Value-Based Health Care Delivery

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HBS Reunion
October 2, 2009

This presentation draws on Michael E. Porter and Elizabeth Olmsted Teisberg: Redefining Health Care: Creating Value-Based Competition on Results, Harvard Business School Press, May 2006, and “How Physicians Can Change the Future of Health Care,” Journal of the American Medical Association, 2007; 297:1103:1111. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without the permission of Michael E. Porter and Elizabeth Olmsted Teisberg. Further information about these ideas, as well as case studies, can be found on the website of the Institute for Strategy & Competitiveness at http://www.isc.hbs.edu.
Redefining Health Care Delivery

• 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

• How to design a health care system that dramatically improves patient value
  – Ownership of entities is secondary (e.g. non-profit vs. for profit vs. government)
• How to construct a dynamic system that keeps rapidly improving
Creating a Value-Based Health Care 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 pricing models.

  - Process improvements, lean production concepts, safety initiatives, care pathways, disease management and other overlays to the current structure are beneficial but not sufficient.

  - Consumers cannot fix the dysfunctional structure of the current system.
Harnessing Competition on Value

• **Competition for patients/subscribers** is a powerful force to encourage restructuring of care and continuous improvement in value

• Today’s competition in health care **is not aligned with value**

| Financial success of system participants | Patient success |

• Creating positive-sum **competition on value** is a central challenge in health care reform in every country
Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not access, equity, volume, convenience, or cost containment

   
   ![Value Equation](image)

   - Outcomes are the **full set of patient health outcomes** over the care cycle
   - Costs are the **total costs of the care for the patient’s condition**, not just the costs borne by a single provider
**Principles of Value-Based Health Care Delivery**

1. Set the goal as **value for patients**, not containing costs

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

   - Prevention
   - Early detection
   - Right diagnosis
   - Early and timely treatment
   - Treatment earlier in the causal chain of disease
   - Right treatment to the right patient
   - Rapid cycle time of diagnosis and care
   - Less invasive treatment methods
   - Fewer complications
   - Fewer mistakes and repeats in treatment
   - Faster recovery
   - More complete recovery
   - Less disability
   - Fewer relapses or acute episodes
   - Slower disease progression
   - 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
Cost versus Quality in Sweden

Health care
cost/capita (SEK)

County council health care index

Note: Cost including: primary care, specialized somatic care, specialized psychiatry care, other medical care, political health- and medical care activities, other subsidies (e.g. drugs)
Source: Öppna jämförelser, Socialstyrelsen 2008; Sjukvårdsdata i fokus 2008; BCG analysis
Principles of Value-Based Health Care Delivery

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

3. Care delivery should be organized around the patient’s medical condition over the full cycle of care

   • A medical condition is an interrelated set of patient medical circumstances best addressed in an integrated way
     – Defined from the patient’s perspective
     – Including the most common co-occurring conditions and complications
     – Involving multiple specialties and services

   • The patient’s medical condition is the unit of value creation in health care delivery
Restructuring Care Delivery
Migraine Care in Germany

Existing Model:
Organize by Specialty and Discrete Services

New Model:
Organize into Integrated Practice Units (IPUs)

# Integrating Across the Cycle of Care

## Breast Cancer

### Informing and Engaging
- Advice on self-screening
- Consultations on risk factors
- Counseling patient and family on the diagnostic process and the diagnosis
- Explaining patient treatment options/shared decision making
- Patient and family psychological counseling
- Counseling on the treatment process
- Education on managing side effects and avoiding complications of treatment
- Achieving compliance
- Psychological counseling
- Counseling on long term risk management
- Achieving Compliance

### Measuring
- Self exams
- Mammograms
  - Mammograms
  - Ultrasound
  - MRI
  - Labs (CBC, Blood chems, etc.)
  - Biopsy
  - BRACA 1, 2...
  - CT
  - Bone Scans
- Labs
  - Procedure-specific measurements
- Range of movement
- Side effects measurement
- MRI, CT
- Recurring mammograms (every six months for the first 3 years)

### Accessing
- Office visits
- Mammography lab visits
  - Lab visits
  - High risk clinic visits
- Office visits
- Hospital stays
- Office visits
- Lab visits
- Visits to outpatient radiation or chemotherapy units
- Pharmacy
- Rehabilitation facility visits
- Pharmacy
- Lab visits
- Mammographic labs and imaging center visits

### Monitoring/Preventing
- Medical history
- Control of risk factors (obesity, high fat diet)
- Genetic screening
- Clinical exams
- Monitoring for lumps

### Diagnosing
- Medical history
- Determining the specific nature of the disease (mammograms, pathology, biopsy results)
- Genetic evaluation
- Labs

### Preparing
- Choosing a treatment plan
- Surgery prep (anesthetic risk assessment, EKG)
- Plastic or onco-plastic surgery evaluation
- Neo-adjuvant chemotherapy

### Intervening
- Surgery (breast preservation or mastectomy, oncoplastic alternative)
- In-hospital and outpatient wound healing
- Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue)
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)

### Recovering/Rehabbing
- Physical therapy

### Monitoring/Managing
- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued or later onset side effects or complications
Integrated Diabetes Care
Joslin Diabetes Center

Core Team
- Endocrinologist
- Diabetes Nurse Educator

Extended Team
- Nephrologists
- Ophthalmologists/Optometrists
- Psychiatrists, Psychologists, Social Workers
- Nutritionists
- Exercise Physiologists

Shared Facilities
- Common Exam Rooms
- Dedicated Just-in-Time Lab
- Eye Scan
- Laser Eye Surgery Suite

Acute Complications
- Hyperglycemia
- Hypoglycemia

Long-Term Complications
- Cardiovascular Disease
- Cardiologist
- Neuropathy
  - Vascular Surgeon, Neurologist, Podiatrist
- End Stage Renal Disease
  - Dialysis
  - Transplantation
Integrated Models of Primary Care

• Today’s primary care structures are fragmented and attempt to address overly broad needs with limited resources

• Redefine primary care as sets of prevention, screening, diagnosis, and wellness/health maintenance services for specific patient groups

• Deliver primary care service bundles using multidisciplinary teams, support staff, and facilities to allow effective management of the patient’s care cycle

• Design service bundles around specific patient populations (e.g. healthy adults, frail elderly, type II diabetics) rather than attempt to be all things to all patients

• Create formal partnerships between primary care organizations and specialty IPUs

• Deliver primary care at the workplace, community organizations, and other settings that offer regular patient contact and the ability to develop a group culture of wellness
4. Provider **experience**, **scale**, and **learning** at the medical condition level drive value improvement.

- Volume and experience will have a **much greater impact** on value in an IPU structure.
- The virtuous circle **extends across geography in integrated care organizations**.
## Fragmentation of Hospital Services
### 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>1</td>
</tr>
<tr>
<td>Multiple sclerosis and cerebellar ataxia</td>
<td>78</td>
<td>1.3%</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>73</td>
<td>1.4%</td>
<td>66</td>
<td>1</td>
</tr>
<tr>
<td>Implantation of cardiac pacemaker</td>
<td>51</td>
<td>2.0%</td>
<td>124</td>
<td>2</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>

### Fragmentation of Hospital Services
Japan

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number of hospitals performing the procedure</th>
<th>Average number of procedures per provider per year</th>
<th>Average number of procedures per provider per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craniotomy</td>
<td>1,098</td>
<td>71</td>
<td>1.4</td>
</tr>
<tr>
<td>Operation for gastric cancer</td>
<td>2,336</td>
<td>72</td>
<td>1.4</td>
</tr>
<tr>
<td>Operation for lung cancer</td>
<td>710</td>
<td>46</td>
<td>0.9</td>
</tr>
<tr>
<td>Joint replacement</td>
<td>1,680</td>
<td>50</td>
<td>1.0</td>
</tr>
<tr>
<td>Pacemaker implantation</td>
<td>1,248</td>
<td>40</td>
<td>0.8</td>
</tr>
<tr>
<td>Laparoscopic procedure</td>
<td>2,004</td>
<td>72</td>
<td>1.4</td>
</tr>
<tr>
<td>Endoscopic procedure</td>
<td>2,482</td>
<td>202</td>
<td>3.9</td>
</tr>
<tr>
<td>Percutaneous transluminal coronary angioplasty</td>
<td>1,013</td>
<td>133</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Principles of Value-Based Health Care Delivery

5. **Integrate care across facilities** and **geography**, rather than duplicating services in stand-alone units

Children’s Hospital of Philadelphia (CHOP) Affiliations

- Deliver services in the **appropriate** facility, not every facility
- Excellent providers can manage care delivery in **multiple geographic areas**
Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not containing costs
2. **Quality improvement** is the key driver of cost containment and value improvement, where quality is **health outcomes**
3. Care delivery should be organized around the patient’s **medical condition** over the **full cycle of care**
4. Provider **experience, scale, and learning** at the medical condition level drive value improvement
5. **Integrate care across facilities** and **geography**, rather than duplicating services in stand-alone units
6. Measure and report **outcomes** and **costs** for every provider, every medical condition, and every patient
Measuring Value in Health Care

Patient Initial Conditions ➔ Processes ➔ Indicators ➔ (Health) Outcomes

- Protocols/Guidelines
- E.g., Hemoglobin A1c levels for diabetics

Patient Compliance
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6. **Measure and report outcomes** and **costs** for every provider, every medical condition, and every patient

- **Outcomes should be measured for each medical condition over the cycle of care**
  - Not for interventions or short episodes
  - Not separately for types of service (e.g. inpatient, outpatient, tests, rehabilitation)
  - Not for practices, departments, clinics, or entire hospitals

- **Results must be measured at the level at which value is created** not traditional organizational units
The Outcome Measures Hierarchy

Tier 1
Health Status Achieved

Tier 2
Process of Recovery

Tier 3
Sustainability of Health

Survival
Degree of health/recovery
Time to recovery or return to normal activities
Disutility of care or treatment process (e.g., discomfort, complications, adverse effects, errors, and their consequences)
Sustainability of health or recovery and nature of recurrences
Long-term consequences of therapy (e.g., care-induced illnesses)
The Outcome Measures Hierarchy
Breast Cancer

**Survival**
- Survival rate
  (One year, three year, five year, longer)

**Degree of recovery / health**
- Degree of remission
- Functional status
- Breast conservation outcome

**Time to recovery or return to normal activities**
- Time to remission
- Time to achieve functional status

**Disutility of care or treatment process**
(e.g., treatment-related discomfort, complications, adverse effects, diagnostic errors, treatment errors)
- Nosocomial infection
- Nausea
- Vomiting
- Febrile neutropenia
- Limitation of motion
- Suspension of therapy
- Failed therapies
- Depression
- Sustainability of functional status

**Sustainability of recovery or health over time**
- Cancer recurrence
- Incidence of secondary cancers
- Brachial plexopathy
- Fertility/pregnancy complications
- Premature osteoporosis

**Long-term consequences of therapy**
(e.g., care-induced illnesses)
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5. **Integrate care across facilities** and **geography**, rather than duplicating services in stand-alone units
6. Measure and report **outcomes** and **costs** for every provider, every medical condition, and every patient
7. **Align reimbursement** with value and reward innovation
   - **Bundled reimbursement** for **cycles of care** for medical conditions, not payment for discrete services or short episodes
   - Time-base bundled reimbursement for **managing chronic conditions**
   - Reimbursement for defined **prevention, screening, wellness/health maintenance** service bundles
   - **Providers** and **health plans** should be proactive in driving new reimbursement models, not wait for government
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7. **Align reimbursement** with value and reward innovation
8. Utilize information technology to enable **restructuring of care delivery** and **measuring results**, rather than treating it as a solution itself

- Common data definitions
- “Structured” data vs. text
- Interoperability standards
- Structure for combining all types of data (e.g. notes, images) for each patient over time
- Encompassing the full care cycle, including referring entities
- Templates for medical conditions to enhance the user interface
- Accessible and allow communication among all involved parties
- Architecture allowing easy extraction of outcome measures
Value-Based Health Care Delivery
The Strategic Agenda for Providers

1. Integrated Practice Units
   • Including primary care

2. Outcomes and Cost Measurement

3. New Reimbursement Models
   • Engage health plans but also seek direct relationships with employers/employer groups

4. Provider System Integration
   • Rationalize service lines/IPUs across facilities to improve volume, avoid duplication, and enable excellence
   • Offer specific services at the appropriate facility
     - e.g. acuity level, cost level, benefits of convenience
   • Clinically integrate care across facilities within an IPU structure
     - The care delivery organization should span facilities
   • Formally link primary care units to specialty IPUs

5. Enabling Information Technology Platform

6. Growth Across Geography
Growth Across Geography
The Cleveland Clinic

• Affiliate Programs in other hospitals in cardiac surgery and urology
• Internet-based second opinion service
• Network of community hospitals in the region
• Hospital/outpatient clusters in other regions
• Hospital management in other countries
Value-Based Healthcare Delivery:
Implications for Health Plans

“Payor”

Value-Added Health Organization
Value-Adding Roles of Health Plans

- Measure and report **overall health results** for members by medical condition versus other plans
- Assemble, analyze and manage the **total medical records** of members
- Provide for comprehensive and integrated **prevention, wellness, screening**, and **disease management** services to all members
- Monitor and compare **provider results** by medical condition
- Provide advice to patients (and referring physicians) in selecting **excellent providers**
- Assist in coordinating patient care across the **care cycle** and **across medical conditions**
- Encourage and reward **integrated practice unit** models by providers
- Design new **bundled reimbursement structures** for care cycles instead of fees for discrete services
- Health plans will require **new capabilities** and **new types of staff** to play these roles
Value-Based Health Care Delivery: Implications for Employers

- Set the goal of employee health
- Assist employees in healthy living and active participation in their own care
- Provide for convenient and high value prevention, wellness, screening, and disease management services
  - On site clinics
- Set new expectations for payors
  - Plans should contract for integrated care, not discrete services
  - Plans should contract for care cycles rather than single interventions
  - Plans should assist subscribers in accessing excellent providers for their medical condition
  - Plans should measure and improve member health results by condition, and expect providers to do the same
- Provide for health plan continuity for employees, rather than plan churning
- Measure and hold employee benefit staff accountable for the health value achieved by the company
- Find ways to expand insurance coverage and advocate reform of the insurance system
- Providers should forge direct relationships with employers
Value-Based Health Care Delivery: Implications for Government

Shift insurance market competition and enable universal coverage:

• Shift insurance market by ending discrimination based on pre-existing conditions and re-pricing upon illness

• Build upon the current employer based system

• Create a viable insurance option for individuals and small groups through large statewide and multistate insurance pools, coupled with a reinsurance system for high cost individuals

• Establish income-based subsidies on a sliding scale for lower income individuals

• Once viable insurance options are established, mandate the purchase of health insurance for all Americans

• Give employers a choice of provider insurance or a payroll tax based on the proportion of employees requiring public assistance
Value-Based Health Care Delivery: Implications for Government

Restructure Delivery

- Establish universal and mandatory measurement and reporting of provider health outcomes
  - Experience reporting as an interim step
- Shift reimbursement systems to bundled payment for cycles of care instead of payments for discrete treatments or services
- Encourage restructuring of health care delivery around the integrated care for medical conditions
  - Eliminate obstacles such as Stark Laws, Corporate Practice of Medicine
  - Minimum volume standards as an interim step
- Create new integrated prevention, wellness, screening and health maintenance service bundles for defined patient groups
- Mandate EMR adoption that enables integrated care and supports outcome measurement
  - Software as a service model for smaller providers
  - National standards for data, communication, and aggregation
- Encourage responsibility of individuals for their health and health care
- Open up value-based competition for patients within and across state boundaries
How Will Redefining Health Care Begin?

• It is **already happening** in the U.S. and other countries
• Steps by pioneering institutions will be **mutually reinforcing**
• Once competition begins working, value improvement will **no longer be discretionary**
• Those organizations that **move early** will gain major benefits

• **Providers** can and should take the lead