Value-Based Health Care Delivery

Professor Michael E. Porter
Harvard Business School

Children’s Hospital of Philadelphia
September 30, 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

\[
\text{Value} = \frac{\text{Health outcomes}}{\text{Costs of delivering the outcomes}}
\]

- 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 or portions of care
## 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**

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Fewer complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early detection</td>
<td>Fewer mistakes and repeats in treatment</td>
</tr>
<tr>
<td>Right diagnosis</td>
<td>Faster recovery</td>
</tr>
<tr>
<td>Early and timely treatment</td>
<td>More complete recovery</td>
</tr>
<tr>
<td>Treatment earlier in the causal chain of disease</td>
<td>Less disability</td>
</tr>
<tr>
<td>Right treatment to the right patient</td>
<td>Fewer relapses or acute episodes</td>
</tr>
<tr>
<td>Rapid cycle time of diagnosis and care</td>
<td>Slower disease progression</td>
</tr>
<tr>
<td>Less invasive treatment methods</td>
<td>Less need for long term care</td>
</tr>
<tr>
<td></td>
<td>Less care induced illness</td>
</tr>
</tbody>
</table>

- **Better health** is the goal, not more treatment
- Better health is **inherently less expensive** than poor health
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**

- 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

- Imaging Centers
- Outpatient Physical Therapists
- Outpatient Neurologists
- Primary Care Physicians
- Inpatient Treatment and Detox Units
- Outpatient Psychologists

**New Model:**
Organize into Integrated Practice Units (IPUs)

- Imaging Unit
- Primary Care Physicians
- West German Headache Center
  - Neurologists
  - Psychologists
  - Physical Therapists
  - Day Hospital
- Network Neurologists
- Essen Univ. Hospital Inpatient Unit

### 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**
- **Mammograms**
- **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**
- **Office visits**
- **Office visits**
- **Hospital stays**
- **Office visits**
- **Office visits**
- **Mammography lab visits**
- **Lab visits**
- **Lab visits**
- **High risk clinic 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**
- **Medical history**
- **Determining the specific nature of the disease (mammograms, pathology, biopsy results)**
- **Genetic evaluation**
- **Labs**
- **Choosing a treatment plan**
- **Surgery prep (anesthetic risk assessment, EKG)**
- **Plastic or onco-plastic surgery evaluation**
- **Neo-adjuvant chemotherapy**
- **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)**
- **Periodic mammography**
- **Other imaging**
- **Follow-up clinical exams**
- **Treatment for any continued or later onset side effects or complications**
- **Physical therapy**

#### Breast Cancer Specialist
- **Other Provider Entities**
Principles of Value-Based Health Care Delivery

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 admiting 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>

Principles of Value-Based Health Care Delivery

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

- Deliver services in the appropriate facility, not every facility
- Excellent providers can manage care delivery across 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

Patient Compliance

Patient Initial Conditions

Processes

Indicators

Protocols/Guidelines

E.g., Hemoglobin A1c levels for diabetics
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
7. 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
- Survival

Tier 2
Process of Recovery
- 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)

Tier 3
Sustainability of Health
- 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
  - Failed therapies
  - Depression

- Sustainability of recovery or health over time
  - Cancer recurrence
  - Sustainability of functional status

- Long-term consequences of therapy
  (e.g., care-induced illnesses)
  - Incidence of secondary cancers
  - Brachial plexopathy
  - Fertility/pregnancy complications
  - Premature osteoporosis
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 patient and for every medical condition
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
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
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
- Interoperability standards
- Architecture 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 allows 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
Value-Based Health Care Delivery: Implications for Government

Shift insurance market competition and enable universal coverage:

• **Maintain competition** among private and public plans
• Shift insurance competition to **value-based competition for subscribers**
• Build upon the current **employer based system**
• Create a viable insurance option for **individuals and small groups**
• Create large statewide and multistate **insurance pools** coupled with a **reinsurance system** for high cost individuals
• Establish **income-based subsidies** on a sliding scale to for lower income individuals
• Once viable insurance options are established, **mandate the purchase of health insurance** for all Americans
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
- Encourage responsibility of individuals for their health and health care
- Open up value-based competition for patients within and across state boundaries
- 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