Value-Based Health Care Delivery

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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 delivery 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, measurement, and pricing |

- Process improvements, care pathways, lean production, safety initiatives, 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 \(
  \neq \)
  Patient success

- Creating positive-sum competition on value is a central challenge in health care reform in every country.
The central goal in health care must be *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 care for the patient’s condition, not just the cost of a single provider or a single service.
### Principles of Value-Based Health Care Delivery

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

| Prevention | Fewer complications |
| Early detection | Fewer mistakes and repeats in treatment |
| Right diagnosis | Faster recovery |
| Right treatment to the right patient | More complete recovery |
| Early and timely treatment | Less disability |
| Treatment earlier in the causal chain of disease | Fewer relapses or acute episodes |
| Rapid cycle time of diagnosis and treatment | Slower disease progression |
| Less invasive treatment methods | 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 Sweden
Health Care Spending by County, 2008

Health Care Cost per Capita

Higher cost

Lower cost

Health Care Cost per Capita

County Council Quality 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: Opna jämförelser, Socialstyrelsen 2008; Sjukvårdsdata i fokus 2008; BCG analysis
Value-Based Health Care Delivery
The Strategic Agenda

1. Organize into Integrated Practice Units around the patient’s medical condition (IPUs)
   - Including primary and preventive care for distinct patient populations
2. Measure Outcomes and Cost for Every Patient
3. Move to Bundled Prices for Care Cycles
4. Integrate Care Delivery Across Separate Facilities
5. Grow by Expanding Excellent IPUs Across Geography
6. Create an Enabling Information Technology Platform
1. Organize into Integrated Practice Units
Migraine Care in Germany

Existing Model:
Organize by Specialty and
Discrete Services

1. Organize into Integrated Practice Units
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 for breast cancer risk factors
- 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
- Office 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)
- 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, lymphedema and chronic fatigue)
- Physical therapy

## MONITORING/MANAGING
- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued or later onset side effects or complications

## Breast Cancer Specialist
- Other Provider Entities
## Integrating Across the Cycle of Care

### Breast Cancer

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<th>Counseling on long term management Achieving Compliance</th>
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<td>Labs</td>
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<td>Range of movement Side effects measurement</td>
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<td>Lab visits</td>
<td>Hospital visits</td>
<td>Lab visits</td>
<td>Visits to outpatient radiation or chemotherapy units Pharmacy</td>
<td>Rehabilitation Pharmacy facility visits Mammographic labs and imaging center visits</td>
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Breast Cancer Specialist Other Provider Entities
Volume and Experience in a Medical Condition Drives Patient Value

The Virtuous Circle of Value

- Improving Reputation
- Greater Patient Volume in a Medical Condition
- Rapidly Accumulating Experience
- Better Information/Clinical Data
- More Fully Dedicated Teams
- More Tailored Facilities
- Rising Process Efficiency
- Wider Capabilities in the Care Cycle, Including Patient Engagement
- Faster Innovation
- Costs of IT, Measurement, and Process Improvement Spread over More Patients
- Greater Leverage in Purchasing

- Volume and experience have an **even greater** impact on value in an IPU structure than in the current system
## 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>2</td>
</tr>
<tr>
<td>Multiple sclerosis and cerebellar ataxia</td>
<td>78</td>
<td>1.3%</td>
<td>28</td>
<td>&lt;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>
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</table>

2. Measure Outcomes and Cost For Every Patient

Patient Initial Conditions → Processes/Activities → Indicators → (Health) Outcomes

Protocols/Guidelines

E.g., Hemoglobin A1c levels for diabetics

Patient Compliance
The Outcome Measures Hierarchy

Tier 1
Health Status Achieved
- Survival
  - Degree of health/recovery

Tier 2
Process of 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
- Depression

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
- Suspension of therapy
- Failed therapies
- Limitation of motion
- 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

Initial Conditions/Risk Factors
- Stage of disease
- Type of cancer (infiltrating ductal carcinoma, tubular, medullary, lobular, etc.)
- Estrogen and progesterone receptor status (positive or negative)
- Sites of metastases
- Previous treatments
- Age
- Menopausal status
- General health, including co-morbidities
- Psychological and social factors
Improvement in In-vitro Fertilization Success Rates

Percent Live Births per Fresh, Non-Donor Embryo Transferred by Clinic Size
Women Age <38, 1997-2005

Clinic Size:
Number of Cycles per Year

Success per Embryo Transferred

Measuring Cost

Aspiration

• Cost should be measured for each patient, aggregated across the full cycle of care
• Cost should be measured for each medical condition (which includes common co-occurring conditions), not for all services
• The cost of each activity or input attributed to a patient should reflect that patient’s use of resources (e.g. time, facilities, service), not average allocations
• The only way to properly measure cost per patient is to track the time devoted to each patient by providers, facilities, support services, and other shared costs

Reality

• Most providers track charges not costs
• Most providers track cost by billing category, not for medical conditions
• Most providers cannot accumulate total costs for particular patients
• Most providers use arbitrary or average allocation of shared resources, not patient specific allocations
3. Move to Bundled Prices for Care Cycles

- Fee for service
- Bundled reimbursement for medical conditions
- Global capitation
- Global budgeting
What is Bundled Payment?

- **Total package price** for the care cycle for a medical condition
  - Includes responsibility for **avoidable complications**
  - Medical condition capitation
- The bundled price should be **severity adjusted**

What is Not Bundled Payment

- Prices for **short** episodes (e.g. inpatient only, procedure only)
- **Separate** payments for physicians and facilities
- **Pay-for-performance** bonuses
- “**Medical Home**” payment for car coordination

- DRGs can be a **starting point** for bundled models
4. Integrate Care Delivery Across Separate Facilities

Children’s Hospital of Philadelphia (CHOP) Hospital Affiliates

- Deliver services in the **appropriate** facility, not every facility
- Excellent providers can manage care delivery across **multiple facilities in multiple geographic areas**
System Integration

Confederation of Standalone Units/Facilities

- Increase **volume**
- Benefits limited to **volume**, contracting, and spreading fixed cost

Integrated Care Delivery Network

- Increase **value**
- The network is **more than** the sum of its parts
Levels of System Integration

1. **Rationalize service lines/ IPUs** across facilities to improve volume, avoid duplication, play to strength, and concentrate excellence

2. Offer specific services at the **appropriate facility**
   - E.g. acuity level, cost level, need for convenience
   - Patient referrals across units

3. Clinically integrate care **across facilities**, within an IPU structure
   - Develop consistent protocols and provide access to experts by providers throughout the network
   - **Expand coverage** of the care cycle and **integrate care** across the cycle
   - Connecting **ancillary service** units to IPUs
     - E.g. home care, rehabilitation, behavioral health, social work, addiction treatment (organize within service units to align with IPUs)
   - Linking **preventive/primary care** units to specialty IPUs
5. Grow by Expanding Excellent IPUs Across Geography

The Cleveland Clinic Managed Practices

- Grow in ways that improve **value**, not just volume
Models of Geographic Expansion

- Affiliation Agreements with Independent Provider Organizations
- Second Opinions and Telemedicine
- Dispersed Diagnostic Centers
- Convenience Sensitive Service Locations in the Community
- Complex IPU Components (e.g. surgery) in Additional Locations
- Specialty Referral Hospitals in Additional Locations
- Broader-Line Referral Hubs
6. Create 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 over time
- Data encompasses the full care cycle, including referring entities
- Allowing access and communication among all involved parties, including patients
- “Structured” data vs. free text
- Templates for medical conditions to enhance the user interface
- Architecture that allows easy extraction of outcome, process, and cost measures
- Interoperability standards enabling communication among different provider systems
Value-Based Healthcare Delivery: Implications for Health Plans

“Payor”  →  Value-Added Health Organization
Value-Based Health Care: The Role of Employers

• Employer interests are **more closely aligned with patient interests** than any other system player
  – Employers need healthy, high performing employees
  – Employers bear the costs of chronic health problems and poor quality care
    – The cost of poor health is 2 to 7 times more than the cost of health benefits
      o Absenteeism
      o Presenteeism

• Employers are **uniquely positioned** to improve employee health
  – Daily interactions with employees
  – On-site clinics for quick diagnosis and treatment, prevention, and screening
  – Group culture of wellness
  – with arrow Providers should establish **direct relationships with employers** to enable value based approaches
A Strategy for U.S. Health Care Reform

Shift Insurance Market:

• Build on the current employer based system

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

• Create large statewide and multistate insurance pools to aggregate volume and buying power and provide a viable insurance option for individuals and small groups, coupled with a reinsurance system for high cost individuals

• Phase in income-based subsidies on a sliding scale for lower income individuals, at a pace that reflects progress of value improvements

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

• Give employers a choice of providing insurance or a payroll tax based on the proportion of employees requiring public assistance
A Strategy for U.S. Health Care Reform

Restructure Delivery:

• Establish a universal and mandatory outcomes measurement and reporting system
  – Experience reporting as an interim step

• Shift reimbursement systems to bundled payments for cycles of care instead of payments for discrete services
  – Including primary/preventive care bundles for patient segments

• Remove obstacles to restructuring of health care delivery around medical conditions
  – E.g. Stark Laws, Corporate Practice of Medicine, Anti-kickback, Malpractice

• Open up value-based competition for patients within and across state boundaries
  – E.g. Harmonize state licensing, insurance rules
  – Minimum volume standards as an interim step

• Mandate EMR adoption that enables integrated care and supports outcome measurement
  – National standards for data definitions, communication, and aggregation
  – Software as a service model for smaller providers

• Set rules that encourage responsibility of individuals for their health and health care through incentives for healthy behavior