

Value-Based Health Care Delivery

Professor Michael E. Porter
Harvard Business School

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This presentation draws on Michael E. Porter and Elizabeth Olmsted Teisberg: Redefining Health Care: Creating Value-Based Competition on Results, Harvard Business School Press, May 2006, and “How Physicians Can Change the Future of Health Care,” *Journal of the American Medical Association*, 2007; 297:1103:1111. 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 Olmsted Teisberg. Further information about these ideas, as well as case studies, can be found on the website of the Institute for Strategy & Competitiveness at <http://www.isc.hbs.edu>.

Creating a Value-Based Health Care System

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

Value: Patient health outcomes per dollar spent



- 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, and pricing models

- Process improvements, lean production concepts, safety initiatives, care pathways, disease management and other **overlays** to the current structure are beneficial but not sufficient

Zero-Sum Competition in U.S. Health Care

Bad Competition

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



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 volume, convenience, cost containment, or access per se

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

- 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**, not just the cost of a single provider or a single service



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**

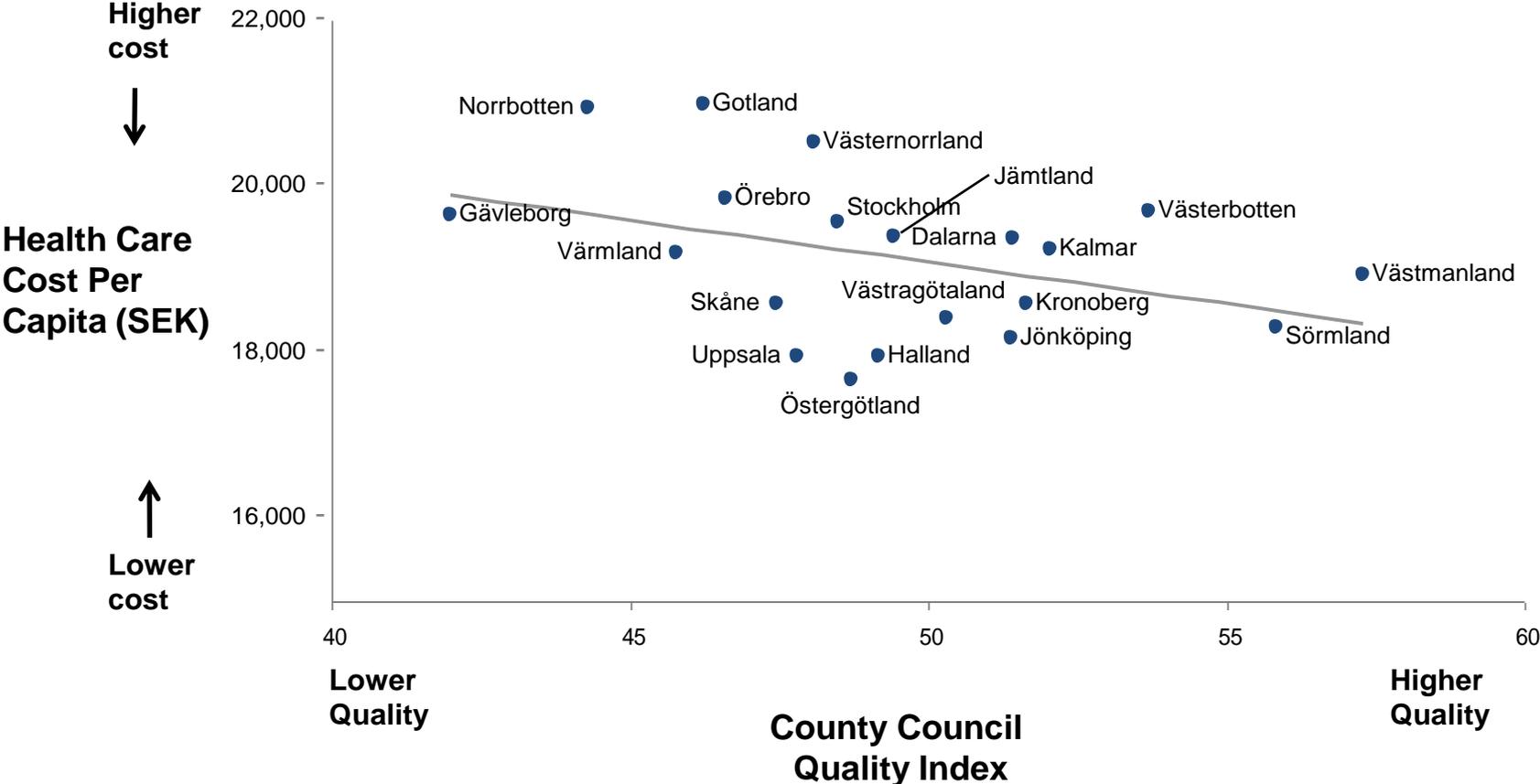
- Prevention
- Early detection
- Right diagnosis
- Right treatment to the right patient
- Early and timely treatment
- Treatment earlier in the causal chain of disease
- Rapid cycle time of diagnosis and treatment
- Less invasive treatment methods
- Fewer complications
- Fewer mistakes and repeats in 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: Öppna 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. Grow by Expanding Excellent IPUs Across Geography
6. Create an Enabling Information Technology Platform

1. Organize Into Integrated Practice Units

Care delivery should be organized around the patient's **medical condition** over the **full cycle of care**

- A medical condition is **an interrelated set of patient medical circumstances best addressed in an integrated way**
 - Defined from the **patient's** perspective
 - **Including** the most common co-occurring conditions and complications
 - Involving **multiple** specialties and services



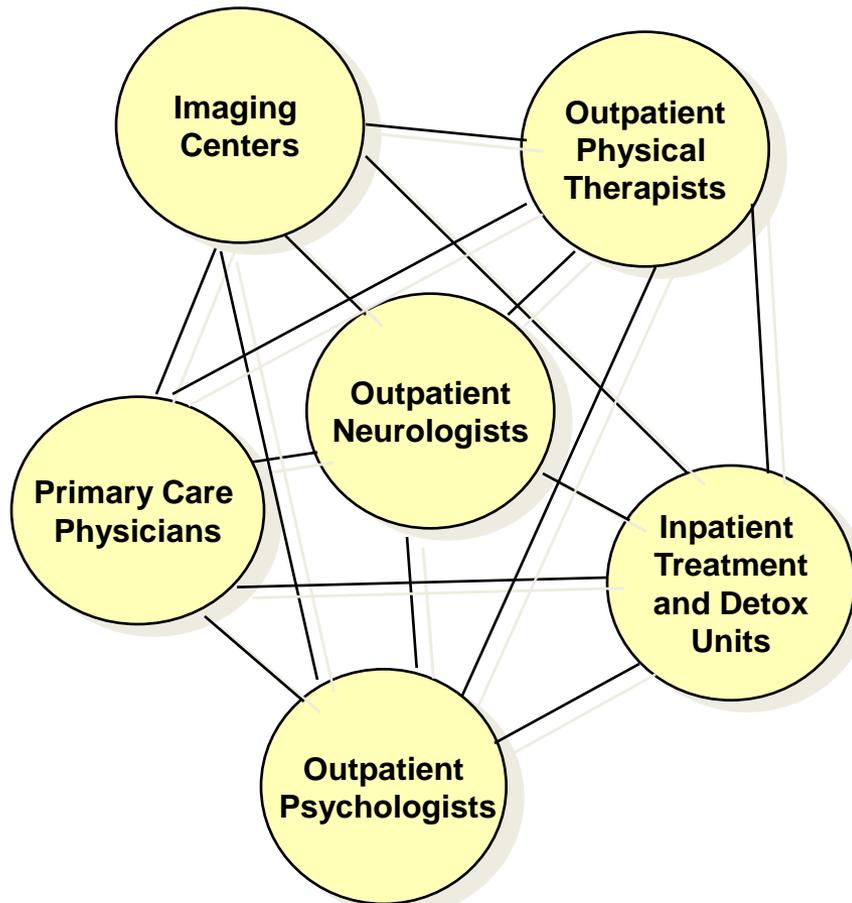
- The patient's medical condition is the **unit of value creation** in health care delivery

Organize into Integrated Practice Units

Migraine Care in Germany

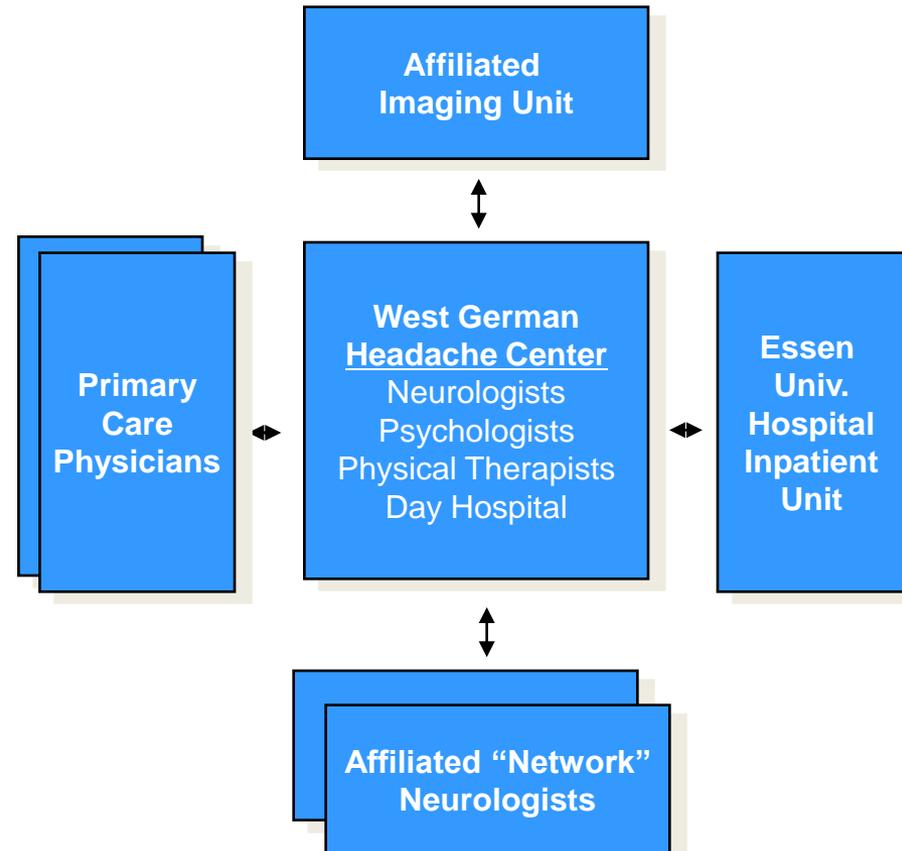
Existing Model:

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

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 	<ul style="list-style-type: none"> Counseling on the treatment process Education on managing side effects and avoiding complications of treatment 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
			<ul style="list-style-type: none"> Patient and family psychological counseling 			
MEASURING	<ul style="list-style-type: none"> Self exams Mammograms 	<ul style="list-style-type: none"> Mammograms Ultrasound MRI Labs (CBC, Blood chems, 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	<ul style="list-style-type: none"> Office visits Mammography lab visits 	<ul style="list-style-type: none"> Office visits 	<ul style="list-style-type: none"> Office visits 	<ul style="list-style-type: none"> Hospital stays 	<ul style="list-style-type: none"> Office visits 	<ul style="list-style-type: none"> Office visits
		<ul style="list-style-type: none"> Lab visits 	<ul style="list-style-type: none"> Hospital visits Lab visits 	<ul style="list-style-type: none"> Visits to outpatient radiation or chemotherapy units Pharmacy 	<ul style="list-style-type: none"> Rehabilitation facility visits Pharmacy 	<ul style="list-style-type: none"> Lab visits Mammographic labs and imaging center visits
		<ul style="list-style-type: none"> High risk clinic 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 onco-plastic 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 	

Breast Cancer Specialist
 Other Provider Entities

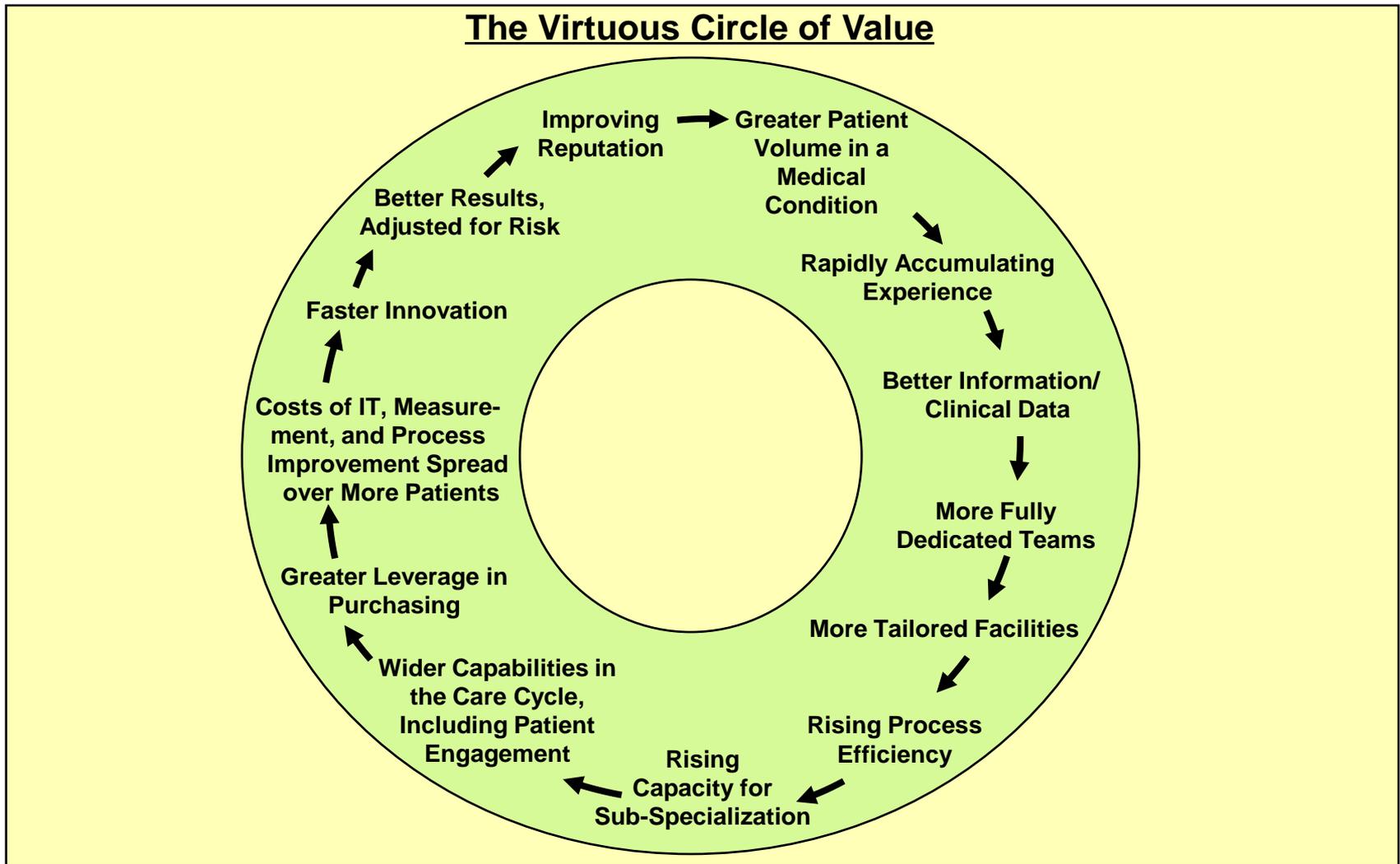
Integrated Models of Primary Care

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



- Redefine primary care as prevention, screening, diagnosis, wellness and health maintenance **service bundles**
- Design primary care services around **specific patient populations** (e.g. healthy adults, frail elderly, type II diabetics) rather than attempt to be all things to all patients
- Provide primary care service bundles using **multidisciplinary teams, ancillary health professionals, support staff, and dedicated facilities**
- Deliver primary care at the **workplace, community organizations, and other settings** that offer regular patient contact and the ability to develop a group culture of wellness
- Create **formal partnerships** between primary care organizations and specialty IPUs

Volume and Experience in a Medical Condition Drive Patient Value



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

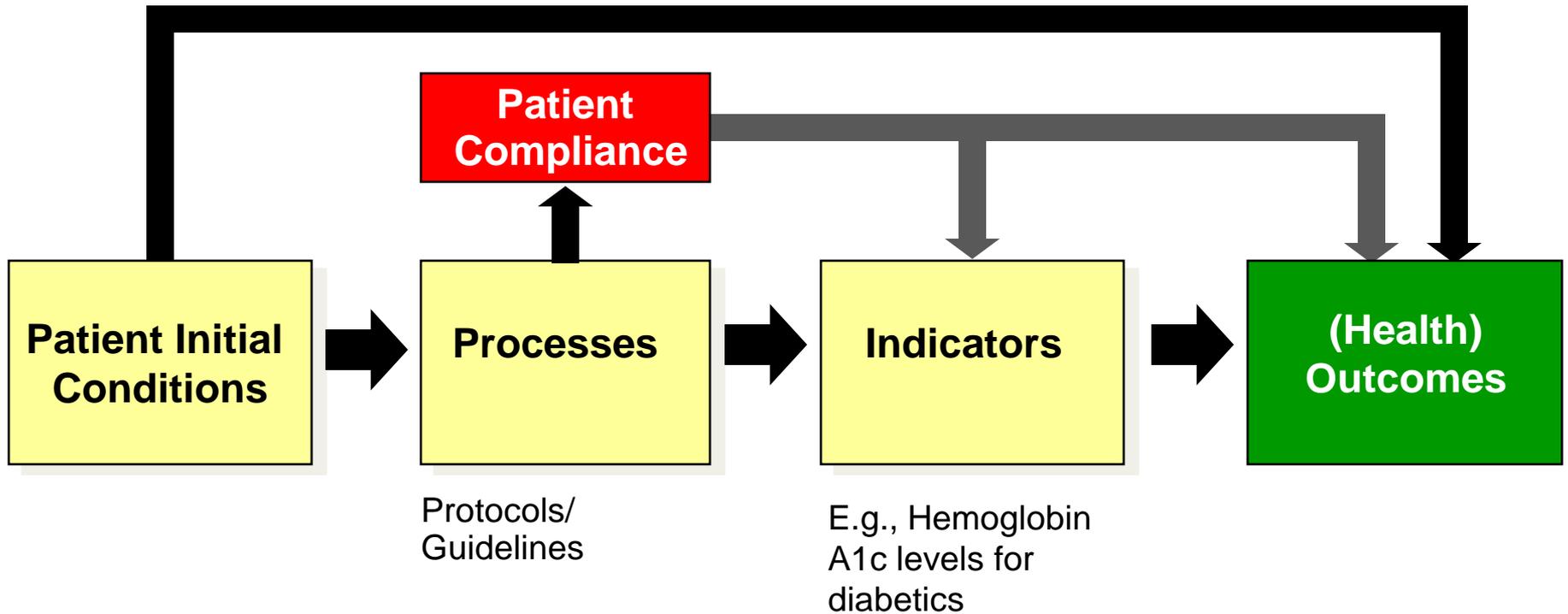
Fragmentation of Hospital Services

Sweden

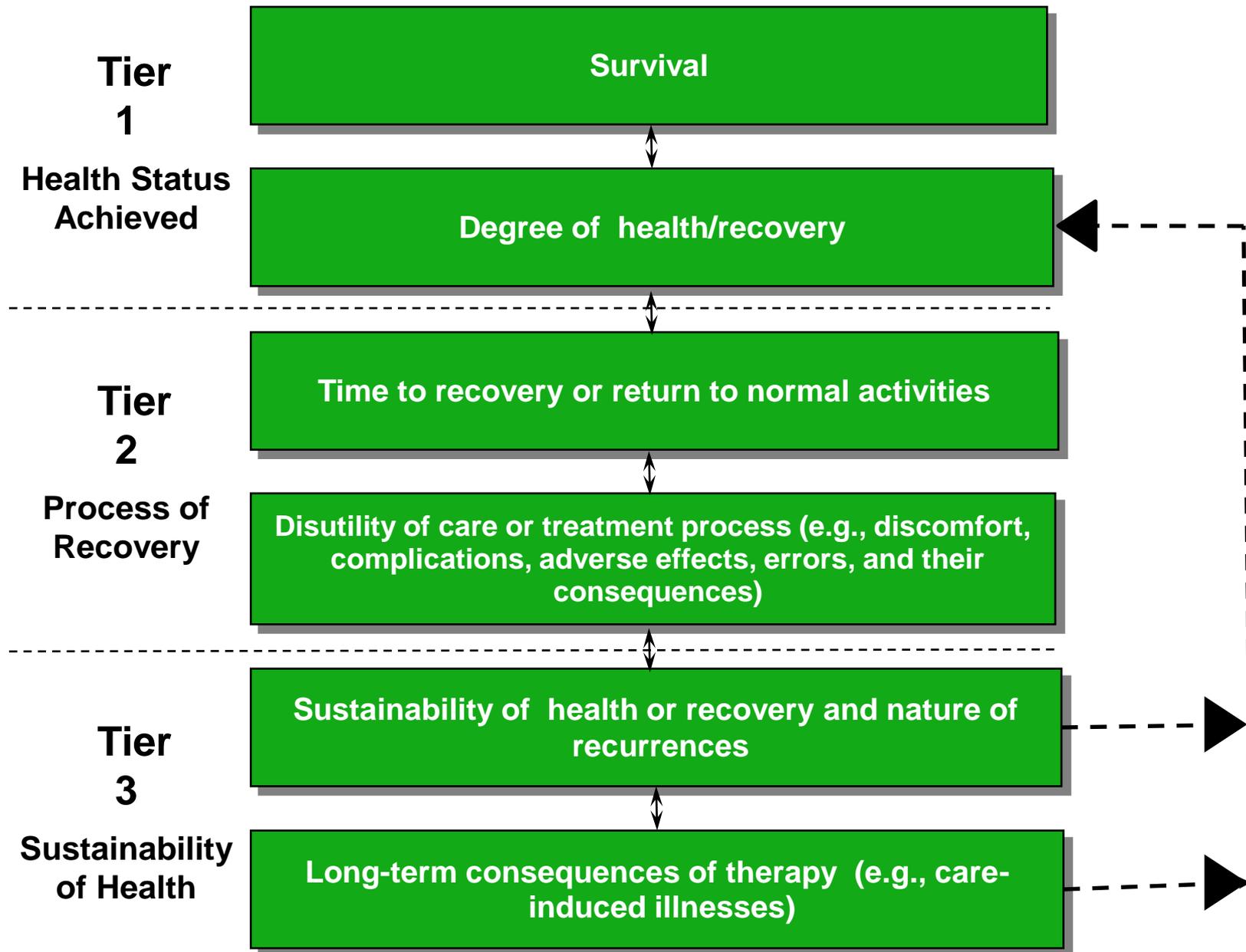
DRG	Number of admitting providers	Average percent of total national admissions	Average admissions/ provider/ year	Average admissions/ provider/ week
Knee Procedure	68	1.5%	55	1
Diabetes age > 35	80	1.3%	96	2
Kidney failure	80	1.3%	97	2
Multiple sclerosis and cerebellar ataxia	78	1.3%	28	1
Inflammatory 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.

2. Measuring Outcomes and Cost for Every Patient



The Outcome Measures Hierarchy



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)

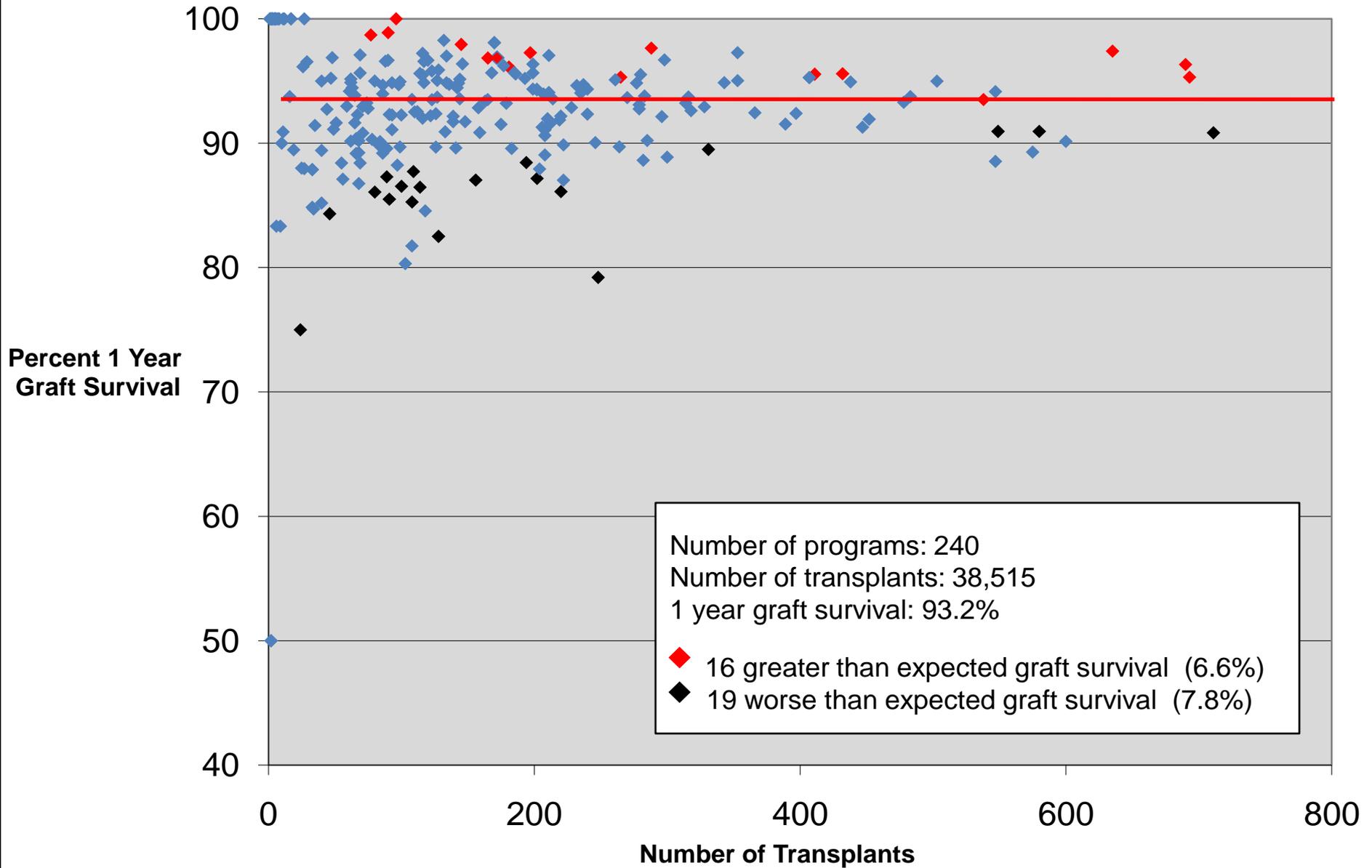
- Incidence of secondary cancers
- Brachial plexopathy
- Fertility/pregnancy complications
- Premature osteoporosis

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, 2005-2007



Cost Measurement

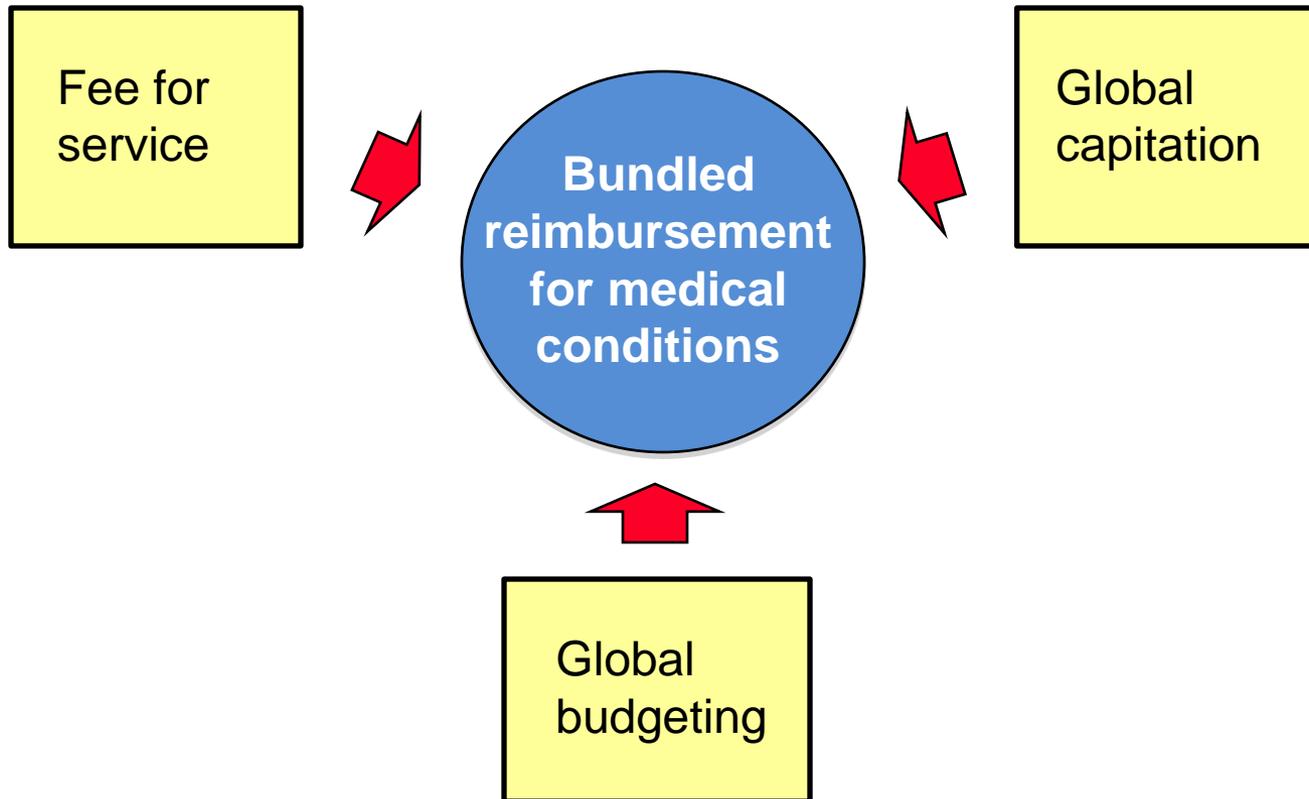
Aspiration

- Cost should be measured at the **medical condition level** (which includes common co-occurring conditions), not across services or entire facilities
- Cost should be aggregated **for each patient** 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, staff, facilities, service), not average allocations or allocations based on charges
- 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** over the care cycle for particular patients
- Most providers use **arbitrary or average** allocations of costs, 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



What is a Bundled Payment?

- **Total package price** for the care cycle for a medical condition
 - Includes 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



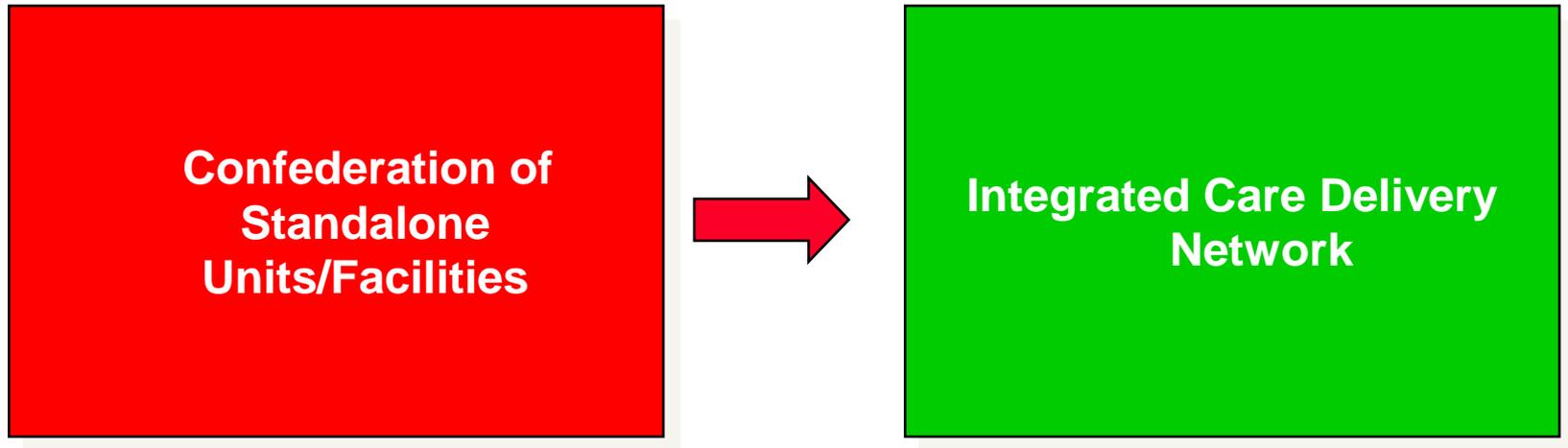
- DRGs can be a **starting point** for bundled payment models

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

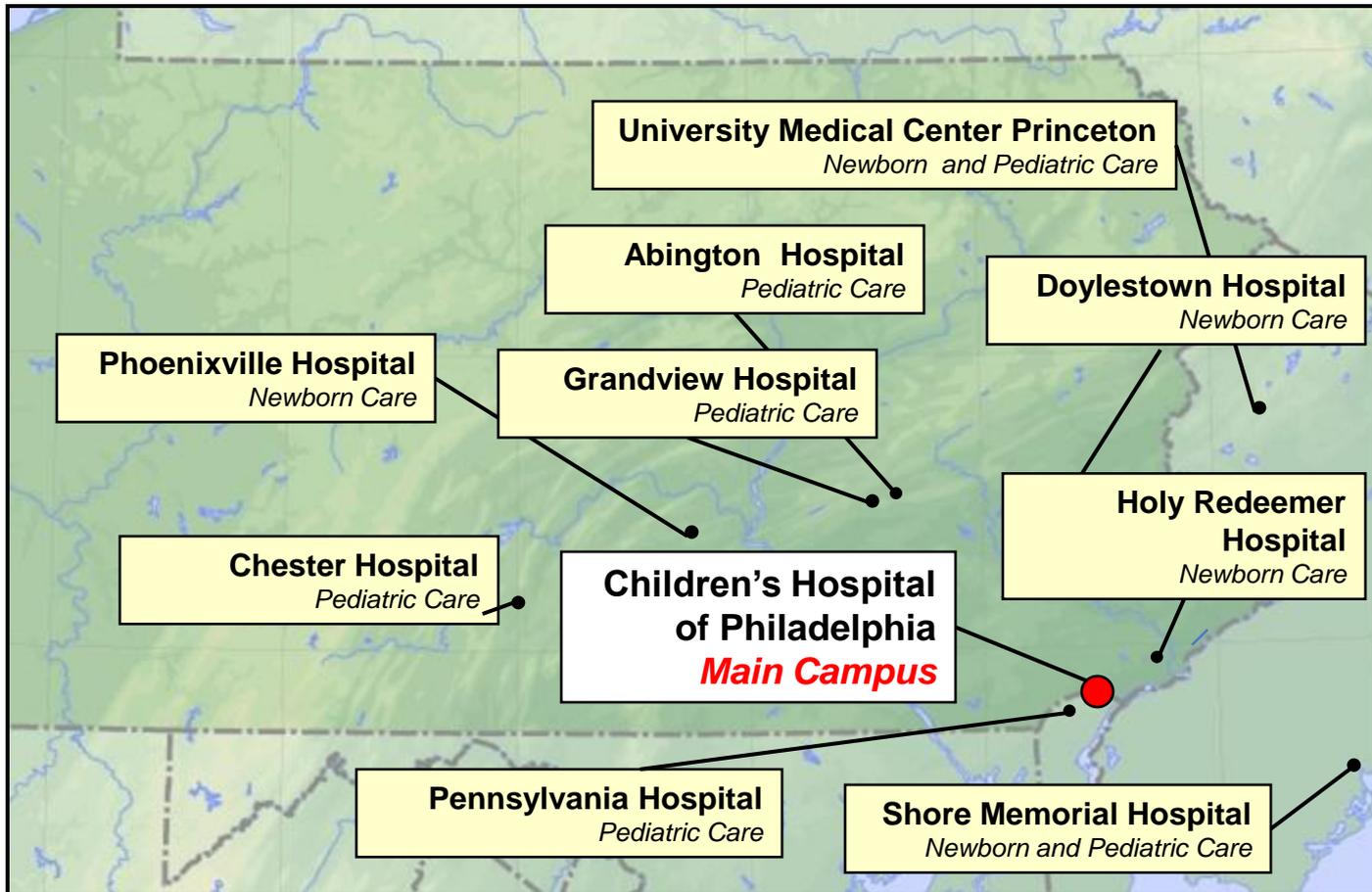
4. Integrate Care Delivery Across Separate Facilities



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

- Increase **value**
↓
- The network is **more than** the sum of its parts

Children's Hospital of Philadelphia (CHOP) Hospital Affiliates

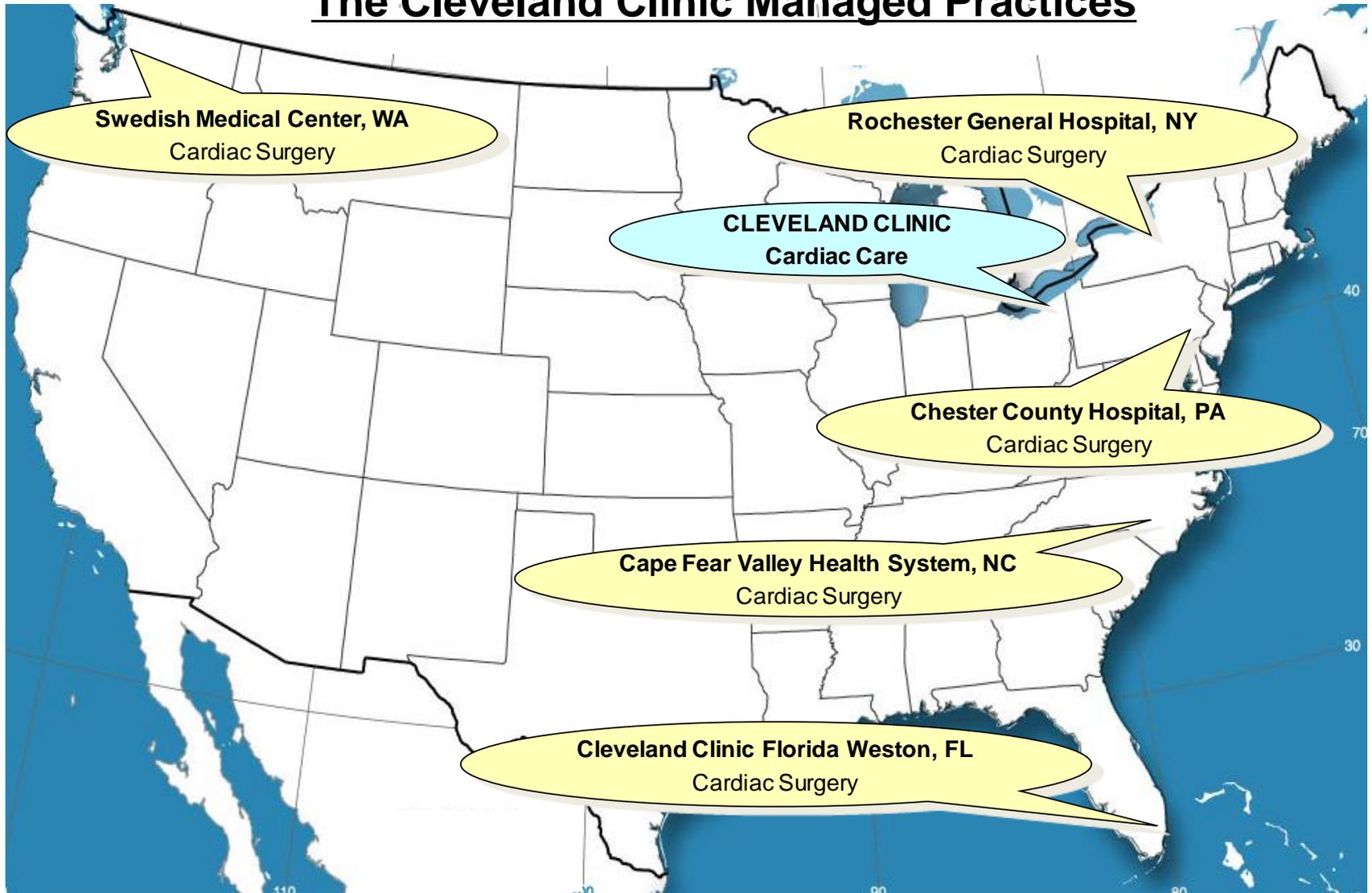


Levels of System Integration

- **Rationalize service lines/ IPU**s 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
 - **Consistent protocols** and access to experts throughout the network (IT enabled)
 - Connect **ancillary service units** to IPUs
 - E.g. home care, rehabilitation, behavioral health, social work, addiction treatment (organize within service units to align with IPUs)
 - Better connect **preventive/primary care** units to specialty IPUs

5. Grow by Expanding Excellent IPU's Across Geography

The Cleveland Clinic Managed Practices



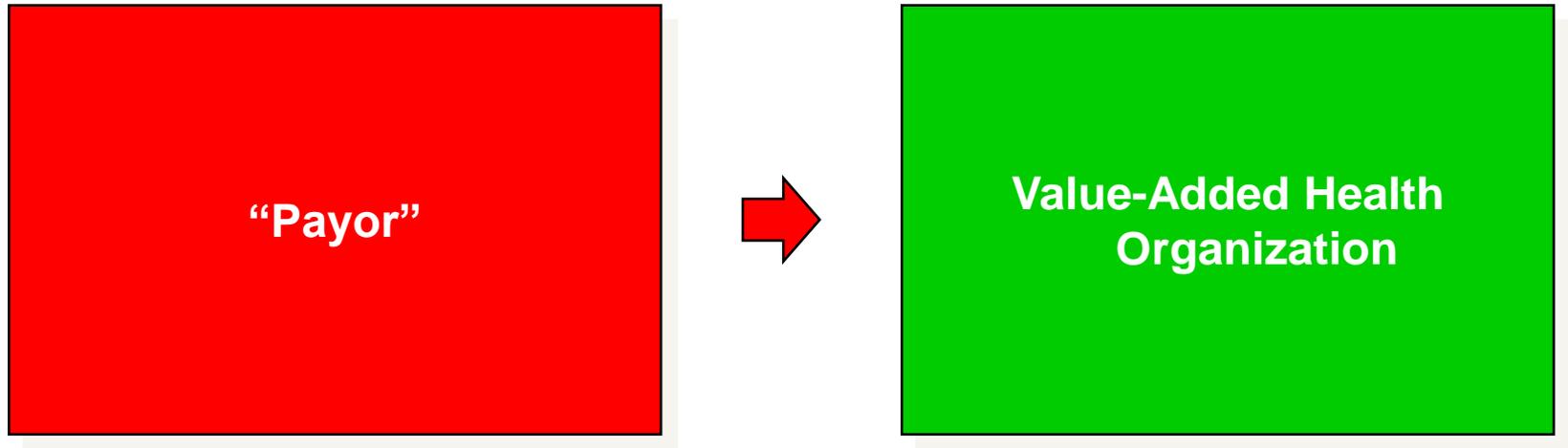
- Grow in ways that improve **value**, not just volume

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 Healthcare Delivery: Implications for Contracting Parties/Health Plans



Value-Adding Roles of Health Plans

- Measure and report **overall health results** for members by medical condition versus other plans
 - Assemble, analyze and manage the **total medical records** of members
 - Provide for comprehensive and integrated **prevention, wellness, screening, and disease management** services to all members
 - Monitor and compare **provider results** by medical condition
 - Provide advice to patients (and referring physicians) in selecting **excellent providers**
 - Assist in coordinating patient care across the **care cycle** and **across medical conditions**
 - Encourage and reward **integrated practice unit** models by providers
 - Design new **bundled reimbursement structures** for care cycles instead of fees for discrete services
- 
- Health plans will require **new capabilities** and **new types of staff** to play these roles

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
 - Absenteeism
 - 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 should establish **direct relationships with employers** to enable value based approaches

Value-Based Health Care Delivery: Implications for Government

- Remove obstacles to the **restructuring of health care delivery** around the integrated care of medical conditions
- Establish **universal measurement** and **reporting** of provider **health outcomes**
- Require universal reporting by health plans of **health outcomes for members**
- 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
- Encourage greater **responsibility of individuals** for their health and their health care