

# Value-Based Health Care Delivery

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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.

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# 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

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

- 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** 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 of illness                            | - 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 recurrences, relapses, flare ups, or acute episodes |
| - Rapid cycle time of diagnosis and treatment      | - Slower disease progression                                |
| - Less invasive treatment methods                  | - Greater functionality and 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

# Creating a Value-Based Health Care Delivery System

## The Strategic Agenda

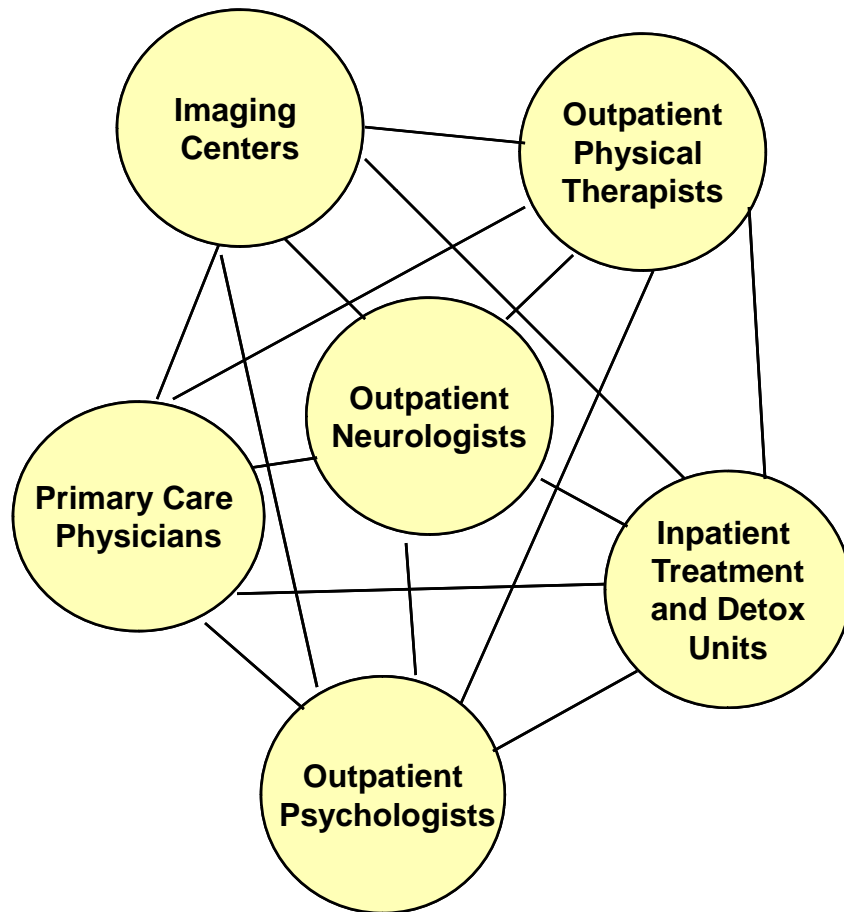
1. Organize into Integrated Practice Units (IPUs) Around Patient Medical Conditions
  - Organize primary and preventive care to serve **distinct patient populations**
2. Establish Universal Measurement of Outcomes and Cost for Every Patient
3. Move to Bundled Prices for Care Cycles
4. Integrate Care Delivery Across Separate Facilities
5. Expand Excellent IPUs Across Geography
6. Create an Enabling Information Technology Platform

# 1. Organize Around Patient Medical Conditions

## Migraine Care in Germany

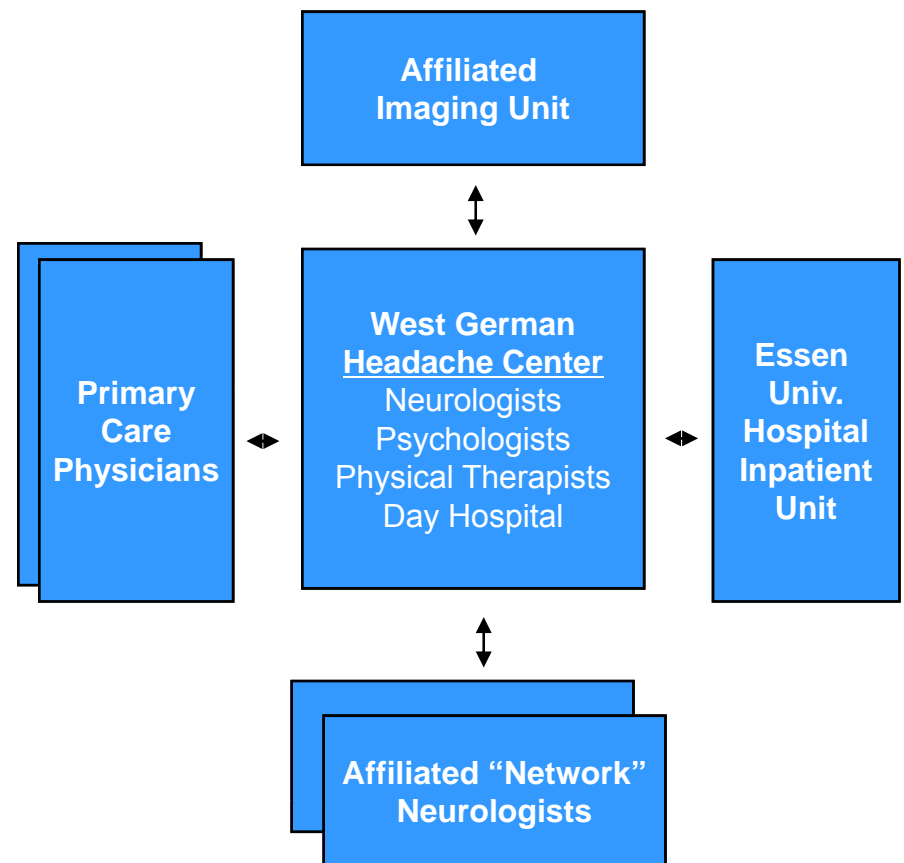
### Existing Model:

Organize by Specialty and Discrete Services



### New Model:

Organize into Integrated Practice Units (IPUs)



Source: Porter, Michael E., Clemens Guth, and Elisa Dannemiller, *The West German Headache Center: Integrated Migraine Care*, Harvard Business School Case 9-707-559, September 13, 2007

# Integrating Across the Cycle of Care

## Breast Cancer

<b>INFORMING AND ENGAGING</b>	<ul style="list-style-type: none"> <li>Advice on self screening</li> <li>Consultations on risk factors</li> </ul>	<ul style="list-style-type: none"> <li>Counseling patient and family on the diagnostic process and the diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>Explaining patient treatment options/shared decision making</li> </ul>	<ul style="list-style-type: none"> <li>Counseling on the treatment process</li> <li>Education on managing side effects and avoiding complications of treatment</li> <li>Achieving compliance</li> </ul>	<ul style="list-style-type: none"> <li>Counseling on rehabilitation options, process</li> <li>Achieving compliance</li> <li>Psychological counseling</li> </ul>	<ul style="list-style-type: none"> <li>Counseling on long term risk management</li> <li>Achieving Compliance</li> </ul>
			<ul style="list-style-type: none"> <li>Patient and family psychological counseling</li> </ul>			
<b>MEASURING</b>	<ul style="list-style-type: none"> <li>Self exams</li> <li>Mammograms</li> </ul>	<ul style="list-style-type: none"> <li>Mammograms</li> <li>Ultrasound</li> <li>MRI</li> <li>Labs (CBC, Blood chems, etc.)</li> <li>Biopsy</li> <li>BRACA 1, 2...</li> <li>CT</li> <li>Bone Scans</li> </ul>	<ul style="list-style-type: none"> <li>Labs</li> </ul>	<ul style="list-style-type: none"> <li>Procedure-specific measurements</li> </ul>	<ul style="list-style-type: none"> <li>Range of movement</li> <li>Side effects measurement</li> </ul>	<ul style="list-style-type: none"> <li>MRI, CT</li> <li>Recurring mammograms (every six months for the first 3 years)</li> </ul>
<b>ACCESSING</b>	<ul style="list-style-type: none"> <li>Office visits</li> <li>Mammography lab visits</li> </ul>	<ul style="list-style-type: none"> <li>Office visits</li> </ul>	<ul style="list-style-type: none"> <li>Office visits</li> </ul>	<ul style="list-style-type: none"> <li>Hospital stays</li> </ul>	<ul style="list-style-type: none"> <li>Office visits</li> </ul>	<ul style="list-style-type: none"> <li>Office visits</li> </ul>
		<ul style="list-style-type: none"> <li>Lab visits</li> </ul>	<ul style="list-style-type: none"> <li>Hospital visits</li> <li>Lab visits</li> </ul>	<ul style="list-style-type: none"> <li>Visits to outpatient radiation or chemotherapy units</li> </ul>	<ul style="list-style-type: none"> <li>Rehabilitation facility visits</li> <li>Pharmacy</li> </ul>	<ul style="list-style-type: none"> <li>Lab visits</li> <li>Mammographic labs and imaging center visits</li> </ul>
		<ul style="list-style-type: none"> <li>High risk clinic visits</li> </ul>		<ul style="list-style-type: none"> <li>Pharmacy</li> </ul>		
	<b>MONITORING/ PREVENTING</b>	<b>DIAGNOSING</b>	<b>PREPARING</b>	<b>INTERVENING</b>	<b>RECOVERING/ REHABING</b>	<b>MONITORING/MANAGING</b>
	<ul style="list-style-type: none"> <li>Medical history</li> <li>Control of risk factors (obesity, high fat diet)</li> <li>Genetic screening</li> <li>Clinical exams</li> <li>Monitoring for lumps</li> </ul>	<ul style="list-style-type: none"> <li>Medical history</li> <li>Determining the specific nature of the disease (mammograms, pathology, biopsy results)</li> <li>Genetic evaluation</li> <li>Labs</li> </ul>	<ul style="list-style-type: none"> <li>Choosing a treatment plan</li> <li>Surgery prep (anesthetic risk assessment, EKG)</li> </ul>	<ul style="list-style-type: none"> <li>Surgery (breast preservation or mastectomy, oncoplastic alternative)</li> </ul>	<ul style="list-style-type: none"> <li>In-hospital and outpatient wound healing</li> <li>Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphodema and chronic fatigue)</li> </ul>	<ul style="list-style-type: none"> <li>Periodic mammography</li> <li>Other imaging</li> </ul>
			<ul style="list-style-type: none"> <li>Plastic or onco-plastic surgery evaluation</li> <li>Neo-adjuvant chemotherapy</li> </ul>	<ul style="list-style-type: none"> <li>Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)</li> </ul>	<ul style="list-style-type: none"> <li>Physical therapy</li> </ul>	<ul style="list-style-type: none"> <li>Follow-up clinical exams</li> <li>Treatment for any continued or later onset side effects or complications</li> </ul>

Breast Cancer Specialist  
 Other Provider Entities

# What is Integrated Care?

## Attributes of an Integrated Practice Unit (IPU):

1. Organized around the **patient's medical condition**
2. Involves a **dedicated, multidisciplinary team** who devote a significant portion of their time to the condition
3. Where providers are part of a **common organizational unit**
4. Utilizing a **single administrative** and **scheduling structure**
5. Providing 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)
  - Including **patient education, engagement** and **follow-up**
6. **Co-located** in **dedicated facilities**
7. With a **physician team captain** and a **care manager** who oversee each patient's care process
8. Where the team **meets formally and informally** on a regular basis
9. And measures **outcomes** and **processes** as a **team**, not individually
10. Accepting **joint accountability** for outcomes and costs

# Integrated Models of Primary Care

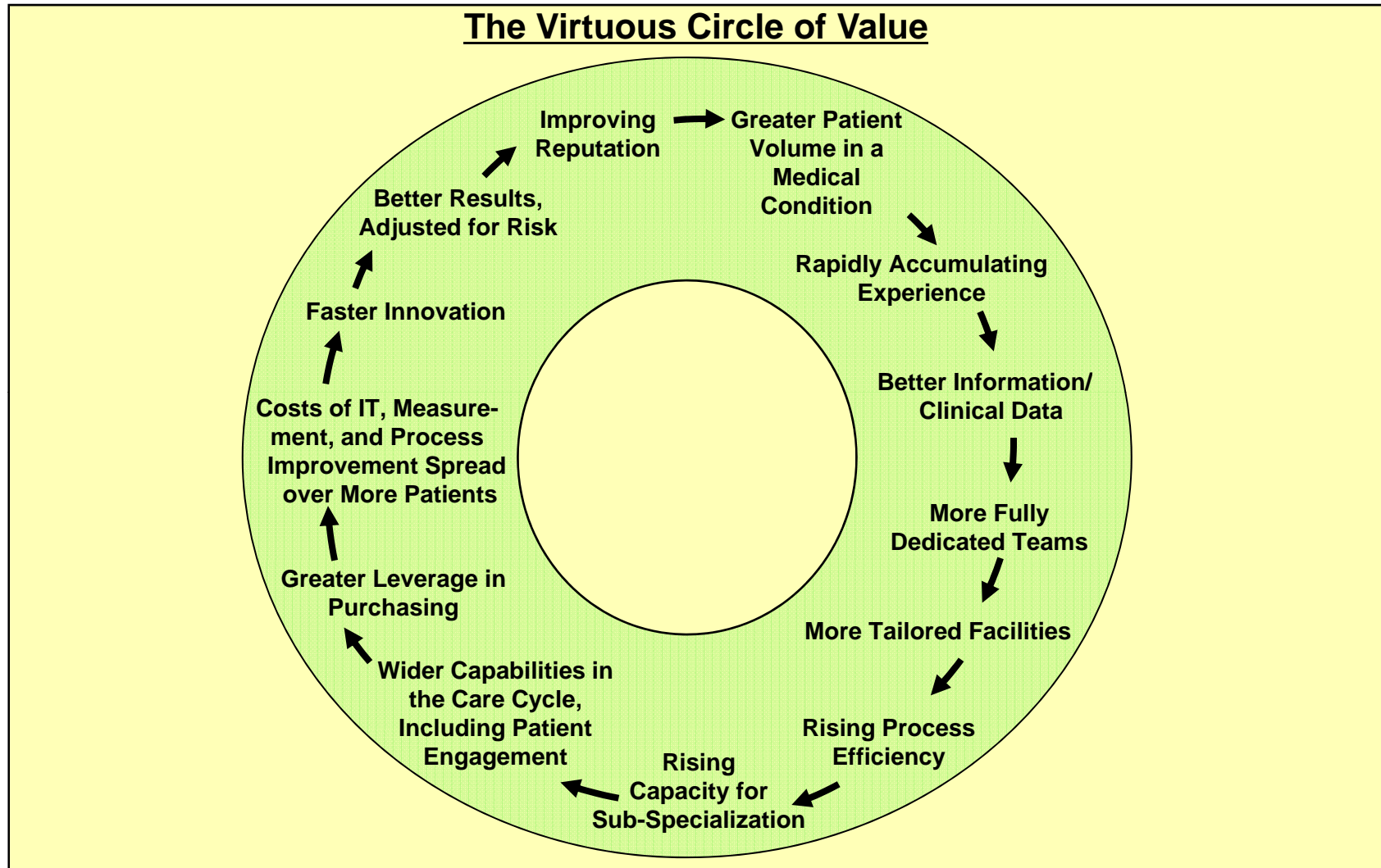
- Today's primary care is **fragmented** and attempts to address **overly broad needs** with limited resources



- Organize primary care around teams serving **specific patient populations** (e.g. healthy adults, frail elderly, type II diabetics) rather than attempting to be all things to all patients
- Deliver **defined service bundles** covering appropriate prevention, screening, diagnosis, wellness and health maintenance
- Provide services with **multidisciplinary teams** including ancillary health professionals and support staff, in **dedicated facilities**
- Form **alliances with specialty IPUs** covering the prevalent medical conditions represented in the patient population
- Deliver services not only in traditional settings but at the **workplace, schools, community organizations**, and in **other locations** offering regular patient contact and the ability to develop a group culture of wellness



# Volume in a Medical Condition Enables Value



- Volume and experience will have an even greater impact on value **in an IPU structure** than in the current system

# Fragmentation of Hospital Services Sweden

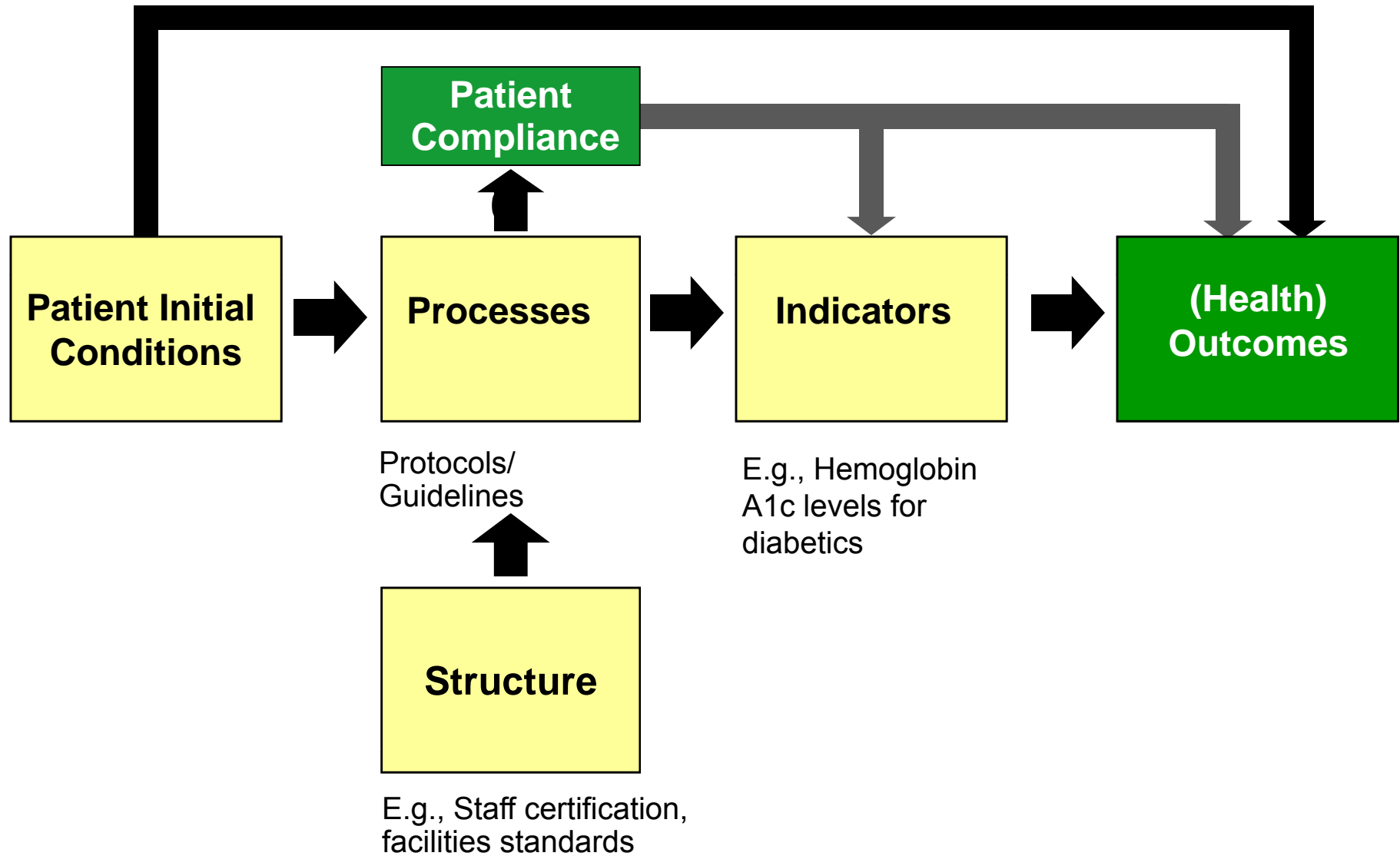
DRG	Number of admitting providers	Average percent of total national admissions	Average admissions/ provider/ year	Average admissions/ provider/ week
Knee Procedure	68	1.5%	55	1
Diabetes age > 35	80	1.3%	96	2
Kidney failure	80	1.3%	97	2
Multiple sclerosis and cerebellar ataxia	78	1.3%	28	1
Inflammatory bowel disease	73	1.4%	66	1
Implantation of cardiac pacemaker	51	2.0%	124	2
Splenectomy age > 17	37	2.6%	3	<1
Cleft lip & palate repair	7	14.2%	83	2
Heart transplant	6	16.6%	12	<1

Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

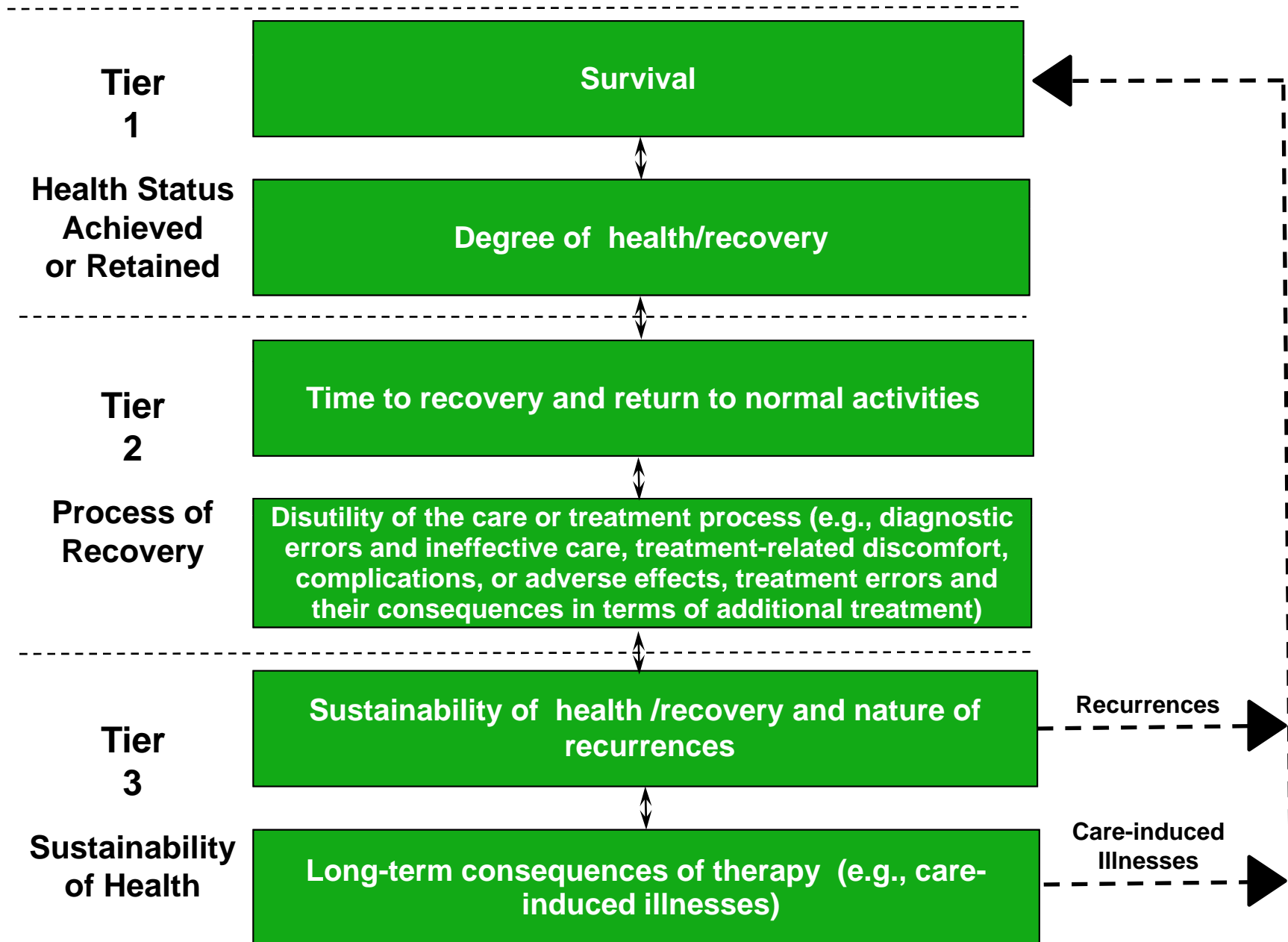


- **Minimum volume standards** in lieu of compelling outcome information is an interim step to drive service consolidation

## 2. Measure Outcomes and Cost for Every Patient



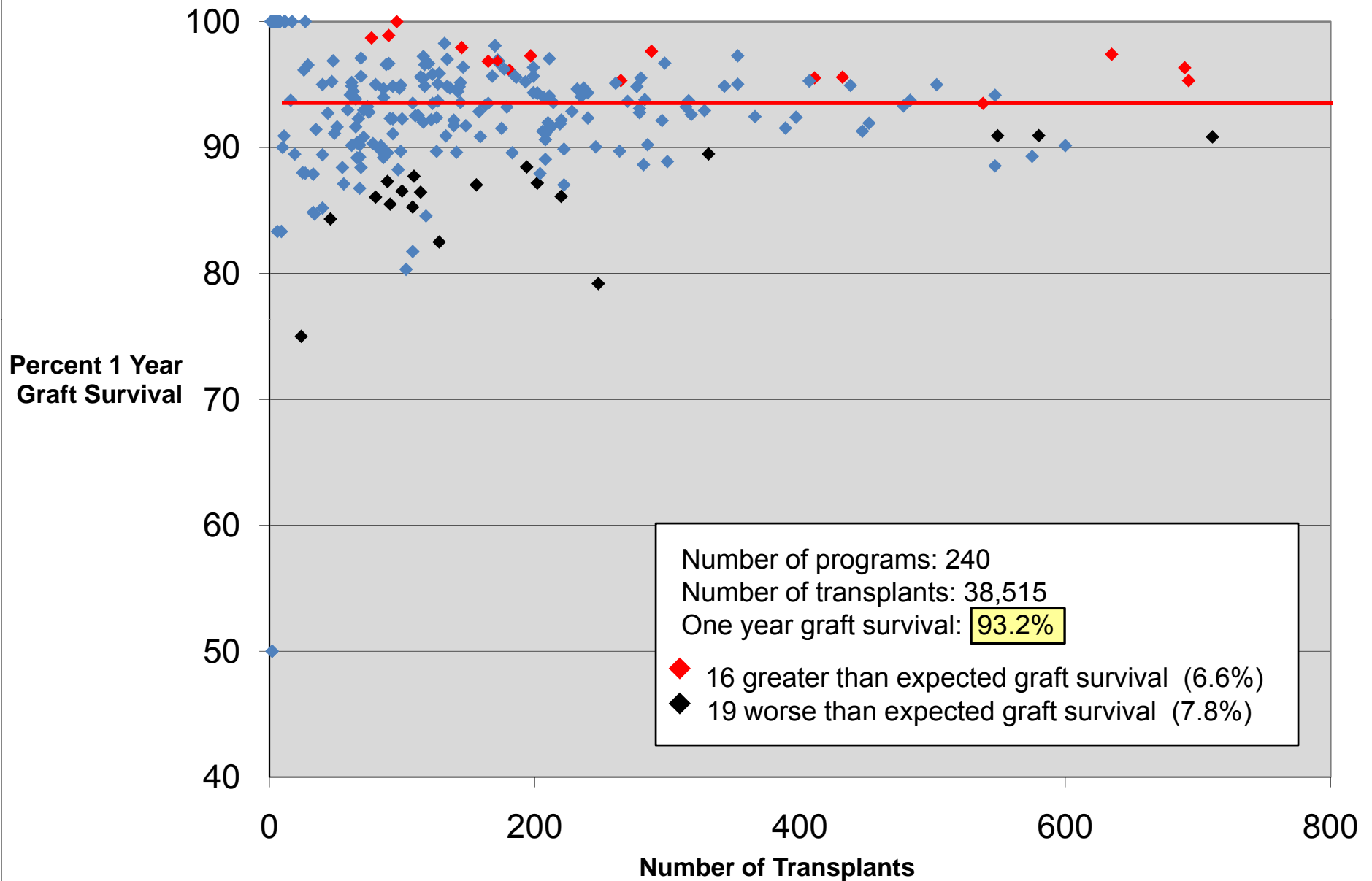
# The Outcome Measures Hierarchy





# Adult Kidney Transplant Outcomes

## U.S. Center Results, 2005-2007



# Cost Reduction in Health Care

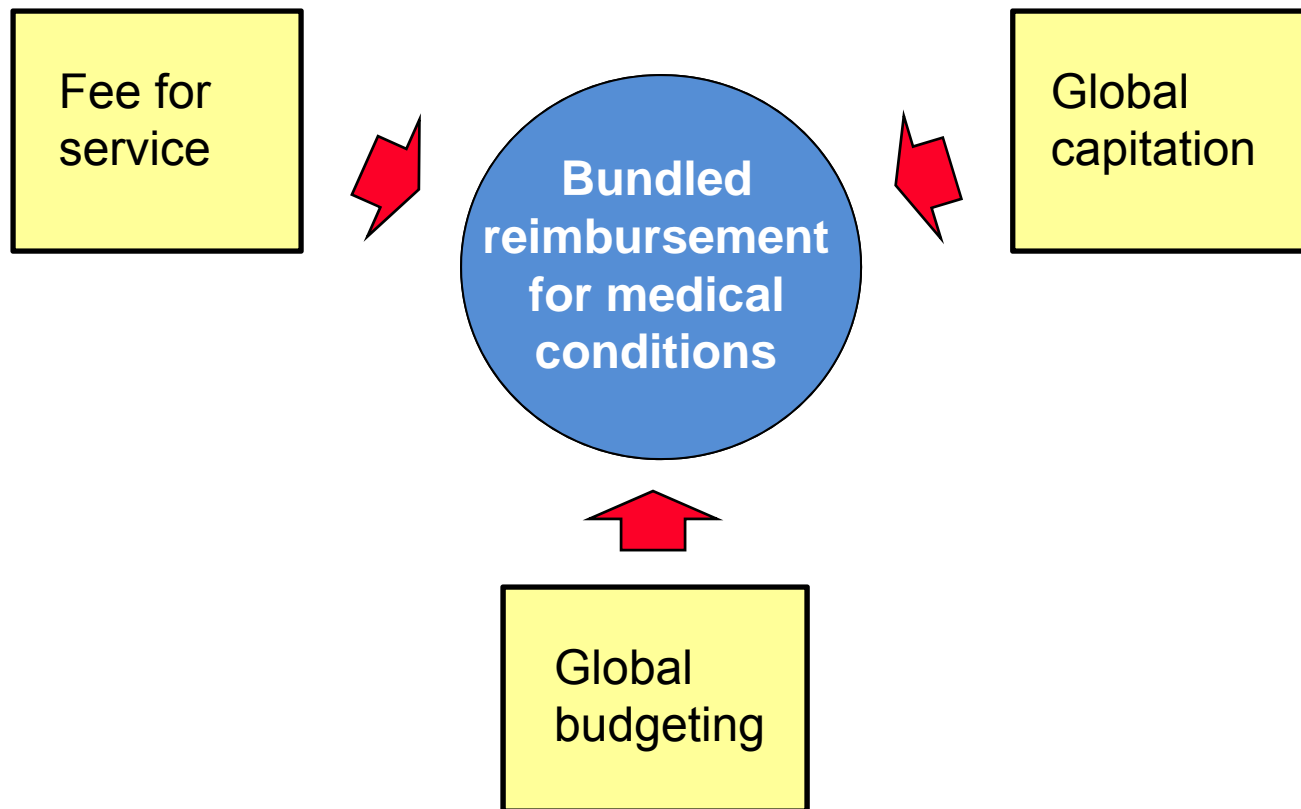
- Current organization structure and cost accounting practices in health care **obscure the understanding of actual costs** in care delivery
- There are major **opportunities for cost efficiencies**

- Over-resourced facilities
  - E.g. routine care delivered in expensive hospital settings
- Under-utilization of expensive clinical space, equipment, and facilities
- Poor utilization of highly skilled physicians and staff
- Over-provision of low- or no-value testing and other services in order to justify billing/follow rigid protocols
- Long cycle times
- Redundant administrative and scheduling personnel
- Missed opportunities for volume procurement
- Excess inventory and weak inventory management
- Lack of cost knowledge and awareness in clinical teams



- Such cost reduction opportunities **do not require outcome tradeoffs**, but may actually improve outcomes

### 3. Move to Bundled Prices for Care Cycles



- Bundled reimbursement covers the **full care cycle** for an acute medical condition, and **time-based reimbursement** for chronic conditions or primary/preventive care for a patient population




# Bundled Payment in Practice

## Hip and Knee Replacement in Stockholm, Sweden

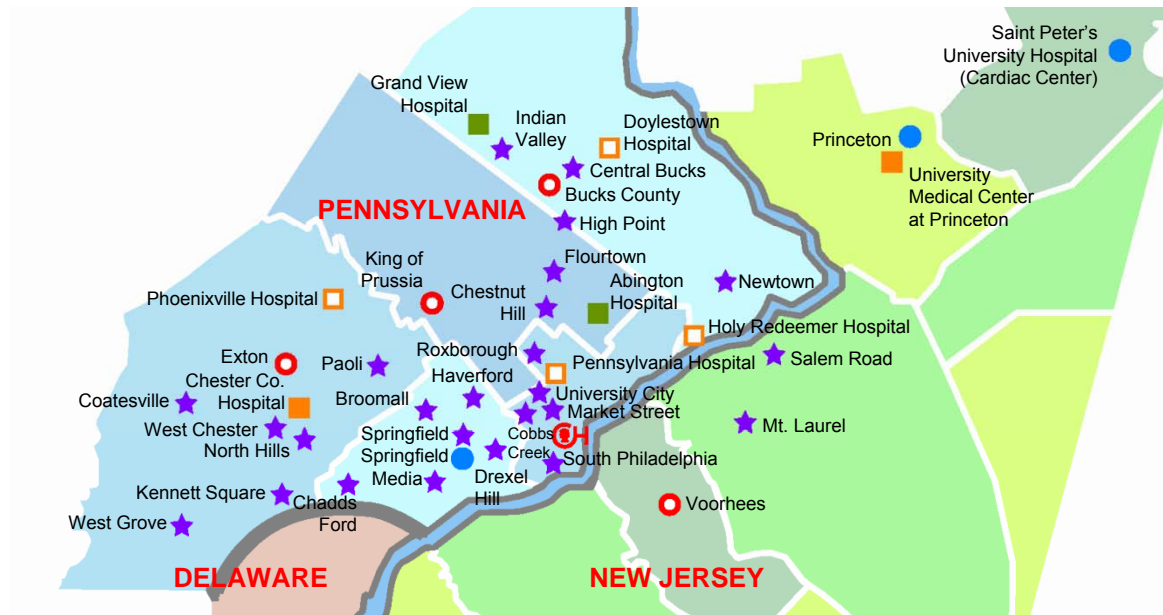
- **Components** of the bundle

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

- 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
  - Provider participation is **voluntary** but all providers are involved
- 
- The bundled price for a knee or hip replacement is about **US \$8,000**

## 4. Integrate Care Delivery Across Separate Facilities

### Children's Hospital of Philadelphia Care Network



- Choose an overall **scope of service lines** where the provider can achieve excellence
- **Rationalize service lines/ IPU** across facilities to improve volume, avoid duplication, and deepen teams
- **Offer specific services** at the **appropriate facility**
  - E.g. acuity level, cost level, need for convenience
- Clinically integrate **care across facilities**, within an IPU structure
  - **Expand** and **integrate** the care cycle
  - Better connect **preventive/primary care** units to specialty IPUs

## 5. Expand Excellent IPUs Across Geography

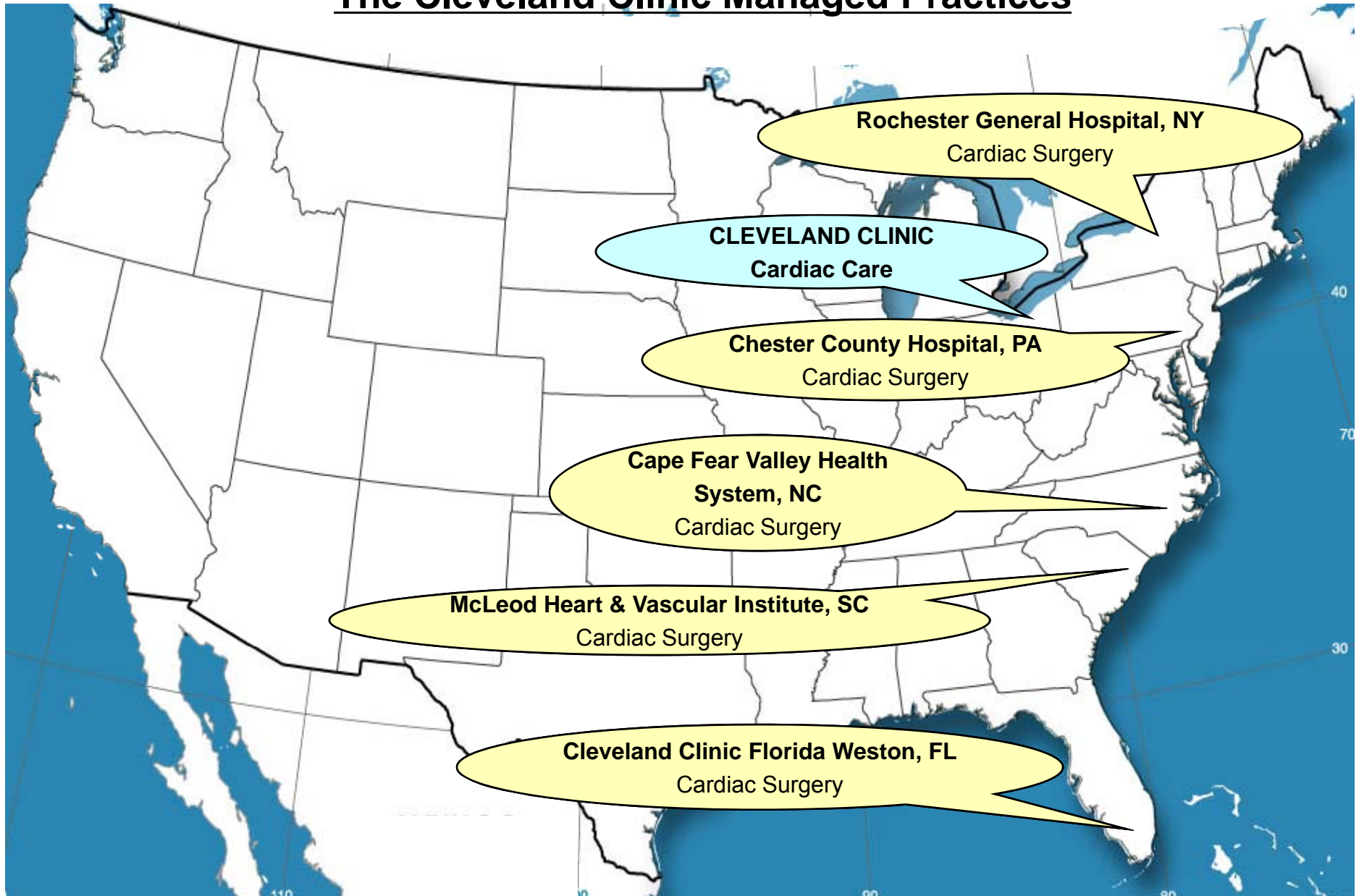
- Grow **areas of excellence** and **leverage across locations**, rather than adding broad line, stand-alone units



- **Affiliate with excellent providers** in medical conditions where there is insufficient volume or expertise to achieve superior value

# Expanding Excellent IPUs Across Geography

## The Cleveland Clinic Managed Practices



## 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
- Allows 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 measures, process measures, and activity based cost measures for each patient and medical condition**
- Interoperability standards enabling communication among **different provider systems**

# Value-Based Health Care Delivery: Implications for Government

- Establish **universal measurement** and **reporting** of **health outcomes**
- Remove obstacles to **integrated care for medical conditions**
- Shift reimbursement systems to **bundled prices for care cycles**
- **Open competition** among providers and across geography
- Set policies to encourage greater **involvement and responsibility of individuals** for their health and their health care
- Set standards and mandate **EMR adoption** that supports integrated care and outcome measurement