Value-Based Health Care Delivery

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July 15, 2010

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

- 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

Today, 21st century medical technology is often delivered with 19th century organization structures, management practices, and pricing models
Creating 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
Zero-Sum Competition in U.S. Health Care

**Bad Competition**
- Competition to shift costs or capture greater revenue
- Competition to capture patients and restrict choice
- Competition to increase bargaining power to secure discounts or price premiums
- Competition to exclude less healthy individuals

Zero or Negative Sum Competition

**Good Competition**
- Competition to increase value for patients

Positive Sum Competition
Principles of Value-Based Health Care Delivery

The central goal in health care must be **value for patients**, not access, volume, convenience, or cost containment.

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** over the care cycle.

How to design a health care system that **dramatically improves patient value**.
Principles of Value-Based Health Care Delivery

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

- Prevention
- Early detection
- Right diagnosis
- Right treatment to the right patient
- Early and timely treatment
- Treatment earlier in the causal chain of disease
- Rapid cycle time of diagnosis and treatment
- 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, Sweden
Health Care Spending by County, 2008

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: Öpna 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. Expand Excellent IPUs Across Geography

6. Create an Enabling Information Technology Platform
1. Moving to Care Delivery Integrated Around the Patient 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
- Office visits
- Hospital stays
- Office visits
- Office visits
- Lab 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
- Adjuvant therapies (hormonal medication, radiation, and/or 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)

### RECOVERING/REHABING
- Physical therapy

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

Attributes of an Integrated Practice Unit (IPU):

1. Organized around the patient’s medical condition
2. Provides the full cycle of care for the condition, including patient education, engagement and follow-up
   - Encompasses inpatient, outpatient, and rehabilitative care as well as supporting services (e.g. nutrition, social work)
3. Involves a dedicated team who devote a significant portion of their time to the medical condition
4. Providers are part of a common organizational unit
5. Co-located in dedicated facilities
6. Utilizing a single administrative and scheduling structure
7. A physician team captain and a care manager oversee each patient’s care process
8. The team meets formally and informally on a regular basis
9. Measures processes and outcomes as a team, not individually
10. Accepts joint accountability for outcomes and costs
What is Not Integrated Care?

Integrated care is **not** the same as:

- Co-location per se
- Care delivered by the same organization
- A multispecialty group practice
- Freestanding focused factories
- A clinical pathway
- An institute or center
- A Center of Excellence
- A health plan/provider system (e.g. Kaiser Permanente)
- Medical homes
- Accountable care organizations
Better decisions in terms of diagnosis and treatment plans
- Specialized experience and expertise
- Better coordination/peer review
- Better integration of co-occurrences

Better execution of treatment
- Specialized experience and expertise
- Tailored facilities
- Seamless management of common co-occurrences

Faster cycle time

Full range of support services needed to achieve success for the patient (e.g. nutrition, rehabilitation, psychological counseling)

Improved patient compliance and engagement with care

Vastly greater patient convenience

Greater provider and team efficiency
Better utilization of facilities
Streamlined administrative costs
Integrated Models of Primary Care

• **Defined service bundles** covering prevention, screening, diagnosis, wellness and health maintenance

• Designed around **specific patient populations** (e.g. healthy adults, frail elderly, type II diabetics) rather than attempting to be all things to all patients

• Services are provided by **multidisciplinary teams**, including ancillary health professionals and support staff in **dedicated facilities**

• Delivered not only in traditional facilities but at the **workplace**, **community organizations**, and in **other settings** that offer regular patient contact and the ability to develop a group culture of wellness

• **Alliances** with specialty IPUs covering the prevalent medical conditions represented in the patient base

• Today’s primary care is **fragmented** and attempts to address **overly broad** needs with limited resources
Volume and Experience in a Medical Condition Drive Patient Value

The Virtuous Circle of Value

- Better Results, Adjusted for Risk
- Faster Innovation
- Greater Leverage in Purchasing
- Wider Capabilities in the Care Cycle, Including Patient Engagement
- Rising Capacity for Sub-Specialization
- Rising Process Efficiency
- More Tailored Facilities
- More Fully Dedicated Teams
- Better Information/Clinical Data
- Rapidly Accumulating Experience
- Greater Patient Volume in a Medical Condition
- Improving Reputation

- Costs of IT, Measurement, and Process Improvement Spread over More Patients
- Wider Capabilities in the Care Cycle, Including Patient Engagement
- More Tailored Facilities
- Faster Innovation
- Greater Leverage in Purchasing
- Better Results, Adjusted for Risk
- Improving Reputation

• 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>
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<tbody>
<tr>
<td>Knee Procedure</td>
<td>68</td>
<td>1.5%</td>
<td>55</td>
<td>1</td>
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<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>
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<tr>
<td>Multiple sclerosis and cerebellar ataxia</td>
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<td>1.3%</td>
<td>28</td>
<td>1</td>
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<tr>
<td>Inflammatory bowel disease</td>
<td>73</td>
<td>1.4%</td>
<td>66</td>
<td>1</td>
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<tr>
<td>Implantation of cardiac pacemaker</td>
<td>51</td>
<td>2.0%</td>
<td>124</td>
<td>2</td>
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<tr>
<td>Splenectomy age &gt; 17</td>
<td>37</td>
<td>2.6%</td>
<td>3</td>
<td>&lt;1</td>
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<td>Cleft lip &amp; palate repair</td>
<td>7</td>
<td>14.2%</td>
<td>83</td>
<td>2</td>
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<tr>
<td>Heart transplant</td>
<td>6</td>
<td>16.6%</td>
<td>12</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

2. Measure Outcomes and Cost for Every Patient

- **For** medical conditions
- **Real time** and “on-line” in care delivery, not just retrospective
- **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

**Volume** measurement and reporting by medical condition is an interim first step
Measuring Value

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

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

Patient Compliance
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
  - Depression

- **Time to recovery or return to normal activities**
  - Time to remission
  - Time to 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 upon diagnosis
- 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
Adult Kidney Transplant Outcomes, U.S. Center Results, 1987-1989

Number of programs: 219
Number of transplants: 19,588
1 year graft survival 79.6%

- 16 greater than predicted survival (7%)
- 20 worse than predicted survival (10%)
Adult Kidney Transplant Outcomes, U.S. Center Results, 1998-2000

- 1 year graft survival 90.9%
- 10 greater than predicted survival (4.5%)
- 14 worse than predicted survival (6.4%)
Adult Kidney Transplant Outcomes
U.S. Center Results, 2005-2007

Number of programs: 240
Number of transplants: 38,515
1 year graft survival: 93.2%

- 16 greater than expected graft survival (6.6%)
- 19 worse than expected graft survival (7.8%)
Swedish National Quality Registers, 2007*

Respiratory Diseases
- Respiratory Failure Register (Swedevox)
- Swedish Quality Register of Otorhinolaryngology

Childhood and Adolescence
- The Swedish Childhood Diabetes Registry (SWEDIABKIDS)
- Childhood Obesity Registry in Sweden (BORIS)
- Perinatal Quality Registry/Neonatology (PNQn)
- National Registry of Suspected/Confirmed Sexual Abuse in Children and Adolescents (SÖK)

Circulatory Diseases
- Swedish Coronary Angiography and Angioplasty Registry (SCAAR)
- Registry on Cardiac Intensive Care (RIKS-HIA)
- Registry on Secondary Prevention in Cardiac Intensive Care (SEPHIA)
- Swedish Heart Surgery Registry
- Grown-Up Congenital Heart Disease Registry (GUCH)
- National Registry on Out-of-Hospital Cardiac Arrest
- Heart Failure Registry (RiksSvikt)
- National Catheter Ablation Registry
- Vascular Registry in Sweden (Swedvasc)

Endocrine Diseases
- National Quality Registry for Stroke (Riks-Stroke)
- National Registry of Atrial Fibrillation and Anticoagulation (AuriculA)

Gastrointestinal Disorders
- Swedish Hernia Registry
- Swedish Quality Registry on Gallstone Surgery (GallRiks)
- Swedish Quality Registry for Vertical Hernia

Musculoskeletal Diseases
- Swedish Shoulder Arthroplasty Registry
- National Hip Fracture Registry (RIKSHÖFT)
- Swedish National Hip Arthroplasty Register
- Swedish Knee Arthroplasty Register
- Swedish Rheumatoid Arthritis Registry
- National Pain Rehabilitation Registry
- Follow-Up in Back Surgery
- Swedish Cruciate Ligament Registry – X-Base
- Swedish National Elbow Arthroplasty Register (SAAR)

* Registers Receiving Funding from the Executive Committee for National Quality Registries in 2007
Cost Measurement

Aspiration

• Cost should be measured for **each medical condition** (which includes common co-occurring conditions), not for departments, services, or hospitals as a whole

• Cost should be measured **for each patient**, aggregated across the **full cycle of care**

• 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** allocations, not patient specific allocations

• Many providers allocate cost based in part on **charge levels**, which biases cost estimates
3. Move to Bundled Prices for Care Cycles

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

• A **total package price** for the care cycle for a **medical condition**
  – Time-based bundled reimbursement for **managing chronic conditions**
  – Time-based reimbursement for defined **prevention, screening, wellness/health maintenance** service bundles
  – Should include responsibility for **avoidable complications**
  – “Medical condition capitation”

• The bundled price should be **severity adjusted**

What is Not a Bundled Payment

• Price for a **short** episode (e.g. inpatient only, procedure only)
• **Separate** payments for physicians and facilities
• **Pay-for-performance** bonuses
• “**Medical Home**” payment for care coordination

• DRGs can be a **starting point** for bundled payment models
• **Providers** and **health plans** should be proactive in driving new reimbursement models, not wait for government
Bundled Payment in Practice
Hip and Knee Replacement in Sweden

- Beginning in 2009, all joint replacements (hip and knee) in Stockholm County Council are reimbursed with a **bundled price** that includes:

| - Pre-op evaluation | - 1 follow-up visit within 3 months |
| - Lab tests | - Any additional surgery to the joint within 2 years |
| - Radiology | - If post-op infection requiring antibiotics occurs, guarantee extends to 5 years |
| - Surgery & related admission | |
| - Prosthesis | |
| - Drugs | |
| - Inpatient rehab, up to 6 days | |

- The bundled price applies to all **relatively healthy patients** (i.e. ASA scores of 1 or 2)
- The **same referral** process from PCPs is utilized as the traditional system
- There is **mandatory reporting** by providers to the joint registry plus supplementary reporting
- Provider participation is **voluntary** but all providers are involved
  - 6 public hospitals, 4 private hospitals
  - 3400 patients treated in 2009
- The bundled price for a knee or hip replacement is about **US $8,000**
4. Integrate Care Delivery Across Separate Facilities

Confederation of Standalone Units/Facilities

- Increase overall **volume**
- Benefits limited to **contracting** and spreading **limited fixed overhead**

Integrated Care Delivery Network

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

• **Rationalize service lines/IPUs** across facilities to improve volume, avoid duplication, and concentrate excellence

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

• **Clinically integrate care across facilities**, within an IPU structure
  – **Expand and integrate** the care cycle
  – Better connect **preventive/primary care** units to specialty IPUs
Provider System Integration
Children’s Hospital of Philadelphia (CHOP)
Hospital Affiliates
5. Expand Excellent IPUs Across Geography

The Cleveland Clinic Managed Practices

- Rochester General Hospital, NY
  Cardiac Surgery

- CLEVELAND CLINIC
  Cardiac Care

- Chester County Hospital, PA
  Cardiac Surgery

- Cape Fear Valley Health System, NC
  Cardiac Surgery

- McLeod Heart & Vascular Institute, SC
  Cardiac Surgery

- Cleveland Clinic Florida Weston, FL
  Cardiac Surgery
Models of Geographic Expansion

Affiliations

- Affiliation Agreements with Independent Provider Organizations
- Second Opinions and Telemedicine

Dispersed Services

- Dispersed Diagnostic Centers
- Convenience Sensitive Service Locations in the Community
- Complex IPU Components (e.g. surgery) in Additional Locations

New Hubs

- Specialty Hospitals as Referral Hubs in Additional Locations
- New Broader-Line Hospital 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 Health Care Delivery

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Value-Based Healthcare Delivery: Implications for Contracting Parties/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 participant
  – 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

• Providers can establish **direct relationships with employers** to enable value based approaches
Value-Based Health Care Delivery: Implications for Government

• Establish **universal measurement** and **reporting** of provider **health outcomes**
  – Also require universal reporting by **health plans**

• Remove obstacles to the **restructuring of health care delivery** around the integrated care of medical conditions

• Shift reimbursement systems to **bundled prices for cycles of care** instead of payments for discrete treatments or services

• **Open up competition** among providers and across geography

• 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 policies that encourage greater **responsibility of individuals** for their health and their health care