Value-Based Health Care Delivery

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Harvard Business School

Healthcare Delivery: Achieving Organizational Excellence
June 10, 2008

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, “How Physicians Can Change the Future of Health Care,” Journal of the American Medical Association, 2007; 297:1103:1111, and “What is Value in Health Care,” ISC working paper, 2008. 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

• Universal coverage is 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 value
  – Ownership of entities is secondary (e.g. non-profit vs. for profit vs. government)
• How to create 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 delivered with 19th century organization structures, management practices, and pricing models

- TQM, process improvements, safety initiatives, pharmacy management, and disease management overlays are beneficial but **not sufficient** to substantially improve value
- Consumers **cannot fix the dysfunctional structure** of the current system
Creating a Value-Based Health Care System

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

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

| Financial success of system participants | ≠ | Patient success |

• Creating **competition on value** is a central challenge in health care reform
## Zero-Sum Competition in U.S. Health Care

<table>
<thead>
<tr>
<th>Bad Competition</th>
<th>Good Competition</th>
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</thead>
<tbody>
<tr>
<td>• Competition to <strong>shift costs</strong> or capture more revenue</td>
<td>• Competition to <strong>increase value</strong> for patients</td>
</tr>
<tr>
<td>• Competition to <strong>increase bargaining power</strong></td>
<td></td>
</tr>
<tr>
<td>• Competition to <strong>capture patients</strong> and <strong>restrict choice</strong></td>
<td></td>
</tr>
<tr>
<td>• Competition to <strong>restrict services</strong> in order to maximize revenue per visit or reduce costs</td>
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<table>
<thead>
<tr>
<th>Zero or Negative Sum</th>
<th>Positive Sum</th>
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Principles of Value-Based Health Care Delivery

1. The goal must be value for patients, not lowering costs

   • Improving value will require going beyond waste reduction and administrative savings
Principles of Value-Based Health Care Delivery

1. The goal must be **value for patients**, not lowering costs
   - The best way to **contain costs** is to **improve quality**

   Quality = Health outcomes

   - Prevention
   - Early detection
   - Right diagnosis
   - Early and timely treatment
   - Treatment earlier in the causal chain of disease
   - Right treatment to the right patients
   - Rapid care delivery process with fewer delays
   - Fewer complications
   - Fewer mistakes and repeats in treatment
   - Less invasive treatment methods
   - Faster recovery
   - More complete recovery
   - Less disability
   - Fewer relapses or acute episodes
   - Slower disease progression
   - Less need for long term care

2. Better health is **inherently less expensive** than poor health
   - **Better health** is the goal, not more treatment
Principles of Value-Based Health Care Delivery

1. The goal must be **value for patients**, not lowering costs

- Providers should **compete for patients** based on **value**
  - Instead of supply control, process compliance, or administrative oversight
  - Get **patients** to excellent providers vs. “lift all boats”
  - Expand the **proportion of patients** cared for by the most effective organizations
  - **Grow the excellent organizations** by adding capacity and expanding across locations
Principles of Value-Based Health Care Delivery

1. The goal must be **value for patients**, not lowering costs

2. Health care delivery should be organized around **medical conditions** 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**
  - Involving **multiple** specialties and services

- **Includes** the most common co-occurring conditions

- **Examples**
  - Diabetes (including vascular disease, retinal disease, hypertension, others)
  - Migraine
  - Breast Cancer
  - Stroke
  - Asthma
  - Congestive Heart Failure
Restructuring Health 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
- Essen Univ. Hospital Inpatient Unit
- Network Neurologists

The Cycle of Care

Care Delivery Value Chain for Breast Cancer

**INFORMING & ENGAGING**
- Advice on self screening
- Consultation on risk factors
- Counseling patient and family on the diagnostic process and the diagnosis
- Explaining patient choices of treatment
- Patient and family psychological counseling
- Counseling on the treatment process
- Achieving compliance
- Counseling on rehabilitation options, process
- Achieving compliance
- Counseling on long term risk management
- Achieving compliance

**MEASURING**
- Self exams
- Mammograms
- Mammograms
- Ultrasound
- MRI
- Biopsy
- BRACA 1, 2...
- Procedure-specific measurements
- Range of movement
- Side effects measurement
- Recurring mammograms (every 6 months for the first 3 years)

**ACCESSING**
- Office visits
- Mammography
- Lab visits
- Office visits
- Hospital stay
- Office visits
- Hospital visits
- Office visits
- Visits to outpatient or radiation chemotherapy units
- Rehabilitation facility visits
- Office visits
- 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
- Genetic evaluation
- Choosing a treatment plan
- Surgery prep (anesthetic risk assessment, EKG)
- Plastic or oncoplastic surgery evaluation
- Surgery (breast preservation or mastectomy, oncoplastic alternative)
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)
- In-hospital and outpatient wound healing
- Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphodema and chronic fatigue)
- Physical therapy

**PREPARING**
- Surgery prep (anesthetic risk assessment, EKG)
- Plastic or oncoplastic surgery evaluation
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)

**INTERVENING**
- Surgery prep (anesthetic risk assessment, EKG)
- Plastic or oncoplastic surgery evaluation
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)

**RECOVERING/ REHABING**
- In-hospital and outpatient wound healing
- Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphodema and chronic fatigue)
- Physical therapy

**MONITORING/ MANAGING**
- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued side effects

- **Primary care providers** are often the **beginning** and **end** of the care cycle
- **The medical condition is the unit of value creation** in health care delivery
Diabetes Care
Typical Structure

Outpatient Endocrinologist

Primary Care Physician

Laboratory

Diabetes Nurse Education Visit

Social Worker

Outpatient Neurologist

Nutritionist

Outpatient Nephrologist

Cardiologist

Psychiatrist/Psychologist Visit

Vascular Surgeon

Inpatient Vascular Surgery

Kidney Dialysis

Ophthalmologist

Laser Eye Surgery

Inpatient Endocrinology

Endocrinology
Integrated Diabetes Care
Joslin Diabetes Center

Core Team
- Endocrinologist
- Diabetes Nurse Educator
- Eye Technician

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

Common Exam Rooms
Dedicated Just-in-Time Laboratory
Laser Eye Surgery Suite

Acute Complications
- Hyperglycemia
- Hypoglycemia

Long-Term Complications
- Cardiovascular Disease
- Neuropathy
- Vascular Disease
- Renal Disease
- End Stage Disease
# Integrated Cancer Care

## MD Anderson Head and Neck Center

### Staff

<table>
<thead>
<tr>
<th>Head and Neck Center</th>
<th>Shared</th>
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<tbody>
<tr>
<td><strong>Dedicated MDs</strong></td>
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<tr>
<td>- Medical Oncologists</td>
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<tr>
<td>- Surgical Oncologists</td>
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<tr>
<td>- Radiation Oncologists</td>
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<tr>
<td>- Dentists</td>
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<tr>
<td>- Diagnostic Radiologist</td>
<td></td>
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<tr>
<td>- Pathologist</td>
<td></td>
</tr>
<tr>
<td>- Ophthalmologists</td>
<td></td>
</tr>
<tr>
<td><strong>Dedicated Skilled Staff</strong></td>
<td></td>
</tr>
<tr>
<td>- Nurses</td>
<td></td>
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<tr>
<td>- Audiologist</td>
<td></td>
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<tr>
<td>- Patient Advocate</td>
<td></td>
</tr>
<tr>
<td><strong>Shared MDs</strong></td>
<td></td>
</tr>
<tr>
<td>- Endocrinologists</td>
<td></td>
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<tr>
<td>- Other specialists as needed</td>
<td></td>
</tr>
<tr>
<td>(cardiologists, plastic surgeons, etc.)</td>
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</tbody>
</table>

| **Shared Skilled Staff** |        |
| - Nutritionists         |        |
| - Social Workers        |        |

### Facilities

<table>
<thead>
<tr>
<th>Head and Neck Center</th>
<th>Shared</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>- Dedicated Outpatient Unit</strong></td>
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<tr>
<td><strong>- Radiation Therapy</strong></td>
<td>-Inpatient Wards</td>
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<tr>
<td><strong>- Pathology Lab</strong></td>
<td>→Medical Wards</td>
</tr>
<tr>
<td><strong>- Ambulatory Chemo Center</strong></td>
<td>→Surgical Wards</td>
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What is Integrated Care?

- Integration of specialties and services over the care cycle for a medical condition (IPU)
  - Optimize the whole versus the parts
  - Providers will often operate multiple IPUs

- For some patients, coordination of care across medical conditions
  - A patient can be cared for by more than one IPU

- Integrated care is not just:
  - Co-location
  - Care delivered by the same organization
  - A multispecialty group practice
  - Freestanding focused factories
  - A Center
  - An Institute
  - A health plan/provider system
Principles of Value-Based Health Care Delivery

- Value is driven by provider **experience, scale, and learning** at the medical condition level

**The Virtuous Circle**

- Greater Patient Volume in a Medical Condition (Including Geographic Expansion)
- Improving Reputation
- Rapidly Accumulating Experience
- Rising Process Efficiency
- Better Information/Clinical Data
- More Fully Dedicated Teams
- More Tailored Facilities
- Wider Capabilities in the Care Cycle, Including Patient Engagement
- Rising Capacity for Sub-Specialization
- Spread IT, Measurement, and Process Improvement Costs over More Patients
- Faster Innovation
- Better Results, Adjusted for Risk
- More Fully Dedicated Teams
- Greater Leverage in Purchasing

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Consequences of Service Fragmentation

- Health care delivery in every country is highly fragmented
  - Extreme duplication of services
  - Low volume of patients per medical condition per provider
  - Duplication and fragmentation are present even within affiliated hospitals or systems

- Most providers lack the scale and experience to justify dedicated facilities, dedicated teams, and integrated care over the cycle

- Fragmentation drives organizations into shared units
  - Specialties
  - Imaging
  - Procedures

- Patient value suffers
Principles of Value-Based Health Care Delivery

- Health care delivery should be integrated across facilities and regions, rather than take place in stand-alone units.

Children’s Hospital of Philadelphia (CHOP) Affiliations

- Grand View Hospital, PA
  Pediatric Inpatient Care
- Abington Memorial Hospital, PA
  Pediatric Inpatient Care
- Chester County Hospital, PA
  Pediatric Inpatient Care
- CHILDREN’S HOSPITAL OF PHILADELPHIA
- Shore Memorial Hospital, NJ
  Pediatric Inpatient Care

- Excellent providers can manage care delivery across multiple geographies.
Principles of Value-Based Health Care Delivery

1. The goal must be value for patients, not lowering costs

2. Health care delivery should be organized around medical conditions over the full cycle of care

3. Value must be universally measured and reported

- For medical conditions over the cycle of care
  - Not for interventions or short episodes
  - Not for practices, departments, clinics, or hospitals
  - Not separately for types of service (e.g. inpatient, outpatient, tests, rehabilitation)

- Results must be measured at the level at which value is created for patients
Measuring Value in Health Care

- **Patient Initial Conditions**
- **Structure and Process**
  - Evidence-based medicine
  - Protocols
  - Guidelines
  - Infrastructure
- **Health Indicators**
  - E.g., Hemoglobin A1c levels of patients with diabetes
- **(Health) Outcomes**
- **Patient Satisfaction with Care Experience**
- **Patient Reported Health Outcomes**

- The **primary goal is value**, not access
The Outcome Measures Hierarchy

Tier 1
Health Status Achieved
Degree of recovery / health

Tier 2
Process of Recovery
Time to recovery or return to normal activities
Disutility of care or treatment process (e.g., treatment-related discomfort, complications, or adverse effects, diagnostic errors, treatment errors and their consequences in terms of additional treatment)

Tier 3
Sustainability of Health
Sustainability of recovery or health over time
Long-term consequences of therapy (e.g., care-induced illnesses)

Measuring Breast Cancer Outcomes

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

- **Degree of recovery / health**
  - Remission
  - Functional status

- **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

- **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
  - Premature osteoporosis
  - Febrile neutropenia
  - Limitation of motion
  - Depression

Source: Porter, Michael E., “What is Value in Health Care?” ISC working paper, 2008, and presented at the Institute of Medicine Annual Meeting, October 8, 2007, with assistance from Dr. Andrew Huang, Sun Yat-Sen Cancer Center, and Dr. Jason Wang, Boston University.
Measuring Initial Conditions
Breast Cancer

- Stage of disease
- Type of cancer (infiltrating ductal carcinoma, tubular, medullary, lobular, etc.)
- Estrogen and progesterone receptor status (positive or negative)
- Sites of metastases
- Age
- Menopausal status
- General health, including co-morbidities

- As care delivery improves, some initial conditions that once affected outcomes will **decline in importance**
Measuring Value: Essential Principles

• Outcomes should be measured at the **medical condition level**

• Outcomes should be **adjusted for patient initial conditions**

• **Physicians** need results measurement to support value improvement
  – Use of measures by patients will develop more slowly

• Outcome measurement should not wait for perfection: measures and risk adjustment methods will **improve rapidly**

• The feasibility of outcome measurement at the medical condition level has been **conclusively demonstrated**

• Failure to measure outcomes will **invite further micromanagement** of physician practice
Principles of Value-Based Health Care Delivery

1. The goal must be **value for patients**, not lowering costs

2. Health care delivery should be organized around **medical conditions** over the **full cycle of care**

3. **Value** must be universally measured and reported

4. Reimbursement should be aligned with **value** and reward **innovation**

   - Bundled reimbursement for **care cycles**, not payment for discrete treatments or services
     - Most DRG systems are **too narrow**
   - Reimbursement adjusted for **patient complexity**
   - Reimbursement for **overall management of chronic conditions**
   - Reimbursement for **prevention and screening**, not just treatment

- **Providers** should be proactive in moving to new reimbursement models, not wait for health plans and Medicare
Principles of Value-Based Health Care Delivery

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5. Information technology will enable **restructuring of care delivery** and **measuring results**, but is not a solution by itself

- Common data definitions
- Interoperability standards
- Patient-centered database
- Include all types of data (e.g. notes, images)
- Cover the full care cycle, including referring entities
- Accessible to all involved parties
Principles of Value-Based Health Care Delivery

Implications for Providers

• Organize around **integrated practice units** (IPUs) for each medical condition
  – Make prevention and disease management integral to the IPU model
  – With mechanisms for cross-IPU coordination

• Choose the appropriate **scope of services** in each facility based on excellence in **patient value**

• Integrate services **across geographic locations** for each IPU / medical condition

• Employ formal **partnerships** and **alliances** with independent parties involved in the care cycle in order to integrate care

• Expand high-performance IPUs **across geography** using an integrated model
  – Instead of federations of broad line, stand-alone facilities

• Measure **outcomes** and **costs** for every medical condition over the full care cycle

• Lead the development of **new contracting models** with health plans based on bundled reimbursement for care cycles

• Implement a single, integrated, patient centric **electronic medical record system** which is utilized by every unit and accessible to partners, referring physicians, and patients
Patients with Multiple Medical Conditions
Coordinating Care Across IPUs

- The primary organization of care delivery should be around the integration required for **every patient**
- IPUs will also greatly simplify coordination of care for patients with multiple medical conditions
- The patient with multiple conditions will be **better off** in an IPU model
ThedaCare Health System
Rationalizing Service Lines

ThedaClark Medical Center
- Neurology and neurosurgery at ThedaClark
- Trauma care at ThedaClark
- Bariatrics at ThedaClark
- Inpatient rehabilitation at ThedaClark
- Pediatric inpatient care outsourced to Children’s Hospital of Wisconsin-Fox Valley

Appleton Medical Center
- Cardiac surgery at Appleton
- Radiation oncology at Appleton
- Created Orthopedics Plus, an IPU

New London Family Medical Center
Community Hospital
- ICU care transferred to other ThedaCare sites

Riverside Medical Center
Community Hospital
Critical access community hospitals coordinate services with larger hospitals

Source: Porter, Michael E. and Sachin H. Jain, ThedaCare: System Strategy, HBS case No. 9-708-424, November 9, 2007
Managing Care Across Geography
The Cleveland Clinic Managed Practices

- Swedish Medical Center, WA
  Cardiac Surgery
- Rochester General Hospital, NY
  Cardiac Surgery
- CLEVELAND CLINIC
  Cardiac Care
- Chester County Hospital, PA
  Cardiac Surgery
- Cape Fear Valley Health System, NC
  Cardiac Surgery
- Cleveland Clinic Florida Weston, FL
  Cardiac Surgery
Creating a High-Value Health Care System

Health Plans

“Payor”  ->  Value-Added Health Organization
Value-Adding Roles of Health Plans

- Assemble, analyze and manage the **total medical records** of members
- Provide for comprehensive **prevention, screening, and chronic 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
- Measure and report **overall health results** for members by medical condition versus other plans
- Health plans will require **new capabilities** and **new types of staff** to play these roles
Creating a High-Value Health Care System

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, screening, and disease management** services
  - On site clinics
- Set **new expectations for health plans**, including self-insured plans
  - Plans should assist subscribers in **accessing excellent providers** for their medical condition
  - Plans should contract for care **cycles rather** than discrete services
- Provide for **health plan continuity** for employees, rather than plan churning
- Find ways to **expand insurance coverage** and advocate **reform of the insurance system**
- Measure and hold employee benefit staff accountable for the company’s **health value received**
Creating a High-Value Health Care System
Consumers

• Participate actively in managing personal health

• Expect relevant information and seek advice

• Make treatment and provider choices based on outcomes and value, not convenience or amenities

• Comply with treatment and preventative practices

• Work with their health plans in long-term health management
  – Shifting plans frequently is not in the consumer’s interest

• But “consumer-driven health care” is the wrong metaphor for reforming the system
Creating a High-Value Health Care System

**Government**

- Establish **universal measurement and reporting of health outcomes**
- Create IT standards including **data definitions, interoperability standards**, and **deadlines for implementation** to enable the collection and exchange of medical information for every patient
- Remove obstacles to the **restructuring of health care delivery** around the integrated care of medical conditions
  - E.g. Stark Laws
- Shift reimbursement systems to **bundled prices for cycles of care** instead of payments for discrete treatments or services
- Limit **provider price discrimination** across patients based on group membership
- **Open up competition** among providers and across geography
Creating a High-Value Health Care System

Government, cont’d.

• Eliminate zero-sum practices of health plans such as re-underwriting and terminating sick members

• Establish universal reporting by health plans of health outcomes for members

• Encourage the responsibility of individuals for their health and their health care
How Will Redefining Health Care Begin?

• It is **already happening** in the U.S. and other countries

• Providers, as well as health plans and employers, can take **voluntary** steps in these directions, and will **benefit** irrespective of other changes

• The changes will be **mutually reinforcing**

• Once competition begins working, value improvement will **no longer be discretionary** or **optional**

• Those organizations that **move early** will gain major benefits

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