What is Value in Health Care?

Professor Michael E. Porter
Harvard Business School

Institute of Medicine
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Creating a High-Value Health Care System

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

Today, 21\textsuperscript{st} century medical technology is delivered with 19\textsuperscript{th} century organization structures, management practices, and pricing models

- TQM, process improvements, and safety initiatives are beneficial but **not sufficient**
Defining the Objective Function for Health Care

- Quality
- Safety
- Evidence-based medicine
- Patient satisfaction
- Cost containment
- Equity
- Access

- Currently, a danger sign is that the objective function **differs** for different actors in the system
Value in Health Care

• **Access** is the most basic goal of a health care system, but universal access is **not enough**

• The purpose of health care is to **deliver value to patients**

  Value: Patient health outcomes per dollar spent

  – In any field, value must be defined around the **customer**
  – Value should be measured by **outputs**, not inputs

• How to **define and measure** value in health care?

• How to design a health care system that **continually improves value**?
Principles of Value-Based Competition

• The best way to contain costs is to drive improvement in quality
  - Prevention
  - Early detection
  - Right diagnosis
  - Early treatment
  - Right treatment to the right patients
  - Treatment earlier in the causal chain of disease
  - Fewer mistakes and repeats in treatment
  - Fewer delays in the care delivery process
  - 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

• Better health is inherently less expensive than poor health
Measuring Value in Health Care
Outcomes versus Processes

- Process compliance is **not quality**
- Process compliance is **not value**
- Process compliance **leaves out** crucial influences on value
- Process compliance tends to **freeze** or **assume current delivery structures**
Measuring Value: Unit of Analysis

- The **appropriate unit for measuring value** must align with how value is created for patients
  - Across services
  - Across time

- Value should be measured for **medical conditions** over the **cycle of care**
  - vs. for hospitals, practices, or clinics
  - vs. types of service (e.g. inpatient, outpatient, tests, rehabilitation)
  - vs. for interventions or short episodes

- Current efforts suffer from measuring value at **differing/inappropriate levels**
What is a Medical Condition?

- A medical condition is **an interrelated set of patient medical circumstances best addressed in an integrated way**
  - Defined from the patient’s perspective

- **Includes** the most common co-occurrences

- **Examples**
  - Diabetes (including vascular disease, hypertension, others)
  - Breast Cancer
  - Stroke
  - Migraine
  - Asthma
  - Congestive Heart Failure

- The value delivered at the medical condition level is inevitably the **joint responsibility** of the providers involved

- The value achieved for patient populations at the medical condition level can be meaningfully **compared** and **acted upon**
## The Cycle of Care
### Care Delivery Value Chain for Breast Cancer

<table>
<thead>
<tr>
<th>INFORMING &amp; ENGAGING</th>
<th>MEASURING</th>
<th>ACCESSING</th>
<th>MONITORING/ PREVENTING</th>
<th>DIAGNOSING</th>
<th>PREPARING</th>
<th>INTERVENING</th>
<th>RECOVERING/ REHABING</th>
<th>MONITORING/ MANAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice on self screening</td>
<td>Counseling patient and family on the diagnostic process and the diagnosis</td>
<td>Explaining and supporting patient choices of treatment</td>
<td>Counseling patient and family on treatment and prognosis</td>
<td>Counseling patient and family on rehabilitation options and process</td>
<td>Counseling patient and family on long term risk management</td>
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<tr>
<td>Consultation on risk factors</td>
<td>Mammograms</td>
<td>Procedure-specific measurements</td>
<td>Range of movement</td>
<td>Side effects measurement</td>
<td>Recurring mammograms (every 6 months for the first 3 years)</td>
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<tr>
<td>Self exams</td>
<td>Ultrasound</td>
<td>Office visits</td>
<td>Hospital stay</td>
<td>Office visits</td>
<td>Office visits</td>
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<tr>
<td>Mammograms</td>
<td>MRI</td>
<td>Lab visits</td>
<td>Visits to outpatient or radiation chemotherapy units</td>
<td>Rehabilitation facility visits</td>
<td>Office visits</td>
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<tr>
<td>Biopsy</td>
<td>BRCA 1, 2...</td>
<td>High-risk clinic visits</td>
<td></td>
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<td>Lab visits</td>
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<tr>
<td>Office visits</td>
<td>Mammography lab visits</td>
<td></td>
<td></td>
<td></td>
<td>Mammographic labs and imaging center visits</td>
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</tr>
</tbody>
</table>

### Accessing
- Office visits
- Mammography lab visits
- Lab visits
- High-risk clinic visits

### Measuring
- Office visits
- Mammograms
- Ultrasound
- MRI
- Procedure-specific measurements
- Range of movement
- Side effects measurement
- Recurring mammograms (every 6 months for the first 3 years)

### 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
- Medical history
- Surgery prep (anesthetic risk assessment, EKG)

### Preparing
- Medical counseling
- Surgery prep (anesthetic risk assessment, oncoplastic alternative)
- Procedure-specific measurements
- Range of movement
- Side effects measurement

### Intervening
- Surgery (breast preservation or mastectomy, oncoplastic alternative)
- In-hospital and outpatient wound healing
- Psychological counseling
- Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)

### Recovering/ Rehabing
- Treatment of side effects (skin damage, neurotoxic, cardiac, nausea, lymphodema and chronic fatigue)
- Physical therapy

- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued side effects

**Primary care providers** are often the beginning and end of care cycles.
Measuring Outcomes

• There are **multiple outcomes** for every medical condition
  – Survival is just one outcome
  – Safety is part of outcomes

• The set of outcome measures for a medical condition can be seen as a **hierarchy**
  – Patients may differ in the weights they attach to each level
  – As care delivery improves, excellence achieved in some measures will shift attention to others
Measuring Outcomes
The Outcome Measures Hierarchy

Survival

Degree of recovery / health

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)

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
  - Breast conservation surgery outcome

- **Time to recovery and/or return to normal activities**
  - Time to remission
  - Time to achieve functional status
Measuring Breast Cancer Outcomes, cont’d.

- Nosocomial infection
- Nausea
- Vomiting
- Febrile neutropenia
- Limitation of motion
- Depression

- Cancer recurrence
- Sustainability of functional status

- Incidence of secondary cancers (due to treatment)
- Brachial plexopathy
- Premature osteoporosis
Measuring Breast Cancer Outcomes
Initial Conditions

- 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 will **decline in importance** for outcomes
Measuring Value in Practice

• Measuring value will require tracking outcomes and costs for every patient over time

• Measuring value will have profound benefits, even if not reported publicly
  – Deeper knowledge of outcomes, costs, and initial conditions
  – Compare progress over time
  – Compare performance to all providers
  – Compare performance across individual providers
    (Fragmentation in care delivery today complicates such comparisons)

• Process measurement will be most effective when also measuring value
Some Implications for Public Policy

- **Universal provider** measurement and reporting of the outcomes hierarchy by medical condition/cycle of care

- **Universal health plan** collection and reporting of medical condition health outcomes for members, including wellness and early detection rates

- Mandatory standards for medical IT systems covering **data definitions, interoperability**, and **database compatibility**
  - Including cost accounting rules

- **Bundled reimbursement for medical conditions/cycles of care** instead of payments for discrete treatments or services
  - Reporting of **bundled prices**
  - Reimbursement rates should vary based on the true impact of initial conditions to eliminate cherry picking and care fragmentation

- **Open competition on value** among providers and across geography
  - Compete for patients and referrals, not “pay for performance” bonuses for process compliance