivity

2) Transparency of Methods

3) Disclosure of Interests
Ethics Scoring: *To Assess Independence*
Data

Data doesn’t say anything, you must interpret it: Face or Vase?
(...data can be biased, the interpretation can be biased)
Background to Evaluation

• The HOT, HOT, issue
  – DMAA, NMHCC, AMA, AHA, SOA, PHII, independent authors have all chimed in.

• WHY?
  – There is no gold standard, like the RCT in the Rx industry.
  – A LITTLE SECRET …
    • THERE NEVER WILL BE!
      – The only hope is to agree upon and then follow generally acceptable evaluation principles … and hope to approach the validity of double-blind RCTs.
PHI Institute Solution:  
**EVALUATION FRAMEWORK**

1) Data Quality  
   *Measurement Error*

2) Equivalence  
   *Differential Error*

3) Statistical Quality  
   *Non-Differential Error*

4) Intervention Causal Pathway  
   *Temporal Error*

5) Generalizability  
   *Transmission Error*

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Evaluation Principle I: Data Quality

Measurement Error

Apples-to-apples or to-oranges?
Evaluation Principle II: 
Equivalence

Non-Differential Error

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Mini-Case Study on Equivalence:  
*Pre-Post Study with*

*“Patient as their Own Control”*

- Method: Select individuals in “pre” period that meet the condition criteria, calculate total and average claims paid.
- Introduce the “N” intervention.
- Follow all individuals through the “post” period and calculate all claims in “post” period.
- Compare the two periods, limit populations to those enrolled in the health plan for the entire two years.
Pre-Post Design #1 Testing "N" Impact

Patients Selected in Pre-Period and followed in Post Period.

Indexed Cost Value (To "All" in Pre Period)

- ALL: -16%
- Asthma: -17%
- CHF: -44%
- COPD: -18%
- Diabetes: -6%

Relative Percent Change

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Evaluation Principle III: Statistical Quality

Non-Differential Error
Evaluation Principle IV: *Intervention Pathway*

*Prior Evidence (or logic)*

\[
\text{T}_{\text{ype I}} \rightarrow \text{T}_{\text{ype II}} \rightarrow \text{T}_{\text{ype III}}
\]

- **Type I**: Program process metric
- **Type II**: Proximate outcome metric
- **Type III**: Ultimate outcome metric

*Posterior Evidence (consistent with hypothesis)*

\[
\text{T}_{\text{ype I}} \rightarrow \text{T}_{\text{ype II}} \rightarrow \text{T}_{\text{ype III}}
\]

*Posterior Evidence (not consistent with hypothesis)*

\[
\text{T}_{\text{ype I}} \rightarrow \text{X} \rightarrow \text{T}_{\text{ype III}}
\]

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Evaluation Principle V:  
*Generalizability*

Transmission Error
Re-capitulation: Evaluation Principles

1. Data Quality
   Measurement Error

2. Equivalence
   Differential Error

3. Statistical Quality
   Non-Differential Error

4. Intervention Pathway
   Temporal Error

5. Generalizibility
   Transmission Error

Truth

Type I $\rightarrow$ Type II $\rightarrow$ Type III

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Evaluation Scoring: *To Assess Validity*

1: Data Quality

2: Equivalence

3: Statistical Quality

4: Intervention Pathway

5: Generalizability
Scoring Credibility:
*How it all fits together.*

1) **Independence** =
   Objectivity + Transparency + Disclosure.
   
   *From Code of Evaluation Ethics*

2) **Validity** =
   Data Quality + Equivalence + Statistical Quality + Intervention Pathway + Generalizability,
   
   *From Evaluation Principles*

**Credibility = Independence + Validity**
The PHI Institute:  

*Education, Research, and Benchmarking*

**Mission:** Promote independent and valid evaluations of defined population health programs through …

- **Education**
  - Knowledge Transfer Workshops.

- **Research**
  - Papers and Articles based on ….
    - Literature reviews, focus groups, surveys, health data.

- **Benchmarking**
  - Convening scientific/experts panels to *score* CREDIBILITY (Independence + Validity) of program evaluation strategy (past, present, & future)
  - Convening scientific/experts panels to set parameters for data analysis to do *empirical* method-to-method and program-to-program impact (Crash TestsSM).
The PHI Institute: Stakeholders

• **Stakeholder Advisory Panels**
  – Employer Groups
  – Public Purchasers
  – Suppliers

• **Subscribers**
  – Corporate Members
  – Individual Members
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