

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.

Redefining Health Care Delivery

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

Value: Patient health outcomes per dollar spent

- Delivering high and improving value is the **fundamental purpose** of health care
- 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

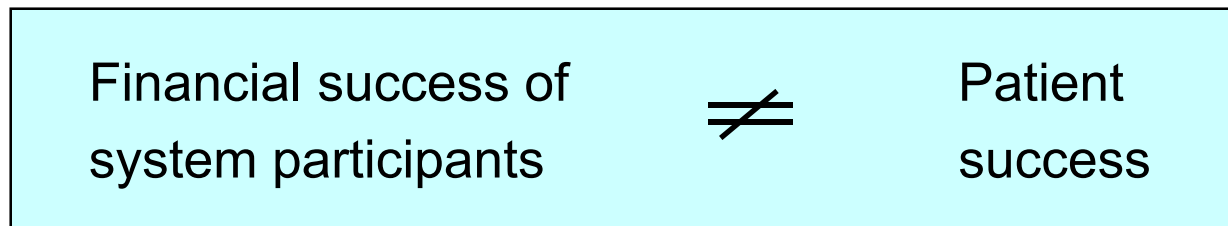
Creating a Value-Based Health Care System

- Significant improvement in value will require **fundamental restructuring of health care delivery**, not incremental improvements
- Today's delivery approaches reflect legacy organizational structures, management practices, and payment models that are inconsistent with modern learning practices and today's medical science.

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
- But today's competition in health care **is not aligned with value**



- Creating positive-sum **competition on value** for patients 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 **full set of health results 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

Creating a Value-Based Health Care Delivery System

The Strategic Agenda

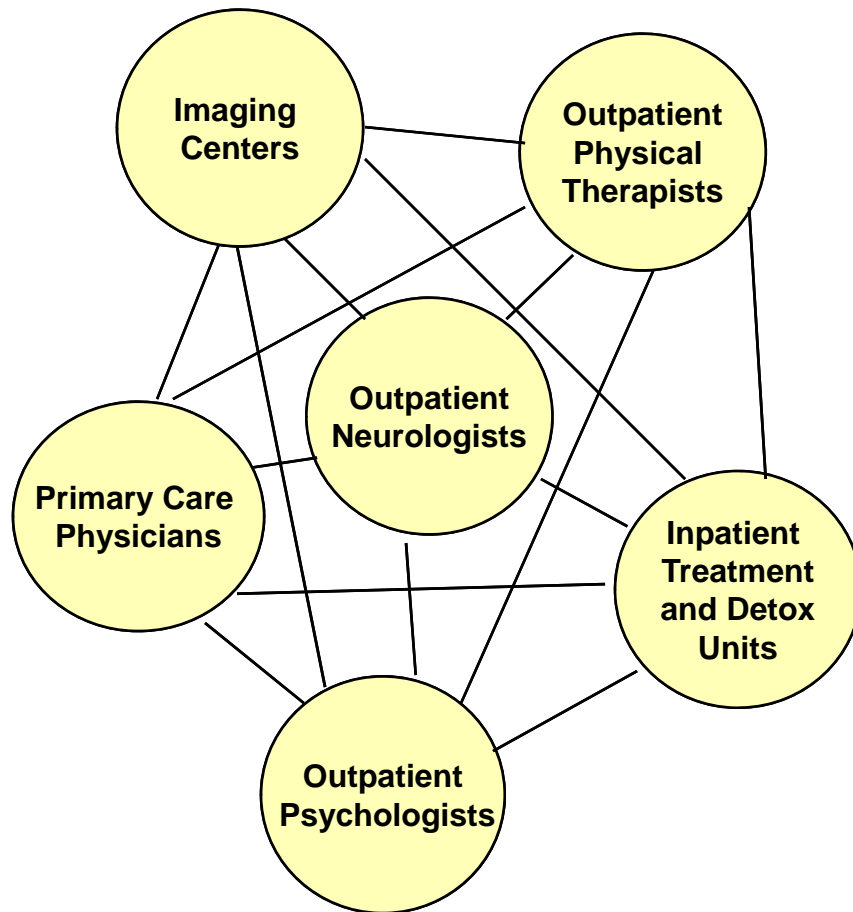
1. Organize Care into **Integrated Practice Units (IPUs)** around Patient Medical Conditions
 - Organize primary and preventive care to serve **distinct patient segments**
2. Measure **Outcomes** and **Cost** for Every Patient
3. Reimburse through **Bundled Prices** for Care Cycles
4. Integrate Care Delivery Across **Separate Facilities**
5. Expand Geographic Coverage by **Excellent Providers**
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



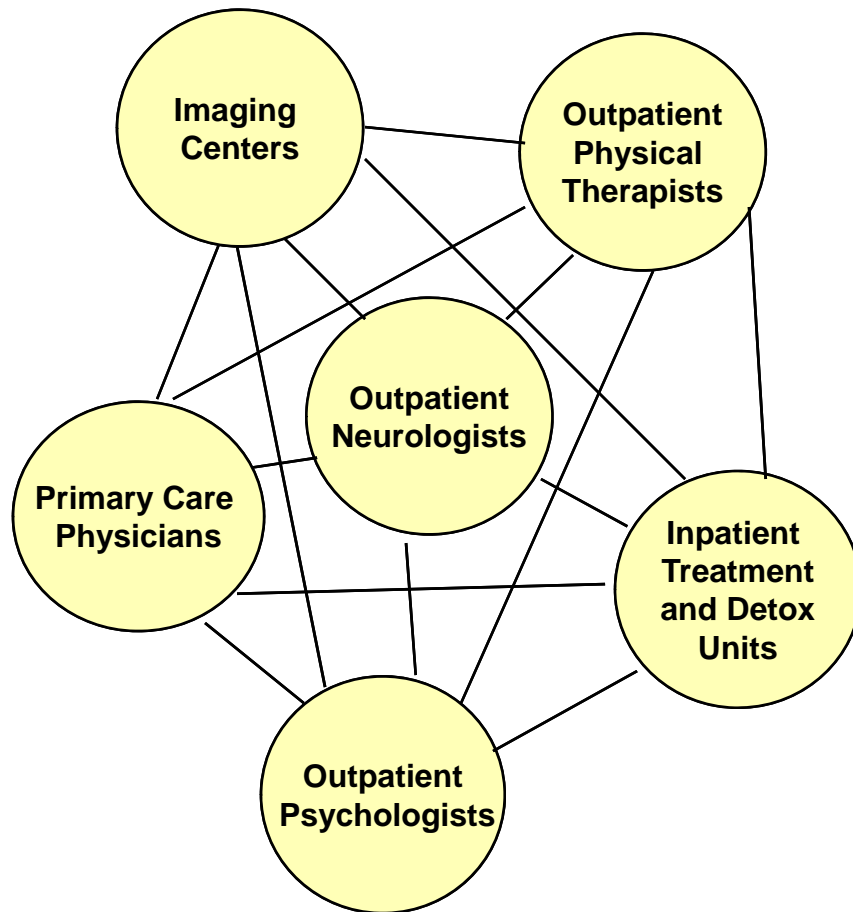
Source: Porter, Michael E., Clemens Guth, and Elisa Dannemiller, *The West German Headache Center: Integrated Migraine Care*, Harvard Business School Case 9-707-559, September 13, 2007

1. Organizing Care Around Patient Medical Conditions

Migraine Care in Germany

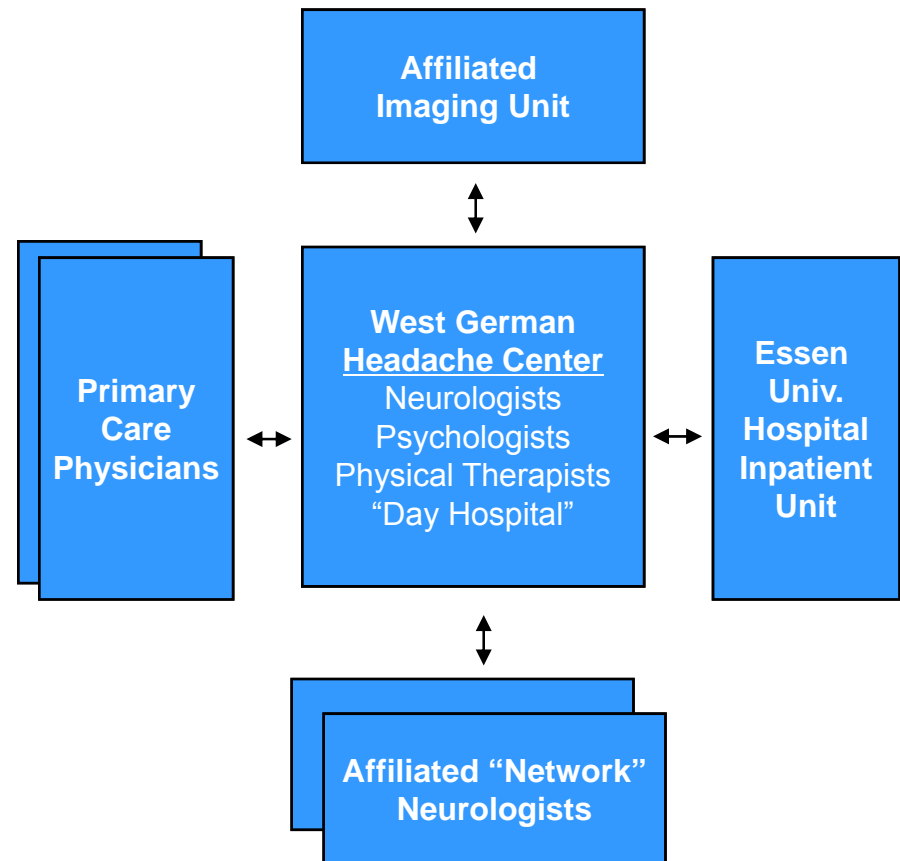
Existing Model:

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

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
 - E.g., diabetes, breast cancer, knee osteoarthritis
- 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

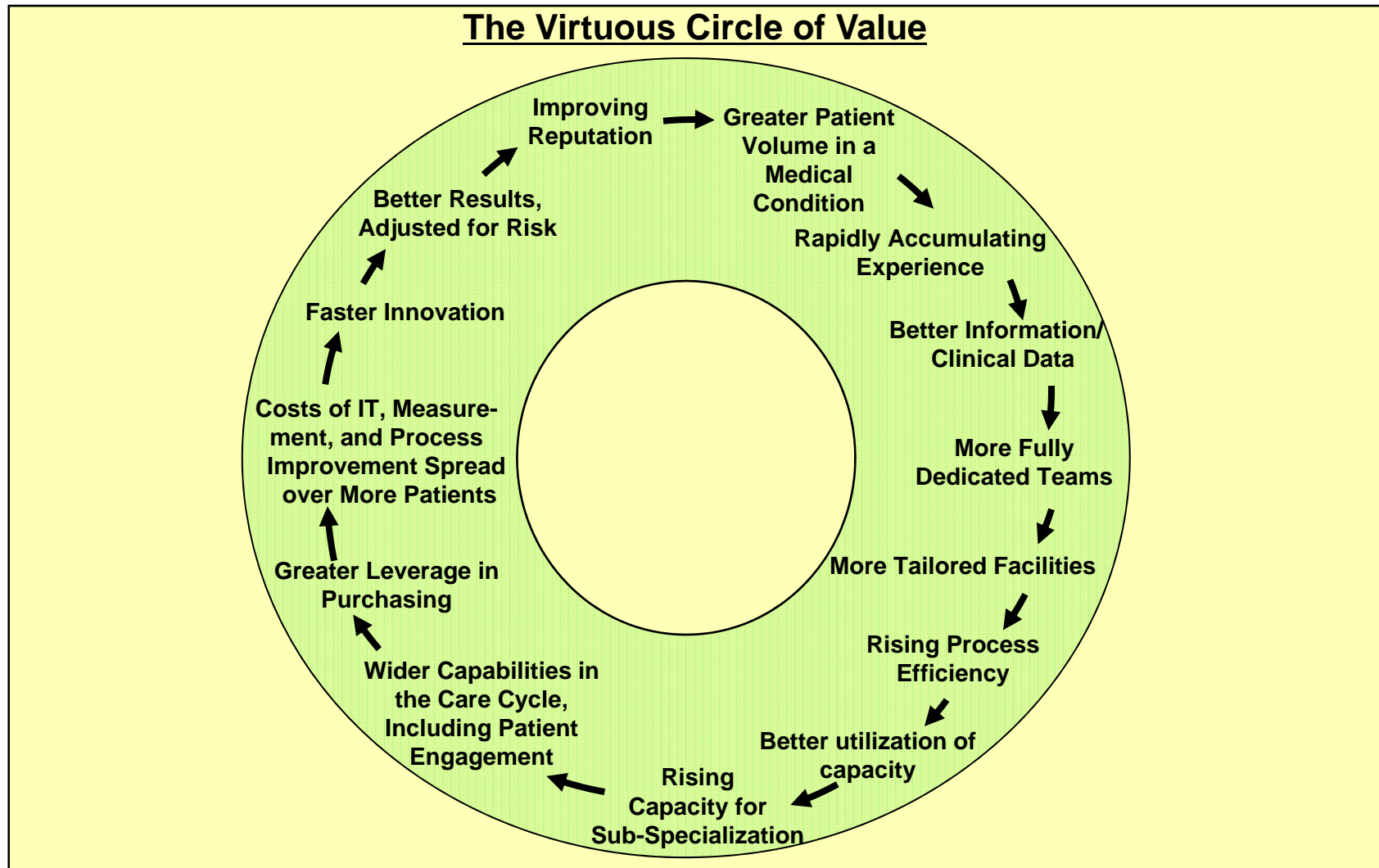
Integrating Across the Cycle of Care Breast Cancer

INFORMING AND ENGAGING	<ul style="list-style-type: none"> • Advice on self screening • Consultations on risk factors 	<ul style="list-style-type: none"> • Counseling patient and family on the diagnostic process and the diagnosis 	<ul style="list-style-type: none"> • Explaining patient treatment options/ shared decision making • Patient and family psychological counseling 	<ul style="list-style-type: none"> • Counseling on the treatment process • Education on managing side effects and avoiding complications • Achieving compliance 	<ul style="list-style-type: none"> • Counseling on rehabilitation options, process • Achieving compliance • Psychological counseling 	<ul style="list-style-type: none"> • Counseling on long term risk management • Achieving compliance
MEASURING	<ul style="list-style-type: none"> • Self exams • Mammograms 	<ul style="list-style-type: none"> • Mammograms • Ultrasound • MRI • Labs (CBC, etc.) • Biopsy • BRACA 1, 2... • CT • Bone Scans 	<ul style="list-style-type: none"> • Labs 	<ul style="list-style-type: none"> • Procedure-specific measurements 	<ul style="list-style-type: none"> • Range of movement • Side effects measurement 	<ul style="list-style-type: none"> • MRI, CT • Recurring mammograms (every six months for the first 3 years)
ACCESSING THE PATIENT	<ul style="list-style-type: none"> • Office visits • Mammography unit • Lab visits 	<ul style="list-style-type: none"> • Office visits • Lab visits • High risk clinic visits 	<ul style="list-style-type: none"> • Office visits • Hospital visits • Lab visits 	<ul style="list-style-type: none"> • Hospital stays • Visits to outpatient radiation or chemotherapy units • Pharmacy visits 	<ul style="list-style-type: none"> • Office visits • Rehabilitation facility visits • Pharmacy visits 	<ul style="list-style-type: none"> • Office visits • Lab visits • Mammographic labs and imaging center visits
	MONITORING/ PREVENTING	DIAGNOSING	PREPARING	INTERVENING	RECOVERING/ REHABING	MONITORING/ MANAGING
	<ul style="list-style-type: none"> • Medical history • Control of risk factors (obesity, high fat diet) • Genetic screening • Clinical exams • Monitoring for lumps 	<ul style="list-style-type: none"> • Medical history • Determining the specific nature of the disease (mammograms, pathology, biopsy results) • Genetic evaluation • Labs 	<ul style="list-style-type: none"> • Choosing a treatment plan • Surgery prep (anesthetic risk assessment, EKG) • Plastic or oncologic surgery evaluation • Neo-adjuvant chemotherapy 	<ul style="list-style-type: none"> • Surgery (breast preservation or mastectomy, oncoplastic alternative) • Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy) 	<ul style="list-style-type: none"> • In-hospital and outpatient wound healing • Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue) • Physical therapy 	<ul style="list-style-type: none"> • 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. Takes responsibility for 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. Incorporates **patient education, engagement, and follow-up** as integral to care
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. Providers function as a team, **meeting formally and informally** on a regular basis to discuss patients, processes and results
11. Accepts **joint accountability** for outcomes and costs

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

Role of Volume in Value Creation

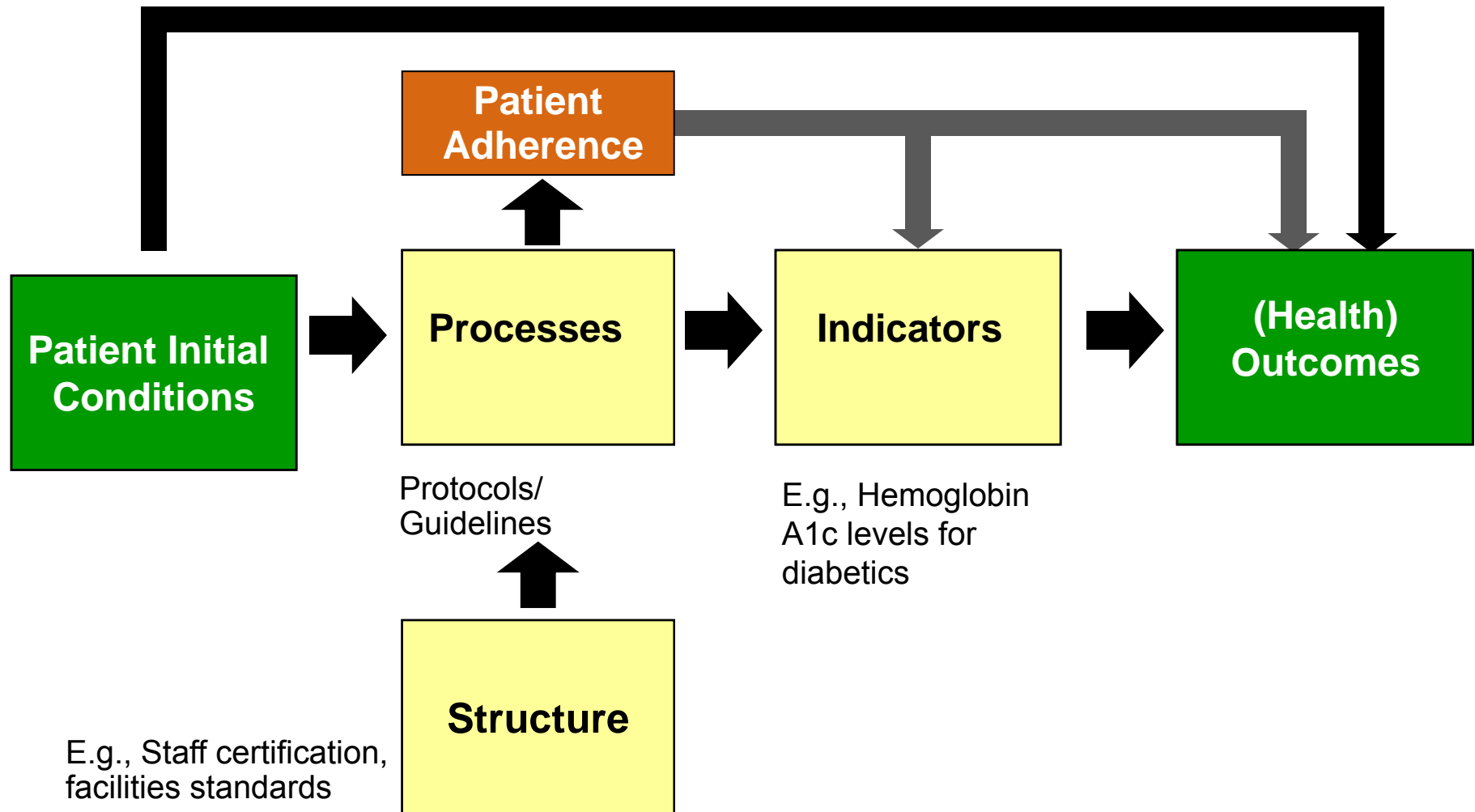
Fragmentation of Hospital Services in Sweden

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

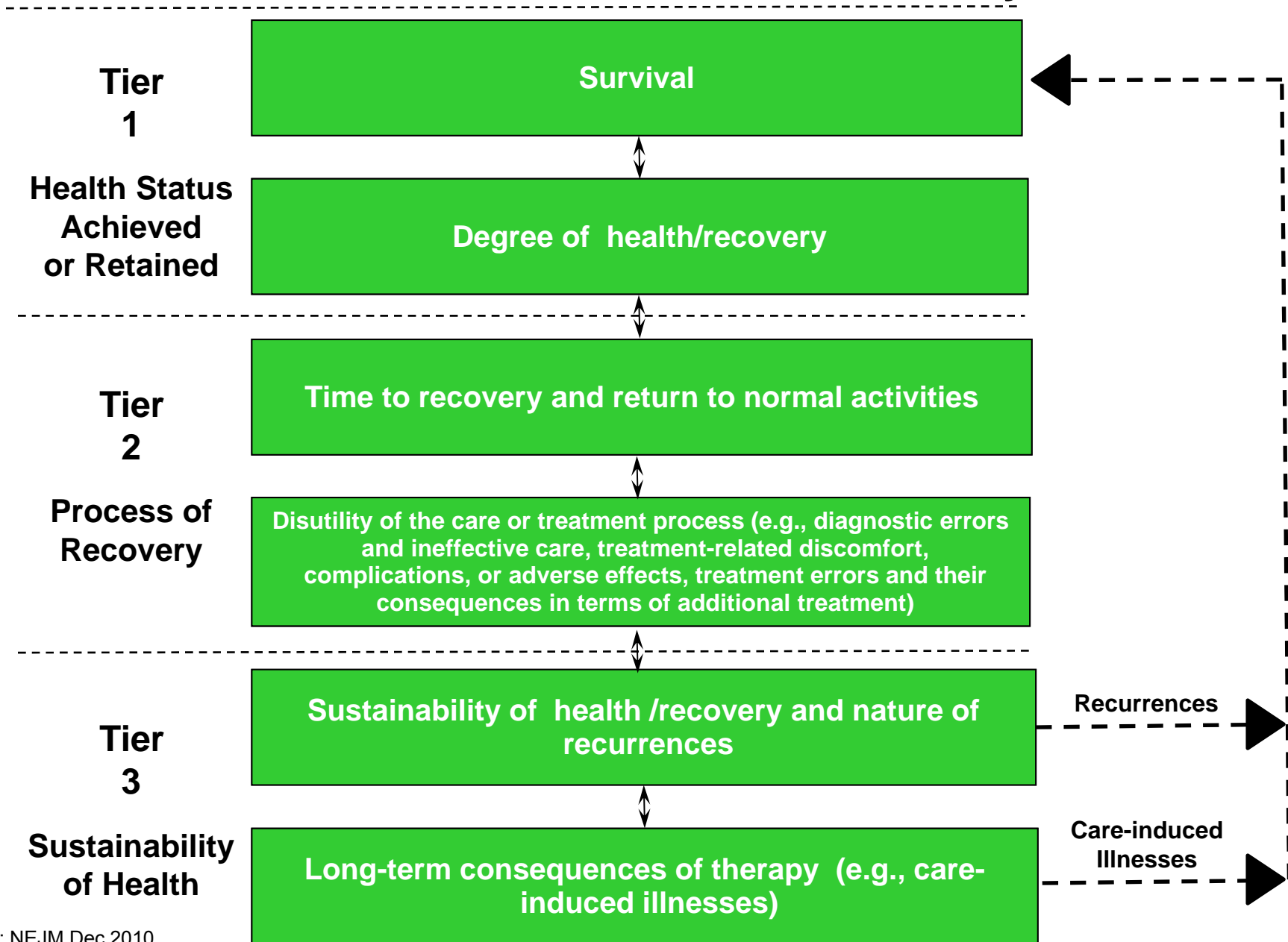
Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

2. Measuring Outcomes and Cost for Every Patient

The Measurement Landscape

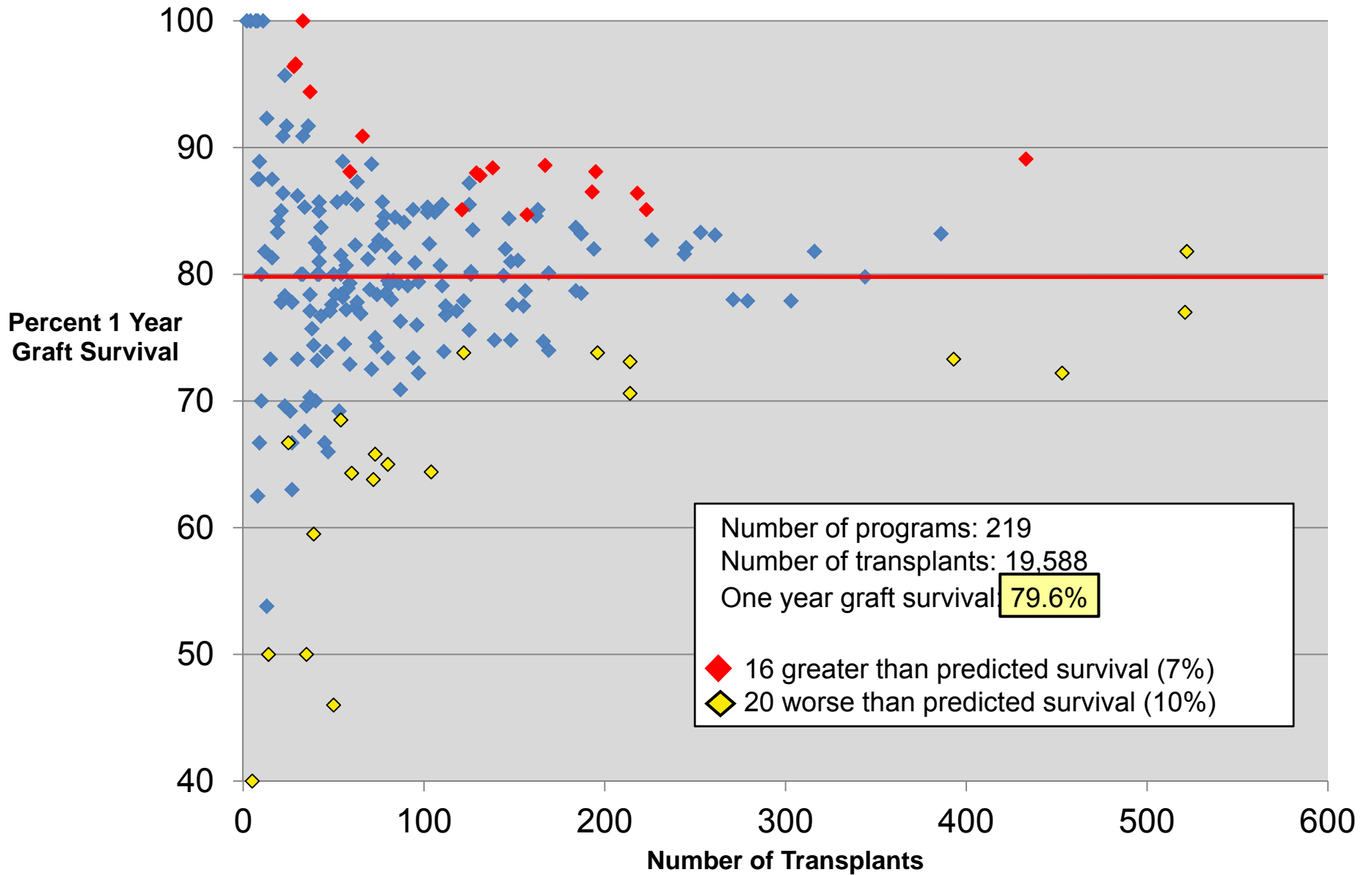


The Outcome Measures Hierarchy



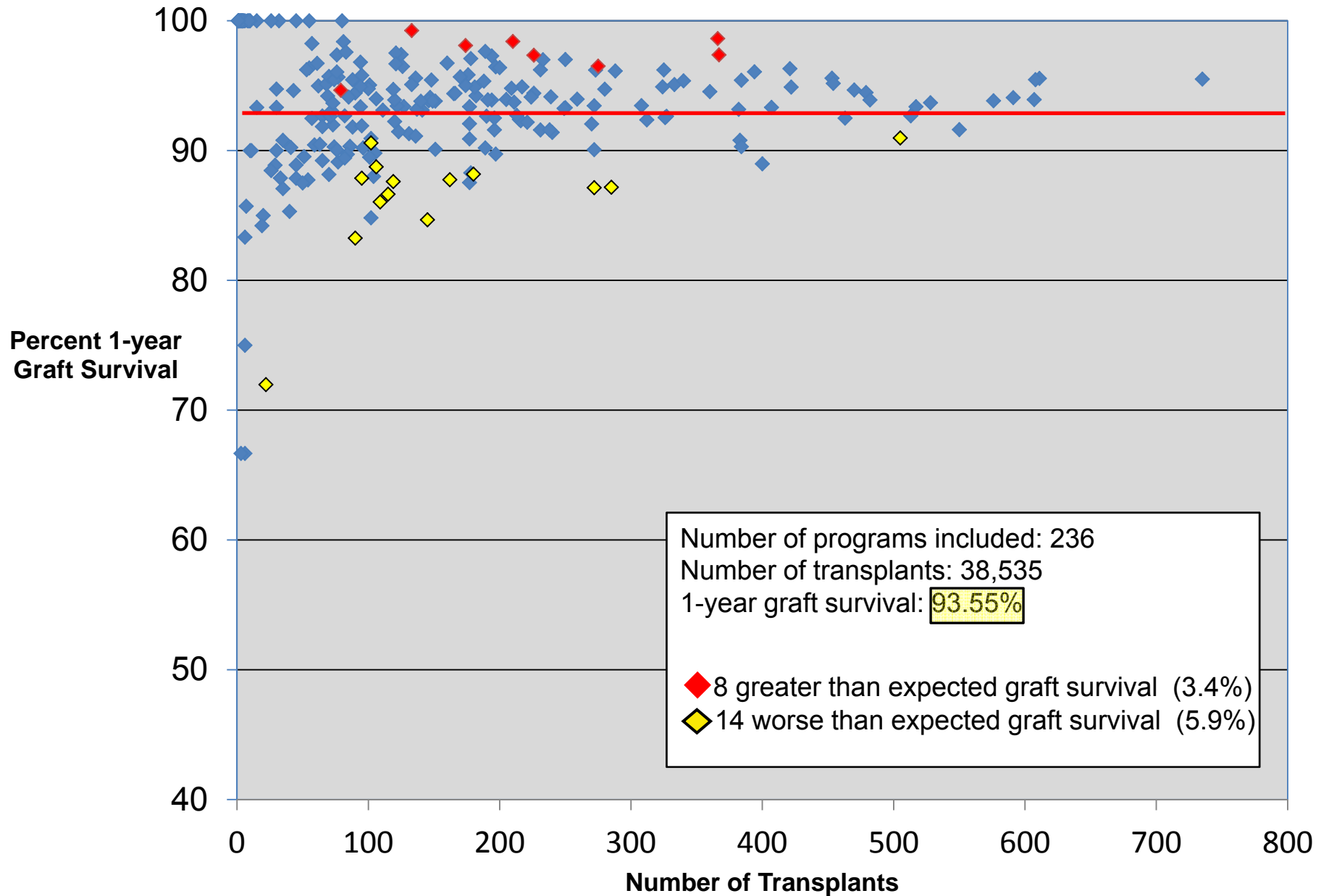
Adult Kidney Transplant Outcomes

U.S. Centers, 1987-1989



Adult Kidney Transplant Outcomes

U.S. Center Results, 2008-2010

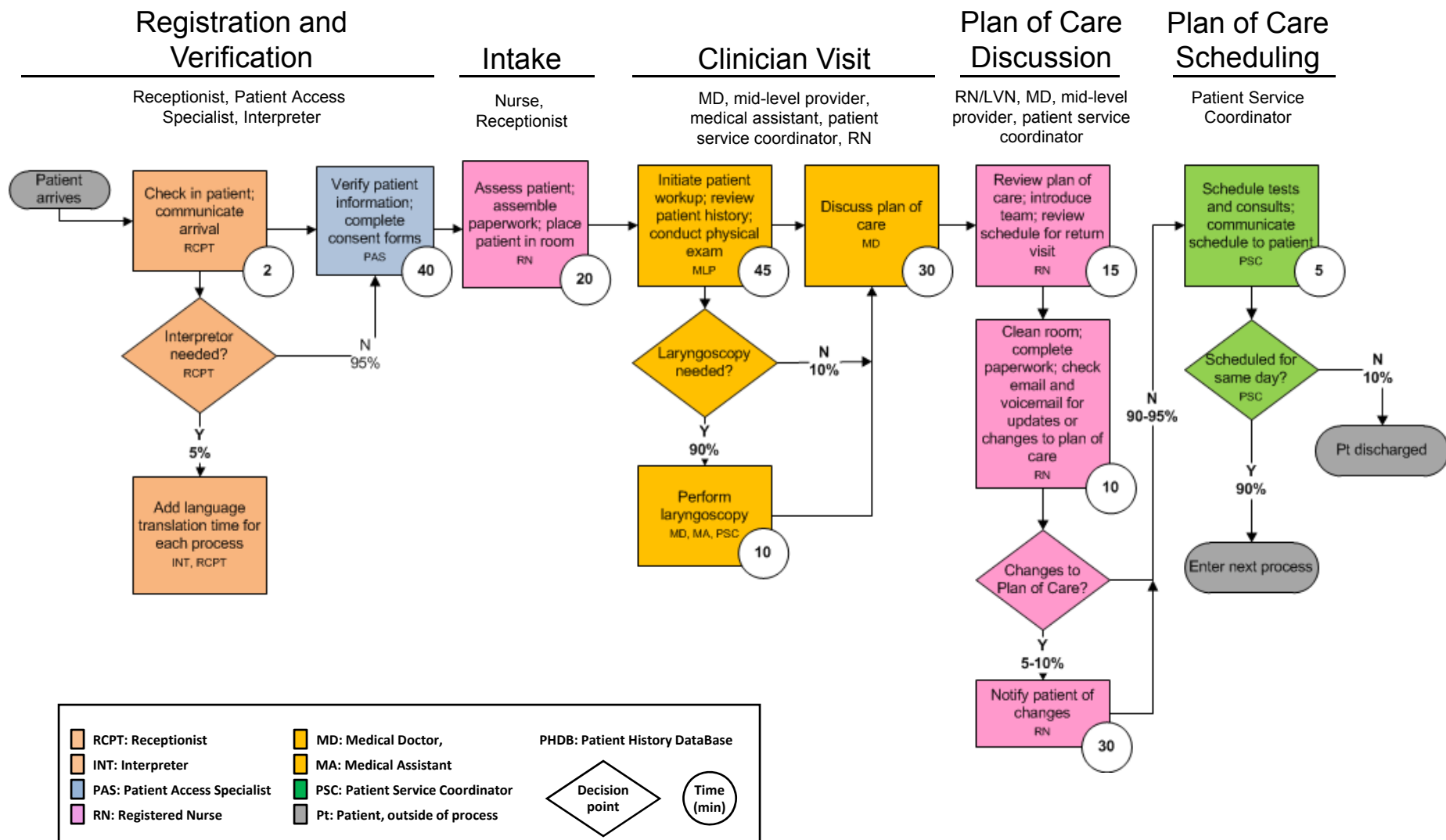


Measuring the Cost of Care Delivery: Principles


- 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 resource

Mapping Resource Utilization

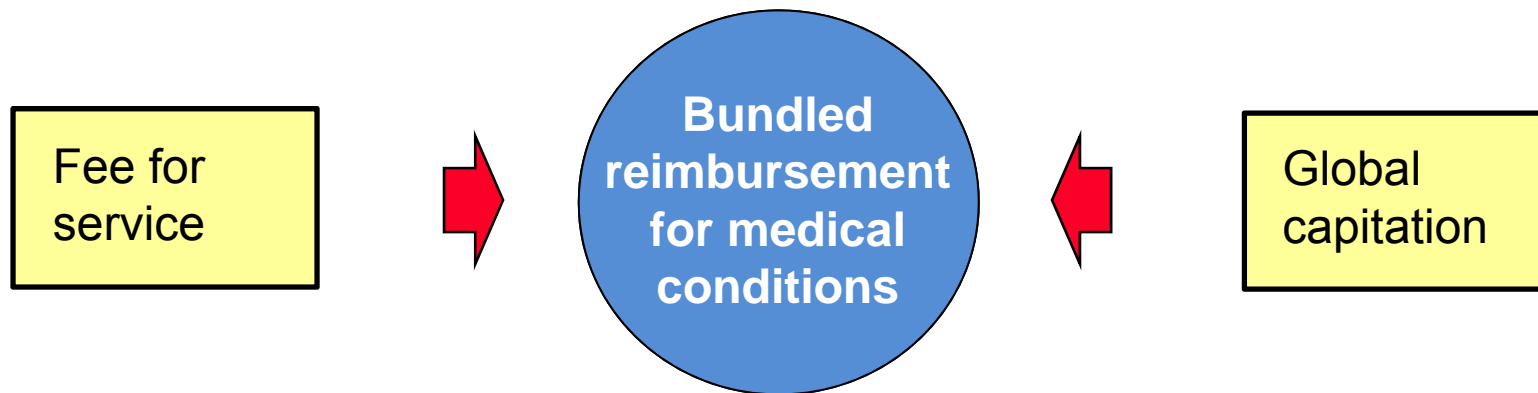
MD Anderson Cancer Center – New Patient Visit



Major 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**

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 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	

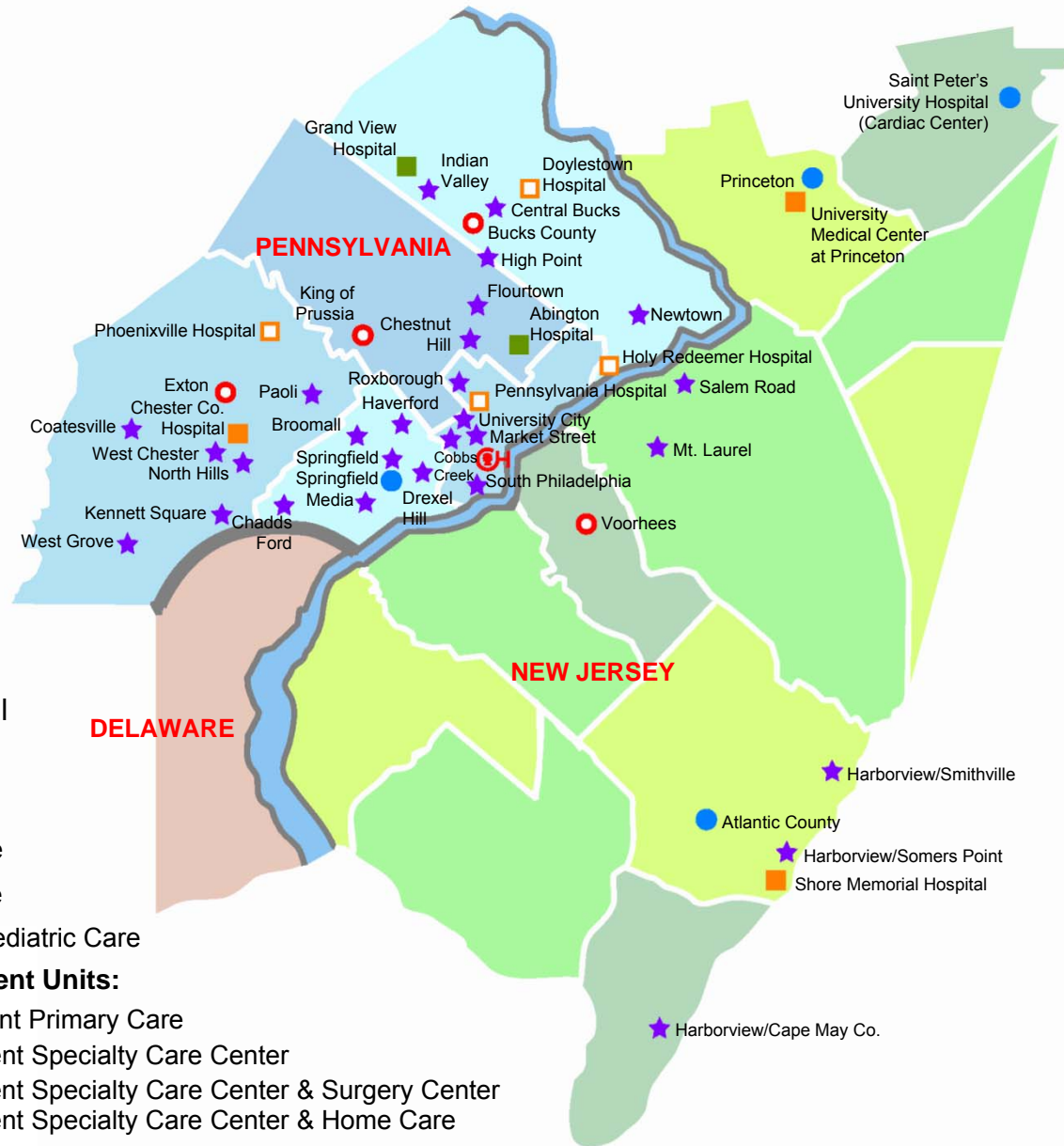
- Currently applies to all **relatively healthy patients** (i.e. ASA scores of 1 or 2)
- The same **referral process** from PCPs is utilized as the traditional system
- **Mandatory reporting** by providers to the joint registry plus supplementary reporting
- Applies to **all** qualifying patients. Provider 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

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 / IPU across facilities** to improve volume, better utilize resources, and deepen teams
3. Offer specific services at the **appropriate facility**
 - Based on medical condition, acuity level, resource intensity, cost level, need for convenience
 - E.g., shifting routine surgeries to smaller, more specialized facilities
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 Geographic Coverage by Excellent Providers

Leading Providers

- Grow **areas of excellence across geography**:
 - **Hub and spoke** expansion of satellite pre- and post-acute services
 - **Affiliations** with community providers to extend the reach of IPUs
- Increase the **volume of patients** in medical conditions or primary care segments vs. **widening** service lines locally, or adding new **broad line** units

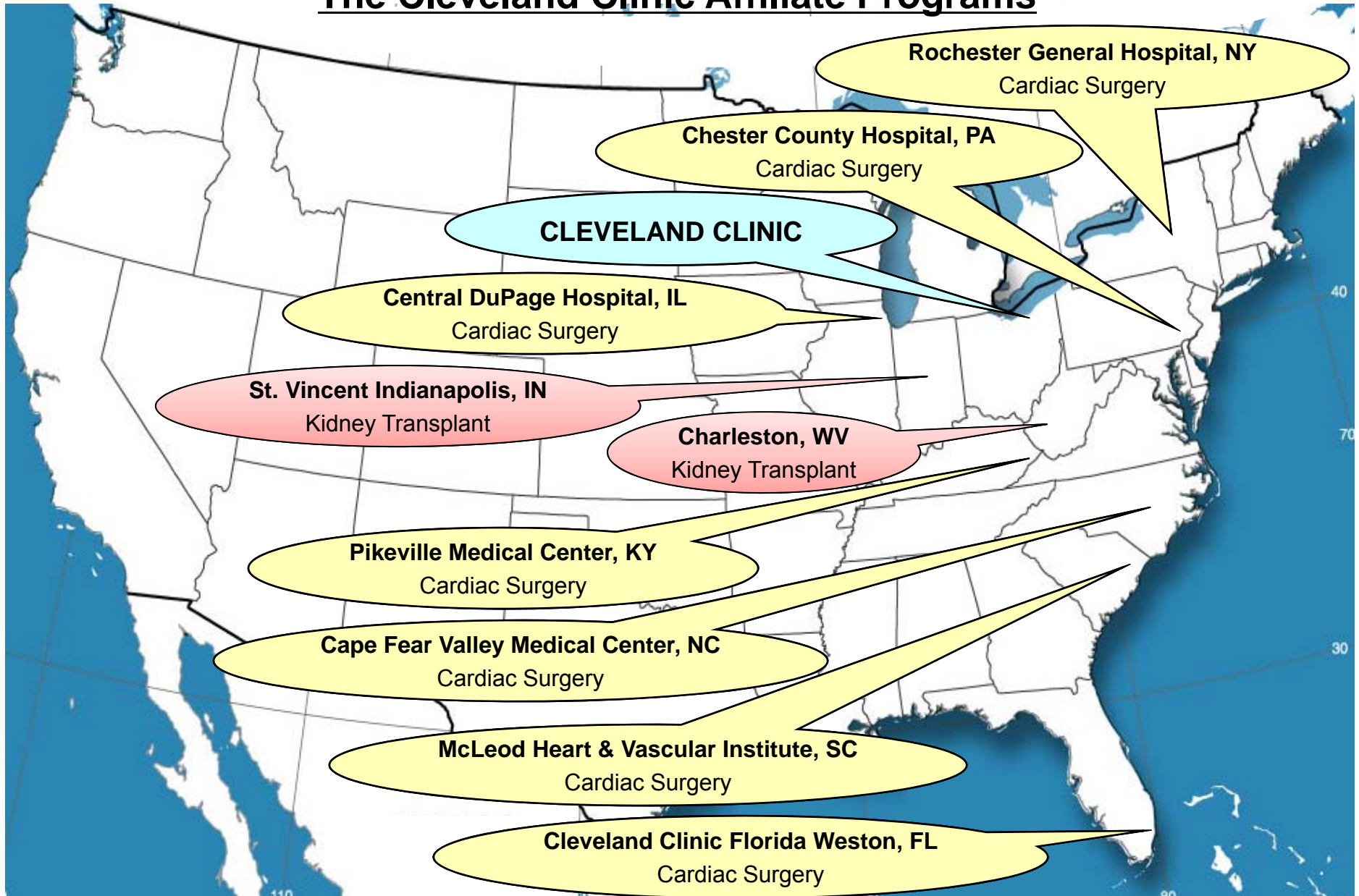


Community Providers

- **Affiliate with excellent providers** in more complex medical conditions and patient segments in order to access expertise, facilities and services to enable high value care
 - New roles for **rural** and **community** hospitals

Expanding Geographic Coverage by Excellent Providers

The Cleveland Clinic Affiliate Programs

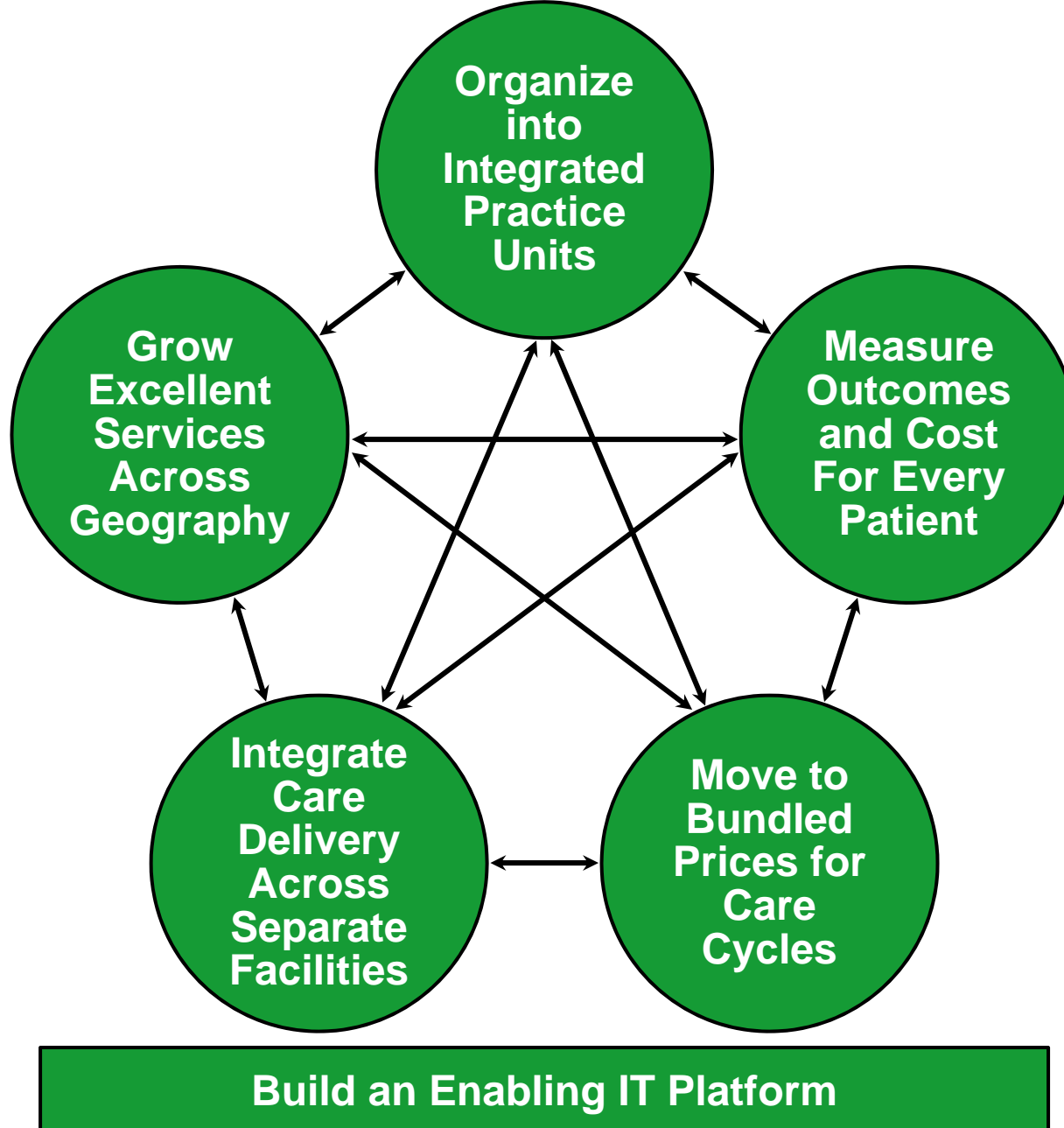


6. Building an Enabling Information Technology Platform

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



Creating a Value-Based Health Care Delivery System

Implications for Physician Leaders

1. Integrated Practice Units (IPUs)

- Lead **multidisciplinary teams**, not specialty silos

2. Measure Cost and Outcomes

- Become an expert in **measurement** and **process improvement**

3. Move to Bundled Prices

- Proactively develop new **bundled reimbursement options** and **care guarantees**

4. Integrate Across Separate Facilities

- Champion **value enhancing rationalization, relocation, and integration** with sister hospitals, as well as between inpatient and outpatient units, instead of protecting turf

5. Expand Excellence Across Geography

- Create networks and affiliations to expand high-value care **outside the local area**

6. Enabling IT Platform

- Become a **champion for the right EMR** systems, not an obstacle to their adoption and use