Welcome by Robert Huckman, Faculty Co-Chair of Healthcare Initiative

Introduction by Emily Kloeblen and Zihan Lin, MBA ‘12, Co-President of Healthcare Club
Value-Based Health Care Delivery

Professor Michael E. Porter
Harvard Business School
Institute for Strategy and Competitiveness
www.isc.hbs.edu

HBS Healthcare Initiative & Healthcare Club
March 7, 2012

This presentation draws on Redefining Health Care: Creating Value-Based Competition on Results (with Elizabeth O. Teisberg), Harvard Business School Press, May 2006; “A Strategy for Health Care Reform—Toward a Value-Based System,” New England Journal of Medicine, June 3, 2009; “Value-Based Health Care Delivery,” Annals of Surgery 248: 4, October 2008; “Defining and Introducing Value in Healthcare,” Institute of Medicine Annual Meeting, 2007. Additional information about these ideas, as well as case studies, can be found the Institute for Strategy & Competitiveness Redefining Health Care website at http://www.hbs.edu/rhc/index.html. 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 O. Teisberg.
Redefining Health Care Delivery

• The core issue in health care is the **value of health care delivered**

  Value: Patient health outcomes per dollar spent

• Value is the only goal that can **unite the interests** of all system participants

• How to design a health care delivery system that **dramatically improves patient value**

• 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 methods, and payment models

• Care pathways, process improvements, safety initiatives, case managers, disease management and other **overlays** to the current structure are beneficial, but not sufficient
Creating The Right Kind of Competition

- Patient **choice** and **competition** for patients are powerful forces to encourage continuous improvement in value and restructuring of care.

- Today’s competition in health care is not aligned with value.

  [Diagram: Financial success of system participants ≠ Patient success]

- Creating positive-sum **competition on value** is fundamental to health care reform in every country.
Principles of Value-Based Health Care Delivery

• The overarching goal in health care must be **value for patients**, not access, cost containment, convenience, or customer service.

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

– Outcomes are the **health results that matter for a patient’s condition** over the care cycle.
– Costs are the **total costs of care for a patient’s condition** over the care cycle.
Principles of Value-Based Health Care Delivery

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

<table>
<thead>
<tr>
<th>Prevention of illness</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>Right treatment to the right patient</td>
<td>More complete recovery</td>
</tr>
<tr>
<td>Rapid cycle time of diagnosis and treatment</td>
<td>Greater functionality and less need for long term care</td>
</tr>
<tr>
<td>Treatment earlier in the causal chain of disease</td>
<td>Fewer recurrences, relapses, flare ups, or acute episodes</td>
</tr>
<tr>
<td>Less invasive treatment methods</td>
<td>Reduced need for ER visits</td>
</tr>
<tr>
<td></td>
<td>Slower disease progression</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
Creating a Value-Based Health Care Delivery System

The Strategic Agenda

1. Organize Care into Integrated Practice Units (IPUs) around Patient Medical Conditions
   - Organize primary and preventive care to serve distinct patient segments

2. Measure Outcomes and Cost for Every Patient

3. Reimburse through Bundled Prices for Care Cycles

4. Integrate Care Delivery Across Separate Facilities

5. Expand Areas of Excellence Across Geography

6. Build an Enabling Information Technology Platform
1. Organizing Care Around Patient Medical Conditions

Migraine Care in Germany

Existing Model:
Organize by Specialty and Discrete Services

1. Organizing Care Around Patient Medical Conditions

Migraine Care in Germany

**Existing Model:**
Organize by Specialty and Discrete Services

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

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

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

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
  – Involving multiple specialties and services
  – Including common co-occurring conditions and complications

• In primary / preventive care, the unit of value creation is defined patient segments with similar preventive, diagnostic, and primary treatment needs (e.g. healthy adults, frail elderly)

• The medical condition / patient segment is the proper unit of value creation and the unit of value measurement in health care delivery
## Integrating Across the Cycle of Care: Breast Cancer

<table>
<thead>
<tr>
<th>INFORMING AND ENGAGING</th>
<th>MEASURING</th>
<th>ACCESSING THE PATIENT</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>• Self exams</td>
<td>• Office visits</td>
<td>• Medical history</td>
<td>• Medical history</td>
<td>• Choosing a treatment plan</td>
<td>• Surgery (breast preservation or mastectomy, oncoplastic alternative)</td>
<td>• Periodic mammography</td>
<td></td>
</tr>
<tr>
<td>• Consultations on risk factors</td>
<td>• Mammograms</td>
<td>• Mammography unit</td>
<td>• Control of risk factors (obesity, high fat diet)</td>
<td>• Determining the specific nature of the disease (mammograms, pathology, biopsy results)</td>
<td>• Surgery prep (anesthetic risk assessment, EKG)</td>
<td>• Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue)</td>
<td>• Other imaging</td>
<td></td>
</tr>
<tr>
<td>• Counseling patient and family on the diagnostic process and the diagnosis</td>
<td>• Mammograms • Ultrasound • MRI • Labs (CBC, etc.) • Biopsy • BRACA 1, 2 • CT • Bone Scans</td>
<td>• Lab visits</td>
<td>• Genetic screening</td>
<td>• Genetic evaluation</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)</td>
<td>• Follow-up clinical exams</td>
<td></td>
</tr>
<tr>
<td>• Explaining patient treatment options/shared decision making</td>
<td>• Labs</td>
<td>• Office visits</td>
<td>• Clinical exams</td>
<td>• Labs</td>
<td>• Neo-adjuvant chemotherapy</td>
<td>• In-hospital and outpatient wound healing</td>
<td>• Treatment for any continued or later onset side effects or complications</td>
<td></td>
</tr>
<tr>
<td>• Patient and family psychological counseling</td>
<td>• Procedure-specific measurements</td>
<td>• Hospital visits</td>
<td>• Monitoring for lumps</td>
<td>• High risk clinic visits</td>
<td>• Adjuvant therapies</td>
<td>• Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue)</td>
<td>• Physical therapy</td>
<td></td>
</tr>
<tr>
<td>• Counseling on the treatment process</td>
<td>• Range of movement</td>
<td>• Hospital stays</td>
<td>• Medical history</td>
<td>• Office visits</td>
<td>• Surgery (breast preservation or mastectomy, oncoplastic alternative)</td>
<td>• Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue)</td>
<td>• Physical therapy</td>
<td></td>
</tr>
<tr>
<td>• Education on managing side effects and avoiding complications</td>
<td>• Side effects measurement</td>
<td>• Visits to outpatient radiation or chemotherapy units</td>
<td>• Control of risk factors (obesity, high fat diet)</td>
<td>• Lab visits</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)</td>
<td>• Other imaging</td>
<td></td>
</tr>
<tr>
<td>• Achieving compliance</td>
<td>• MRI, CT</td>
<td>• Pharmacy visits</td>
<td>• Genetic evaluation</td>
<td>• High risk clinic visits</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies</td>
<td>• Follow-up clinical exams</td>
<td></td>
</tr>
<tr>
<td>• Psychological counseling</td>
<td>• Recurring mammograms (every six months for the first 3 years)</td>
<td>• Pharmacy visits</td>
<td>• Explaining patient treatment options/shared decision making</td>
<td>• Self exams</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies</td>
<td>• Treatment for any continued or later onset side effects or complications</td>
<td></td>
</tr>
<tr>
<td>• Achieving compliance</td>
<td>• Office visits</td>
<td>• Rehabilitation facility visits</td>
<td>• Explaining patient treatment options/shared decision making</td>
<td>• Mammograms</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies</td>
<td>• Treatment for any continued or later onset side effects or complications</td>
<td></td>
</tr>
<tr>
<td>• Counseling on long term risk management</td>
<td>• Lab visits</td>
<td>• Pharmacy visits</td>
<td>• Explaining patient treatment options/shared decision making</td>
<td>• Ultrasound</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies</td>
<td>• Treatment for any continued or later onset side effects or complications</td>
<td></td>
</tr>
<tr>
<td>• Counseling on long term risk management</td>
<td>• Mammographic labs and imaging center visits</td>
<td>• Monitoring for lumps</td>
<td>• Explaining patient treatment options/shared decision making</td>
<td>• Bone Scans</td>
<td>• Plastic or oncoplastic surgery evaluation</td>
<td>• Adjuvant therapies</td>
<td>• Treatment for any continued or later onset side effects or complications</td>
<td></td>
</tr>
</tbody>
</table>

### INFORMING
- Advice on self screening
- Consultations on risk factors

### ENGAGING
- 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
- Achieving compliance
- Psychological counseling
- Counseling on long term risk management
- Achieving compliance

### MEASURING
- Self exams
- Mammograms
- Mammograms • Ultrasound • MRI • Labs (CBC, 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 THE PATIENT
- Office visits
- Mammography unit
- Lab visits
- Office visits
- Lab visits
- High risk clinic visits
- Office visits
- Hospital visits
- Lab visits
- Hospital stays
- Visits to outpatient radiation or chemotherapy units
- Pharmacy visits
- Office visits
- Rehabilitation facility visits
- Pharmacy 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

### 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 oncoplastic 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/REHABING
- Periodic mammography
- Other imaging
- Follow-up clinical exams
- Treatment for any continued or later onset side effects or complications
Attributes of an Integrated Practice Unit (IPU)

1. Organized around the patient medical condition or set of closely related conditions (or patient segment in primary care)
2. Involves a dedicated, multidisciplinary team who devotes a significant portion of their time to the condition
3. Providers involved are members of or affiliated with a common organizational unit
4. Provides the full cycle of care for the condition
   - Encompassing outpatient, inpatient, and rehabilitative care as well as supporting services (e.g. nutrition, social work, behavioral health)
5. Includes patient education, engagement, and follow-up
6. Utilizes a single administrative and scheduling structure
7. Co-located in dedicated facilities
8. Care is led by a physician team captain and a care manager who oversee each patient’s care process
9. Measures outcomes, costs, and processes for each patient using a common information platform
10. Meets formally and informally on a regular basis to discuss patients, processes and results
11. Accepts joint accountability for outcomes and costs
Integrating Mental Health and Physical Health

• More than a quarter of adults with physical health problems also suffer from mental illness
  – E.g., depression is 2 to 3 times more common following a heart attack or stroke and leads to worse clinical outcomes

• Mental illness is common in primary care, yet underrecognized and undertreated
  – 25% of primary care patients have depression or anxiety
  – Primary care providers recognize only half of all mental illnesses
  – Among patients with recognized illness, only half are offered medication

• Patients with mental illness frequently present to primary care with physical health symptoms (e.g. fatigue, insomnia, palpitations)

• Primary care providers, focusing on physical ailments, can overlook underlying psychological causes

• Physical health IPUs should include dedicated mental health providers who understand the mental health needs of the patients they treat, detect developing mental illness, and intervene early
  – Social workers or other mid-level providers can occupy such roles, referring out complex cases to psychologists or psychiatrists

• Incorporating mental health clinicians into primary care will improve patient value
• Volume and experience will have an even greater impact on value in an IPU structure than in the current system.
# Role of Volume in Value Creation

## Fragmentation of Hospital Services in 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>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>


- **Minimum volume standards**, in the absence of rigorous outcome information, are an interim step to drive value and service consolidation.
Low Volume Undermines Value: Germany

Mortality of low-birth weight infants in Baden-Württemberg

2. Measuring Outcomes and Cost for Every Patient

- **Patient Initial Conditions**
  - Protocols/Guidelines
  - E.g., Staff certification, facilities standards

- **Processes**
  - E.g., Hemoglobin A1c levels for diabetics

- **Indicators**

- **(Health) Outcomes**

**Diagram Notes:**
- Patient Adherence
- Structure
The Outcome Measures Hierarchy

Tier 1

Health Status
Achieved or Retained

Survival

Degree of health/recovery

Time to recovery and return to normal activities

Disutility of the care or treatment process (e.g., diagnostic errors and ineffective care, treatment-related discomfort, complications, or adverse effects, treatment errors and their consequences in terms of additional treatment)

Tier 2

Process of Recovery

Sustainability of health/recovery and nature of recurrences

Tier 3

Sustainability of Health

Long-term consequences of therapy (e.g., care-induced illnesses)

Source: NEJM Dec 2010
The Outcome Measures Hierarchy
Head and Neck Cancer

**Survival**
- Survival
- Cancer free survival

**Degree of recovery / health**
- Achieved remission
- Ability to speak
- Ability to eat normally
- Maintenance of facial appearance
- Pain status
- Mental health status

**Time to recovery or return to normal activities**
- Time to remission
- Time to completion of treatment plan
- Time to normal speech
- Time to feeding tube removal
- Time to best pain status
- Days of work missed

**Disutility of care or treatment process**
(e.g., treatment-related discomfort, complications, adverse effects, diagnostic errors, treatment errors)
- Nosocomial infection
- Nausea/Vomiting
- Fatigue
- Febrile neutropenia
- Thrombocytopenia
- Radiation dermatitis
- Anxiety
- Depression
- Pain
- Loss of speech
- Need for feeding tube
- Unnecessary facial disfigurement

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

**Long-term consequences of therapy**
(e.g., care-induced illnesses)
- Secondary cancer related to radiation exposure
- Premature osteoporosis
- Permanent facial disfigurement
- Dysphasia
- Lymphoma
- Long-term depression due to treatment
- Hormone imbalance/replacement dependence
Adult Kidney Transplant Outcomes
U.S. Centers, 1987-1989

Number of programs: 219
Number of transplants: 19,588
One 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, 2008-2010

Number of programs included: 236
Number of transplants: 38,535
1-year graft survival: 93.55%

- 8 greater than expected graft survival (3.4%)
- 14 worse than expected graft survival (5.9%)
Measuring the Cost of Care Delivery: Principles

• Cost is the **actual expense** of patient care, not the **charges** billed or collected

• Cost should be measured around the **patient**

• Cost should be aggregated over the **full cycle of care for the patient’s medical condition**, not for departments, services, or line items

• Cost depends on the **actual use of resources** involved in a patient’s care process (personnel, facilities, supplies)
  
  – The **time** devoted to each patient by these resources
  
  – The **capacity cost** of each resource
  
  – The **support costs** required for each patient facing a resource
Mapping Resource Utilization
MD Anderson Cancer Center – New Patient Visit

Registration and Verification
- Receptionist, Patient Access Specialist, Interpreter

Intake
- Nurse, Receptionist

Clinician Visit
- MD, mid-level provider, medical assistant, patient service coordinator, RN

Plan of Care Discussion
- RN/LVN, MD, mid-level provider, patient service coordinator

Plan of Care Scheduling
- Patient Service Coordinator

Legend:
- RCPT: Receptionist
- INT: Interpreter
- PAS: Patient Access Specialist
- RN: Registered Nurse
- MD: Medical Doctor
- MA: Medical Assistant
- PSC: Patient Service Coordinator
- Pt: Patient, outside of process
- PHDB: Patient History Database

2012.03.07 Value-Based Health Care Delivery
Selected Cost Reduction Opportunities in Health Care

- **Process variation** that reduces efficiency without improving outcomes
- Over-provision of **low- or non-value adding** services or tests
  - Sometimes to follow rigid protocols or justify billing
- Redundant **administrative** and **scheduling** units
- **Low utilization** of expensive physicians, staff, clinical space and equipment, partly due to duplication and service fragmentation
- Use of **physicians and skilled staff** for less skilled activities
- Delivering care in **over-resourced** facilities
  - E.g. routine care delivered in expensive hospital settings
- **Long cycle times** and unnecessary delays
- Excess **inventory** and weak inventory management
- Focus on minimizing the costs of discrete services rather than **optimizing the total cost** of the care cycle
- Lack of **cost awareness** in clinical teams

- There are numerous cost reduction opportunities that do not require outcome **tradeoffs**, but will actually **improve outcomes**
3. Reimbursing through Bundled Prices for Care Cycles

Bundled Price

- A single price covering the **full care cycle for an acute medical condition**
- Time-based reimbursement for overall care of a **chronic condition**
- Time-based reimbursement for **primary/preventive care** for a **defined patient segment**

Fee for service

Bundled reimbursement for medical conditions

Global capitation
Bundled Payment in Practice
Hip and Knee Replacement in Stockholm, Sweden

- **Components** of the bundle

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

- Currently 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
- **Mandatory reporting** by providers to the joint registry plus supplementary reporting
- Applies to all qualifying patients. Provider participation is **voluntary**, but all providers are continuing to offer total joint replacements
- The Stockholm bundled price for a knee or hip replacement is about **US $8,000**
4. Integrating Care Delivery Across Separate Facilities

Children’s Hospital of Philadelphia Care Network

The Children’s Hospital of Philadelphia®

Network Hospitals:
- CHOP Newborn Care
- CHOP Pediatric Care
- CHOP Newborn & Pediatric Care

Wholly-Owned Outpatient Units:
- Pediatric & Adolescent Primary Care
- Pediatric & Adolescent Specialty Care Center
- Pediatric & Adolescent Specialty Care Center & Surgery Center
- Pediatric & Adolescent Specialty Care Center & Home Care

Copyright © Michael Porter 2011
Four Levels of Provider System Integration

1. Choose an **overall scope of services** where the provider system can achieve excellence in value

2. **Rationalize service lines / IPUs across facilities** to improve volume, better utilize resources, and deepen teams

3. Offer specific services at the **appropriate facility**
   - E.g. acuity level, resource intensity, cost level, need for convenience

4. Clinically integrate care **across units and facilities** using an IPU structure
   - Integrate services across the care cycle
   - Integrate preventive/primary care units with specialty IPUs

   • There are major value improvements available from **concentrating volume** by medical condition and moving care **out of heavily resourced** hospital, tertiary and quaternary facilities
5. Expanding Across Geography
The Cleveland Clinic Affiliate Practices

- Central DuPage Hospital, IL
  Cardiac Surgery

- Chester County Hospital, PA
  Cardiac Surgery

- Pikeville Medical Center, KY
  Cardiac Surgery

- Cape Fear Valley Medical Center, NC
  Cardiac Surgery

- McLeod Heart & Vascular Institute, SC
  Cardiac Surgery

- Cleveland Clinic Florida Weston, FL
  Cardiac Surgery

- Rochester General Hospital, NY
  Cardiac Surgery
6. Building 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 |
| • Data encompasses the **full care cycle**, including care by referring entities |
| • Allow access and communication among **all involved parties**, including with patients |
| • **Templates** for medical conditions to enhance the user interface |
| • “**Structured**” data vs. free text |
| • Architecture that allows easy extraction of **outcome measures**, **process measures**, and **activity-based cost measures** for each patient and medical condition |
| • Interoperability standards enabling communication among **different provider** (and payor) **organizations** |
A Mutually Reinforcing Strategic Agenda

- Organize into Integrated Practice Units
- Measure Outcomes and Cost For Every Patient
- Move to Bundled Prices for Care Cycles
- Integrate Care Delivery Across Separate Facilities
- Grow Excellent Services Across Geography

Build an Enabling IT Platform
Creating a Value-Based Health Care Delivery System

Implications for Government

1. Organise Care into Integrated Practice Units (IPUs) Around Patient Medical Conditions
   - **Reduce regulatory obstacles to care integration**
   - **Introduce certification standards** that include multidisciplinary teams, care cycle coverage, unified patient scheduling, and care management

2. Measure Outcomes and Cost for Every Patient
   - **Create a national framework of medical condition outcome registries** and a path to universal measurement
   - **Tie reimbursement to outcome reporting** (e.g., through registries)
   - **Introduce cost accounting standards** that measure actual resource use by patient condition

3. Reimburse through Bundled Prices for Care Cycles
   - **Create a bundled pricing framework** and support local roll out across specialty conditions and primary care segments
Creating a Value-Based Health Care Delivery System

Implications for Government

4. Integrate Care Delivery Across Separate Facilities
   • *Introduce minimum volume standards* by medical condition to enable consolidation of services to support excellence

5. Expand Excellent IPUs Across Geography
   • *Encourage affiliations* between providers who fall below minimum volume standards and qualifying centers of excellence for more complex care

6. Build an Enabling Information Technology Platform
   • *Set standards* for common data definitions, interoperability, and the ability to easily extract outcome, process, and costing measures for qualifying HIT systems
   • *Promote transparency* and patient ownership of information