Value-Based Health Care Delivery

Professor Michael E. Porter
Harvard Business School
www.isc.hbs.edu

Merrimack Innovation in Healthcare Symposium
February 1, 2011

Redefining Health Care Delivery

• Achieving universal coverage and access to care are essential, but not enough
• The core issue in health care is the value of health care delivered

Value: Patient health outcomes per dollar spent

• Value is the only goal that can unite the interests of all system participants
• How to design a health care system that dramatically improves patient value
• How to construct a dynamic system that keeps rapidly improving
Creating a Value-Based System

- Significant improvement in value will require *fundamental restructuring of health care delivery*, not incremental improvements

  Today, 21st century medical technology is often delivered with 19th century organization structures, management practices, and payment models

- Care pathways, safety initiatives, disease management and other *overlays* to the current structure are beneficial, but not sufficient
Principles of Value-Based Health Care Delivery

- The central goal in health care must be **value for patients**, not access, volume, convenience, or cost containment.

<table>
<thead>
<tr>
<th>Value</th>
<th>Health outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Costs of delivering the outcomes</td>
</tr>
</tbody>
</table>

- Outcomes are the **full set of patient health outcomes** over the care cycle.
- Costs are the **total costs of care for a patient’s condition** over the care cycle.
Principles of Value-Based Health Care Delivery

- **Quality improvement** is the key driver of cost containment and value improvement, where quality is **health outcomes**

  - Prevention of illness
  - Early detection
  - Right diagnosis
  - Right treatment to the right patient
  - Early and timely treatment
  - Treatment earlier in the causal chain of disease
  - Rapid cycle time of diagnosis and treatment
  - Less invasive treatment methods
  - Fewer complications
  - Fewer mistakes and repeats in treatment
  - Faster recovery
  - More complete recovery
  - Less disability
  - Fewer recurrences, relapses, flare ups, or acute episodes
  - Slower disease progression
  - Greater functionality and less need for long term care
  - Less care induced illness

- **Better health** is the goal, not more treatment
- Better health is **inherently less expensive** than poor health
Creating a Value-Based Health Care Delivery System

The Strategic Agenda

1. Organize into Integrated Practice Units (IPUs) Around Patient Medical Conditions
   - Organize primary and preventive care to serve distinct patient populations

2. Establish Universal Measurement of Outcomes and Cost for Every Patient

3. Move to Bundled Prices for Care Cycles

4. Integrate Care Delivery Across Separate Facilities

5. Expand Excellent IPUs Across Geography

6. Create an Enabling Information Technology Platform
1. Organize Around Patient Medical Conditions
Migraine Care in Germany

Existing Model: Organize by Specialty and Discrete Services

New Model: Organize into Integrated Practice Units (IPUs)

Integrated Models of Primary Care

• Today’s primary care is **fragmented** and attempts to address **overly broad needs** with limited resources

• Organize primary care around teams serving **specific patient populations** (e.g. healthy adults, type II diabetics)

• Deliver **defined service bundles** covering appropriate prevention, screening, diagnosis, and health maintenance

• Provide services with **multidisciplinary teams** including ancillary health professionals and support staff

• Form **alliances with specialty IPUs** covering the prevalent medical conditions represented in the patient population
Volume and experience will have an even greater impact on value in an IPU structure than in the current system.
## Fragmentation of Services
### Hospital Services in Sweden

<table>
<thead>
<tr>
<th>DRG</th>
<th>Number of admitting providers</th>
<th>Average percent of total national admissions</th>
<th>Average admissions/provider/year</th>
<th>Average admissions/provider/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knee Procedure</td>
<td>68</td>
<td>1.5%</td>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes age &gt; 35</td>
<td>80</td>
<td>1.3%</td>
<td>96</td>
<td>2</td>
</tr>
<tr>
<td>Kidney failure</td>
<td>80</td>
<td>1.3%</td>
<td>97</td>
<td>2</td>
</tr>
<tr>
<td>Multiple sclerosis and cerebellar ataxia</td>
<td>78</td>
<td>1.3%</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>73</td>
<td>1.4%</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Implantation of cardiac pacemaker</td>
<td>51</td>
<td>2.0%</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Splenectomy age &gt; 17</td>
<td>37</td>
<td>2.6%</td>
<td>3</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Cleft lip &amp; palate repair</td>
<td>7</td>
<td>14.2%</td>
<td>83</td>
<td>2</td>
</tr>
<tr>
<td>Heart transplant</td>
<td>6</td>
<td>16.6%</td>
<td>12</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>


- **Minimum volume standards** are an interim step to drive service consolidation until comprehensive outcome information is available.
2. Measure Outcomes and Cost for Every Patient

- **Patient Initial Conditions**
  - Protocols/Guidelines
  - E.g., Staff certification, facilities standards

- **Processes**
  - E.g., Hemoglobin A1c levels for diabetics

- **Indicators**
  - (Health) Outcomes
The Outcome Measures Hierarchy

Tier 1
Health Status
Achieved or Retained

Survival

Tier 2
Process of Recovery

Degree of health/recovery

Time to recovery and return to normal activities

Disutility of the care or treatment process (e.g., diagnostic errors and ineffective care, treatment-related discomfort, complications, or adverse effects, treatment errors and their consequences in terms of additional treatment)

Tier 3
Sustainability of Health

Sustainability of health/recovery and nature of recurrences

Long-term consequences of therapy (e.g., care-induced illnesses)

Recurrences
Care-induced Illnesses
The Outcome Measures Hierarchy

Tier 1: Survival

Tier 2: Degree of health/recovery

Tier 3: Time to recovery and return to normal activities

Process of Recovery: Disutility of the care or treatment process (e.g., diagnostic errors and ineffective care, treatment-related discomfort, complications, or adverse effects, treatment errors and their consequences in terms of additional treatment)

Sustainability of Health: Sustainability of health/recovery and nature of recurrences

Sustainability of Health: Long-term consequences of therapy (e.g., care-induced illnesses)
Adult Kidney Transplant Outcomes
U.S. Centers, 1987-1989

Number of programs: 219
Number of transplants: 19,588
One year graft survival: 79.6%

- 16 greater than predicted survival (7%)
- 20 worse than predicted survival (10%)
Adult Kidney Transplant Outcomes
U.S. Centers, 2005-2007

Number of programs: 240
Number of transplants: 38,515
One year graft survival: 93.2%

- 16 greater than expected graft survival (6.6%)
- 19 worse than expected graft survival (7.8%)
3. Move to Bundled Prices for Care Cycles

- A single price covering the **full care cycle for an acute medical condition**
- Time-based reimbursement for **chronic conditions**
- Time-based reimbursement for **primary/preventive care for a defined patient population**
Bundled Payment in Practice
Hip and Knee Replacement in Stockholm, Sweden

- **Components** of the bundle

  - Pre-op evaluation
  - Lab tests
  - Radiology
  - Surgery & related admissions
  - Prosthesis
  - Drugs
  - Inpatient rehab, up to 6 days

  - All physician and staff costs
  - 1 follow-up visit within 3 months
  - Any additional surgery to the joint within 2 years
  - If post-op infection requiring antibiotics occurs, guarantee extends to 5 years

- Applies to all **relatively healthy patients** (i.e. ASA scores of 1 or 2)
- The same **referral process** from PCPs is utilized as the traditional system
- **Mandatory reporting** by providers to the joint registry plus supplementary reporting
- Provider participation is **voluntary** but all providers are involved

- The bundled price for a knee or hip replacement is about **US $8,000**
4. Integrate Care Delivery Across Separate Facilities
Children’s Hospital of Philadelphia Care Network

- Choose the **scope of service lines** where each provider unit can achieve excellence
- **Rationalize service lines/IPUs** across facilities to improve volume, avoid duplication, and deepen teams
- **Offer specific services** at the **appropriate facility**
  - E.g. acuity level, cost level, need for convenience
- Clinically integrate **care across facilities**, within an IPU structure
  - **Widen** and **integrate** the care cycle
  - Better connect **preventive/primary care** units to specialty IPUs
5. Expand Excellent IPUs Across Geography
The Cleveland Clinic Managed Practices

- Rochester General Hospital, NY
  Cardiac Surgery
- CLEVELAND CLINIC
  Cardiac Care
- Chester County Hospital, PA
  Cardiac Surgery
- Cape Fear Valley Health System, NC
  Cardiac Surgery
- McLeod Heart & Vascular Institute, SC
  Cardiac Surgery
- Cleveland Clinic Florida Weston, FL
  Cardiac Surgery
6. Build an Enabling Information Technology Platform

Utilize information technology to enable **restructuring of care delivery** and **measuring results**, rather than treating it as a solution itself.

- **Common data definitions**
- Combine **all types of data** (e.g. notes, images) for each patient
- Data encompasses the **full care cycle**, including care by referring entities
- Allow access and communication among **all involved parties**, including patients
- **Templates** for medical conditions to enhance the user interface
- “**Structured**” data vs. free text
- Architecture that allows easy extraction of **outcome measures**, **process measures**, and **activity based cost measures** for each patient and medical condition
- Interoperability standards enabling communication among **different provider** (and payor) **organizations**
A Mutually Reinforcing Strategic Agenda

- Organize into Integrated Practice Units
- Measure Outcomes and Cost For Every Patient
- Grow Excellent Services Across Geography
- Move to Bundled Prices for Care Cycles
- Integrate Care Delivery Across Separate Facilities
- Build an Enabling IT Platform
Moving to a Value-Based System
Implications for Government

1. Organize into Integrated Practice Units (IPUs) Around Patient Medical Conditions
   - Provider reporting and certification based on care integration measures (e.g. multidisciplinary teams, dedicated facilities)

2. Establish Universal Measurement of Outcomes and Cost for Every Patient
   - Introduce mandatory outcome measurement by medical condition
   - Require provider reporting of patient volume by medical condition as an interim step

3. Move to Bundled Prices for Care Cycles
   - Expand DRG care episodes

4. Integrate Care Delivery Across Separate Facilities
   - Introduce minimum volume standards by medical condition

5. Expand Excellent IPUs Across Geography
   - Encourage affiliations between small or rural providers and qualifying centers of excellence

6. Create an Enabling Information Technology Platform
   - Require universal data definitions, interoperability, and the ability to easily extract outcome, process, and costing measures by all HIT systems
For additional information on

Value-Based Health Care Delivery:

www.isc.hbs.edu