Measures: The Heart and Battleground

Christopher Tompkins, Ph.D.
Brandeis University

May 28, 2008
Medicare Hospital Value-Based Purchasing

- Brandeis University and partners supporting CMS
- Contributors
  - Aparna Higgins, MA
  - Grant A. Ritter, PhD
  - Timothy C. Martin, PhD
  - James F. Burgess, PhD
Topics for Today

1. VBP Scoring Approach – a cook’s tour

2. Value: benefits of services in relation to their cost

3. Inherent goals should determine what and how to measure

“If CMS is going to place a significant burden on the industry, please let’s do it right, and make it worthwhile for everyone.”
Calculation of the VBP
Total Performance Score

Performance Score for Domain:
Total earned points ÷ Total possible points x 100

- Attainment
- Improvement

Total Performance Score:
Weighted average of the Performance Score for the respective domains
- Clinical process
- Patient-centered care
- Clinical outcomes
Total Performance Score:
Clinical process (70%), HCAHPS (30%)
Translating Performance Score into Incentive Payment: Example

Hospital Performance Score: % Of Points Earned

Percent Of VBP Incentive Payment Earned

Minimum Performance

Full Incentive Earned
Opportunities for VBP to Increase Value

What is “unacceptable cost?”

What is “substandard care?”

Greater efficiency

Better clinical outcomes
Policy Goals:
Quality and Efficiency

Ambulatory → Hospital → Post Act → Amb → LTC → System “Efficiency”

“Quality” Outcomes

DRG
Hierarchy of changes

1. **Easier**: Frequency of service units
   e.g., fewer images or more well-baby visits

2. **Harder**: Complexity within units
   e.g., screening during routine visits, medications or ancillaries within a DRG

3. **Hardest**: System level improvements
   e.g., upstream prevention, downstream outcomes, care coordination, information sharing, shared accountability
Roll Call: Agents of Change (graph instead from article?)

- 1970s: Regulation
- 1980s: Market mechanisms
- 1990s: Managed Care
  - Transcended providers
  - Information systems
  - Utilization management
  - Population-based medicine
- 1990s: Disease management
- 2000s: Consumers
- 2000s: Providers via P4P

Practice management
Patient management
Either, both, or neither?

Expenditure Growth Rates

Chart 2: Per Capita National Health Expenditure Growth Rate - Deviation From the Mean 1966 - 2001 (Adjusted for Inflation, 1996 reference year)
Criteria for VBP Measures Lifecycle

- Importance
- Scientific Acceptability
- Feasibility
- Usability
- Improvability
- Controllability
- Potential for Unintended Consequences
- Contribution to Comprehensiveness
SCOPE of Measurement for VBP

• Structure
• Cost
• Outcomes
• Process
• Experience
Process measures

- Reliance on Condition-specific Process Measures (Controllable)
  - Evidence of causal linkages to outcomes for provider acceptance
  - Evidence does not always show effectiveness of process measures (Fonarow et al.)
  - Issue of Teaching to the test and *saturation in performance*
  - May hinder innovation and practice of “technologies” outside of the processes being measured
  - Less of a *laissez-faire* approach
  - Need for measurement to be *agile* (Vaccine shortage/antibiotic supply)
  - Small n issues
- Parallel data infrastructure set up alongside DRGs, mimicking the purpose and burden of FFS
## Outcome Measures

- Existing outcomes measures are not discriminatory
- HF 30-day mortality

<table>
<thead>
<tr>
<th></th>
<th>Better Than U.S. National Rate</th>
<th>No Different Than U.S. National Rate</th>
<th>Worse Than U.S. National Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of 4477 hospitals in US</td>
<td>17</td>
<td>4453</td>
<td>7 (now 0)</td>
</tr>
</tbody>
</table>

CMS 30-Day Mortality Measures  Acute Myocardial Infarction (AMI)  Heart Failure (HF), Barry M. Straube. Sep. 18, 2007. Hospital Quality Alliance Principals Meeting
Outcome Measures

- Clinical Outcomes and Cost as the *frontline* of measurement
  - Controllability?
  - Inferring lack of “appropriate” interventions
- Clinical Outcomes measurement
  - Broad construct of clinical outcomes including mortality and morbidity
  - Define relevant patient cohorts (based on clinical conditions)
  - Create composite clinical outcomes measures that:
    - Reflect outcome ‘severity’
    - Are patient-centric
    - Allow inference of “appropriate care”
# Prototype Outcomes Domain

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ambulatory Follow-up</td>
<td>null</td>
<td>Minor Complication</td>
<td>Major Complication</td>
<td>2+ ER</td>
<td>Readmission</td>
<td>Mortality</td>
</tr>
<tr>
<td>Cohort 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Cohort 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Cohort 3</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Hierarchical scoring: (examples depicted in the chart)
  1. patient died=7;
  2. patient survived but readmitted=6;
  3. no negative outcomes but appropriate ambulatory follow-up=1

- Combines negative (complications) and positive (coordination of care)

- Risk-adjusted: observed compared to expected
Cost of Care

- Measure cost of care in conjunction with clinical outcomes and using the same “unit of measurement”

- Allow for examining the cost-clinical outcomes relationship, including trade-offs

- Measure the efficiency frontier
Role of Structure and Process

- Fallback measures (?)
- Important for quality improvement but not VBP
- Allow market or the *producers* of healthcare to determine
- Foster learning networks
  - Medical technology as a “public good”
  - Funding for sharing of technologies
Unit of Accountability

- Practitioner-centric measurement
  - Practice management
  - Unit of accountability is single organization: hospital, individual physician or medical group etc.
- Patient-centric measurement
  - Patient management
  - Shared Accountability of all organizations and entities involved in care provision (Fisher et al. 2005)
- Ability to operationalize patient-centric measurement and shared accountability
  - Integrated Delivery Networks (IDNs)
  - Virtual practitioner teams: hospital and extended medical staff (Fisher et al. 2006)
  - Virtual delivery networks
Conclusions

- Altman’s Law (paraphrased)
  - The status quo is everyone’s first or second choice
  - A political majority is against any particular reform
- Tompkins’ Corollaries
  - Industries tend to defend the status quo
  - Inertia resists significant change
- Measures represent the heart of VBP
- Selection and implementation is the key battleground