Value-Based Health Care Delivery

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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 Porter, Michael E. "A Strategy for Health Care Reform." *New England Journal of Medicine*. June 3, 2009. Porter, Michael E. "Defining and Introducing value in Health Care." Evidence-Based Medicine and the Changing Nature of Healthcare: Meeting Summary (IOM Roundtable on Evidence-Based http://www.nap.edu/catalog/12041.html. 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.

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

> 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
  - Consumers **cannot fix the dysfunctional structure** of the current system

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

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

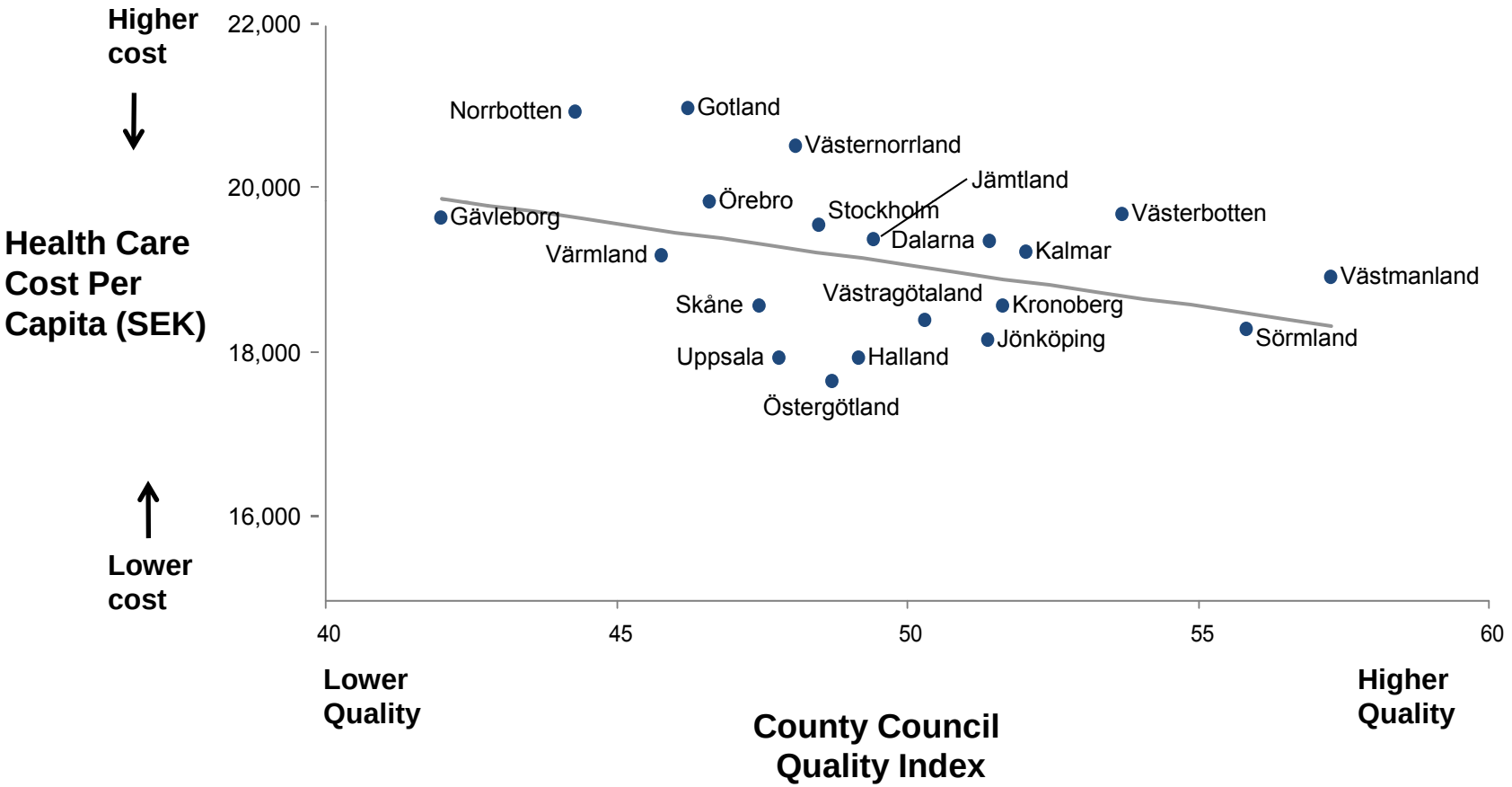
Principles of Value-Based Health Care Delivery

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: Öpnna jämförelser, Socialstyrelsen 2008;Sjukvårdsdata i fokus 2008; BCG analysis

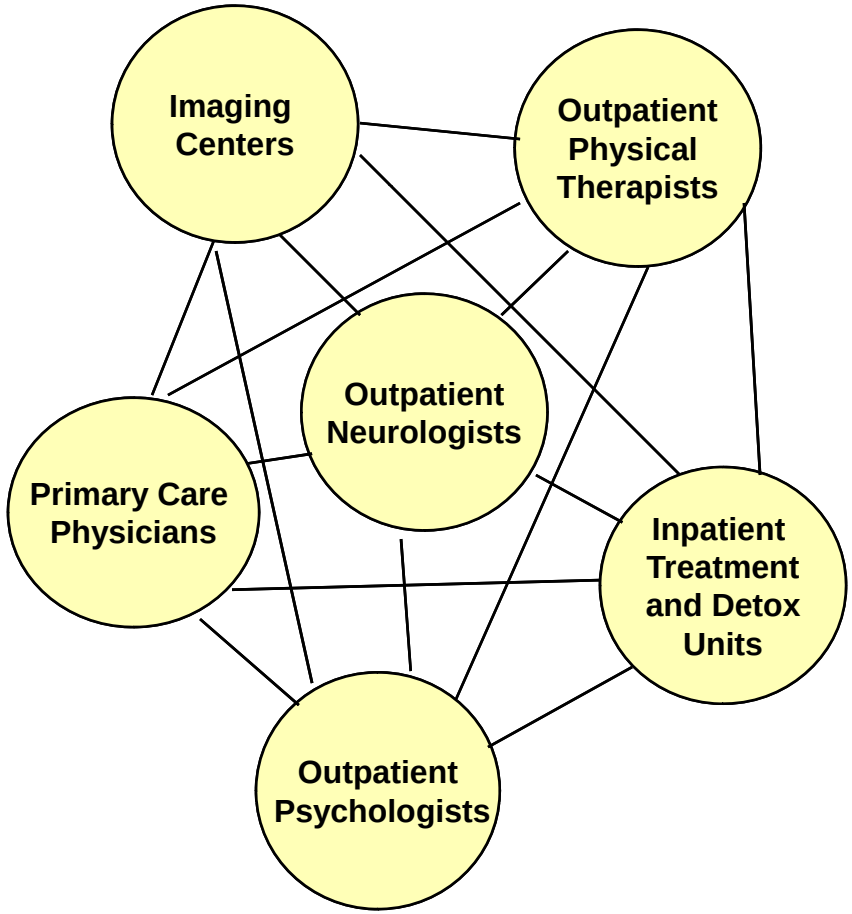
Value-Based Health Care Delivery
The Strategic Agenda

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**

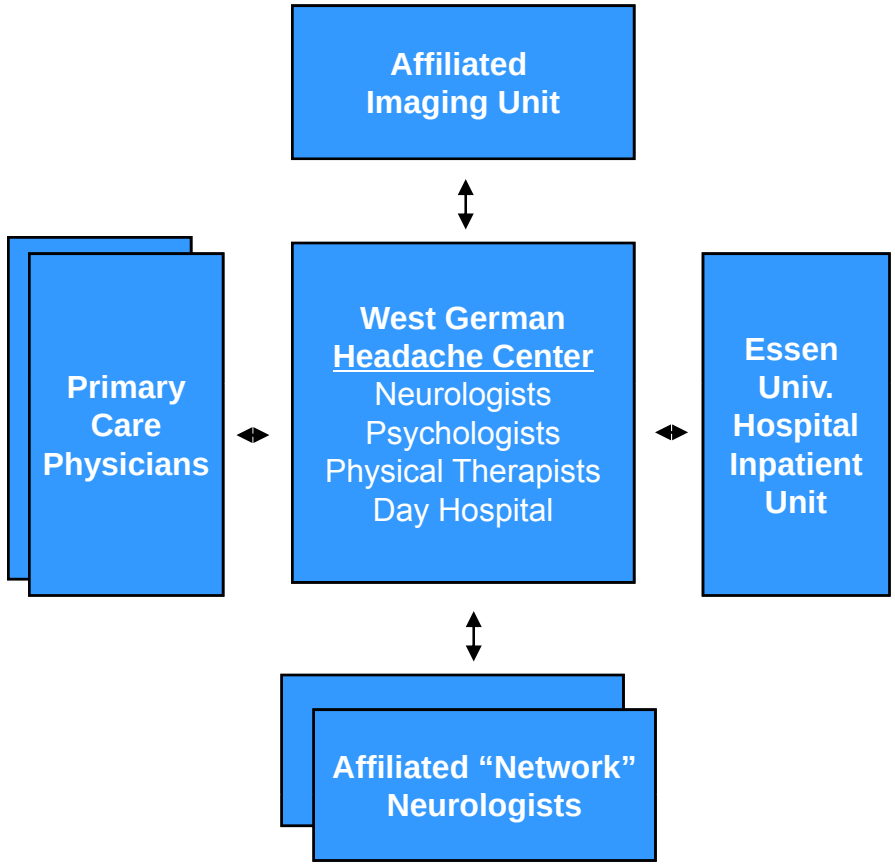
1. Organize into Integrated Practice Units

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

Organizing Around the Patient

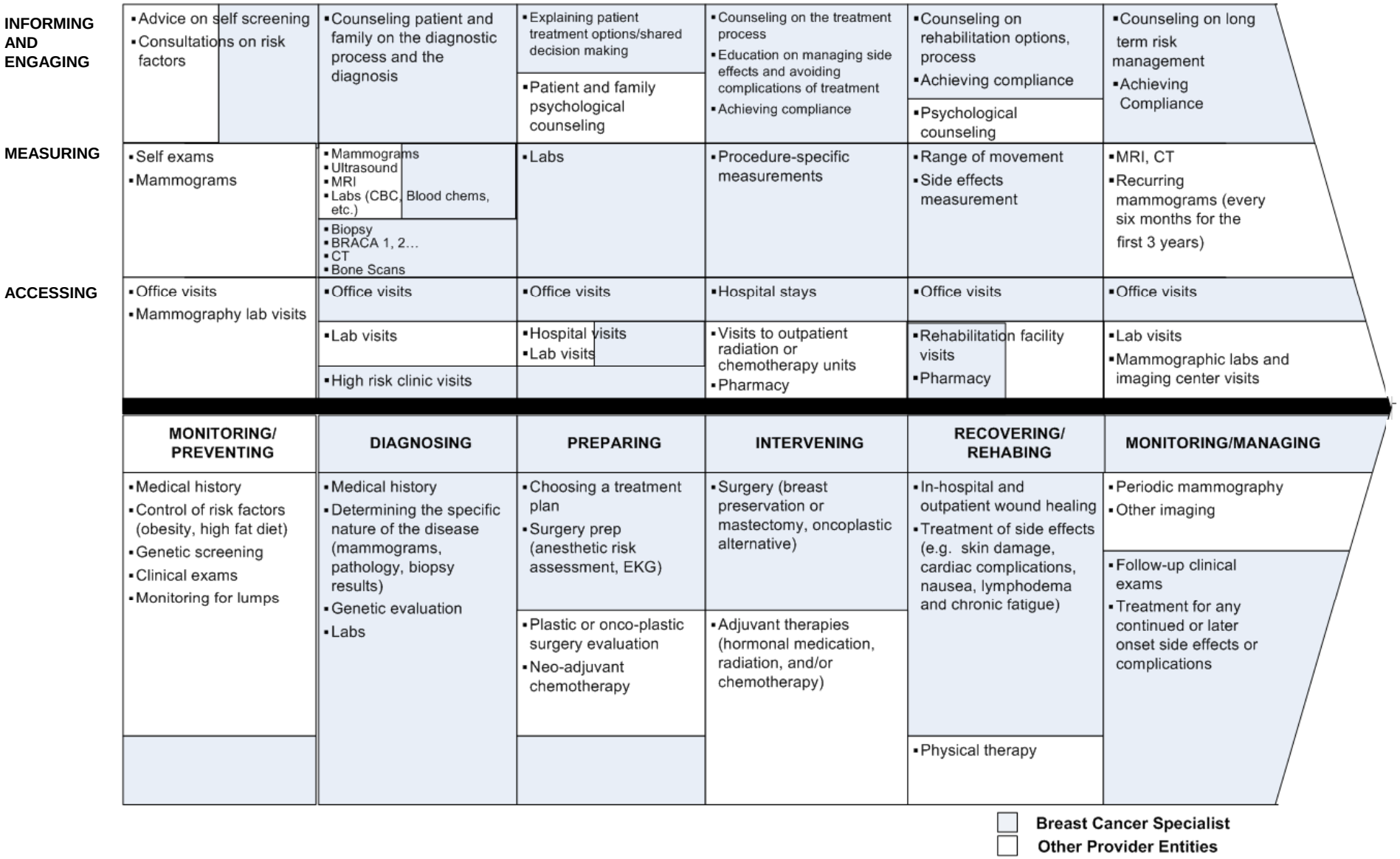
- A medical condition is **an interrelated set of patient medical circumstances best addressed in an integrated way**
  - Defined from the **patient's** perspective
  - **Including** the most common co-occurring conditions and complications
  - Involving **multiple** specialties and services

- IPUs can address a single medical condition or **groups of closely related medical conditions** involving similar specialties, services, and expertise

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

Integrating Across the Cycle of Care

Breast Cancer



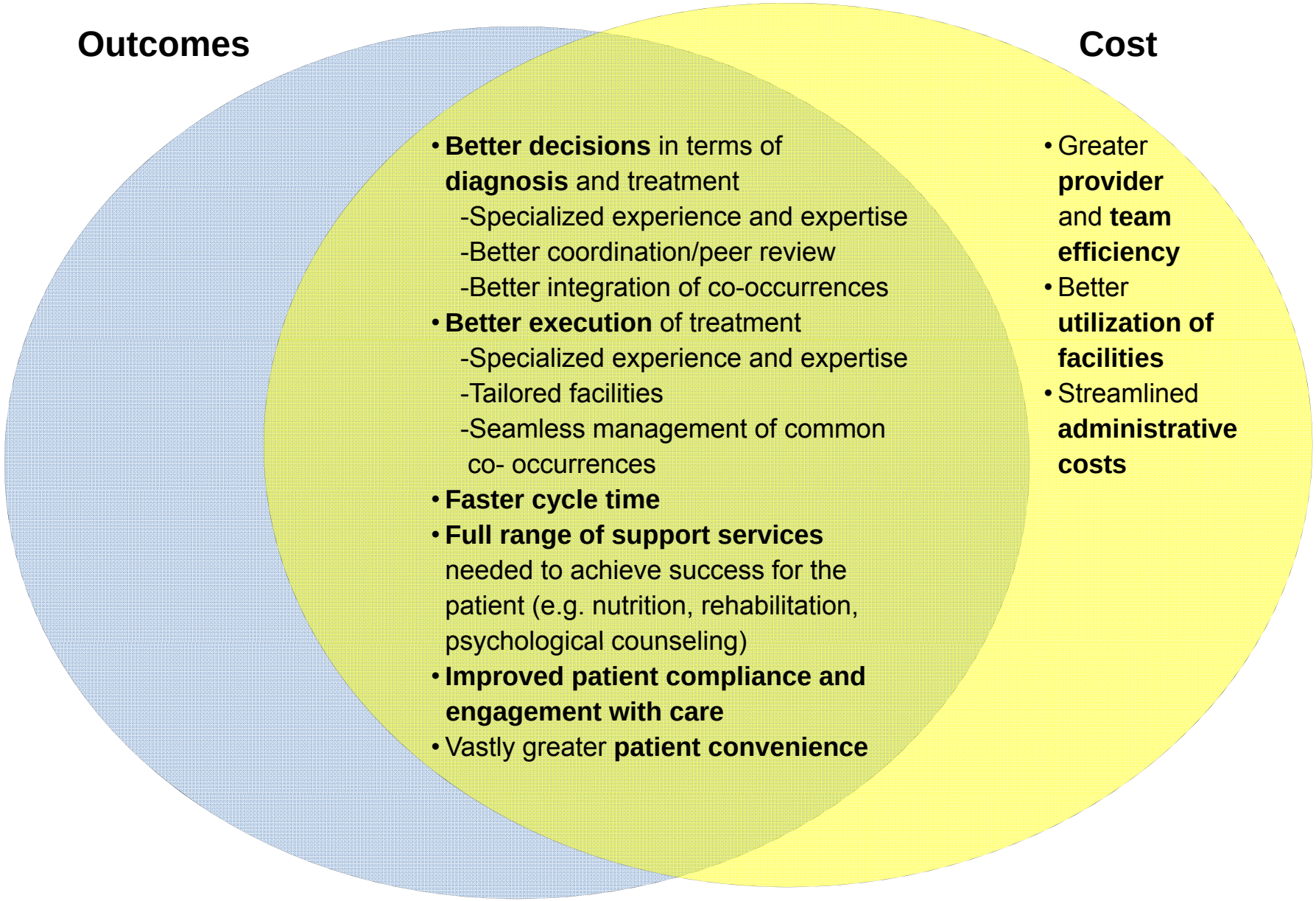
Integrated Models of Primary Care

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

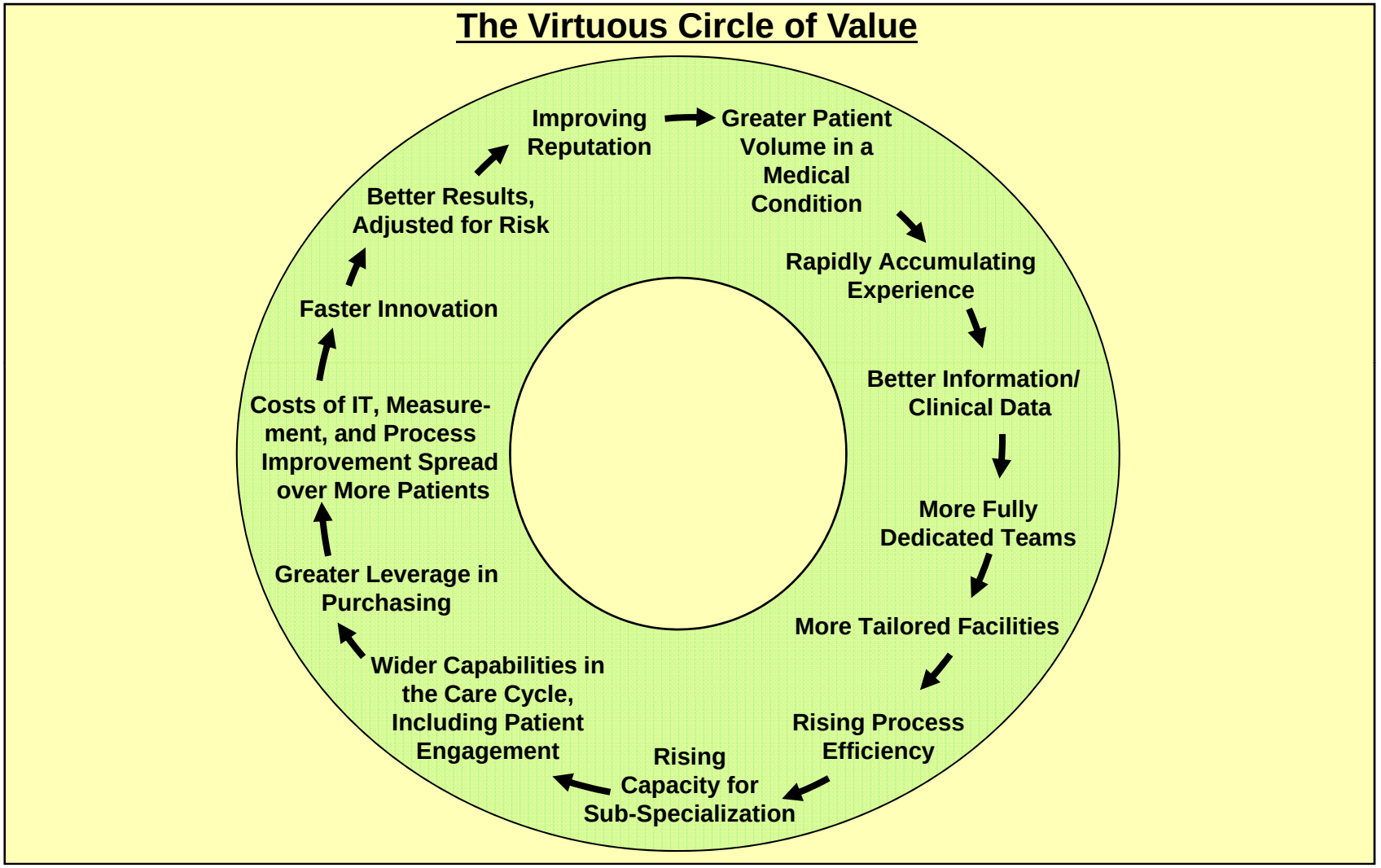
Value-Based Primary Care

- Prevention, screening, diagnosis, wellness and health maintenance **service bundles**
- 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
- With **formal alliances** with specialty IPUs for the prevalent medical conditions represented in the patient base

IPUs and Value



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

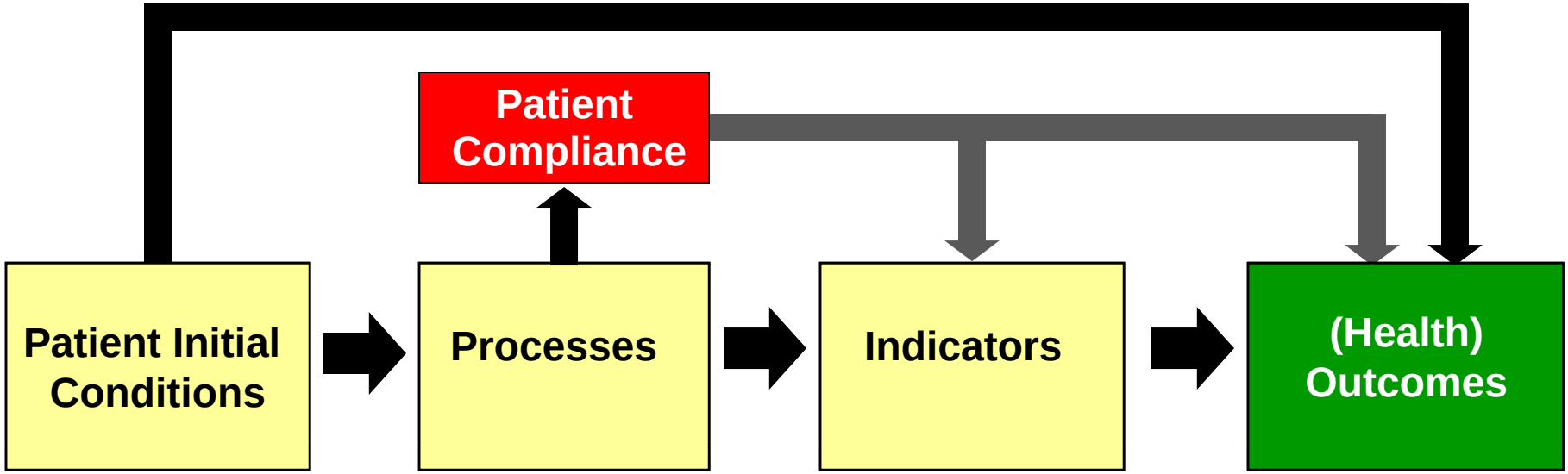
Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

2. 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

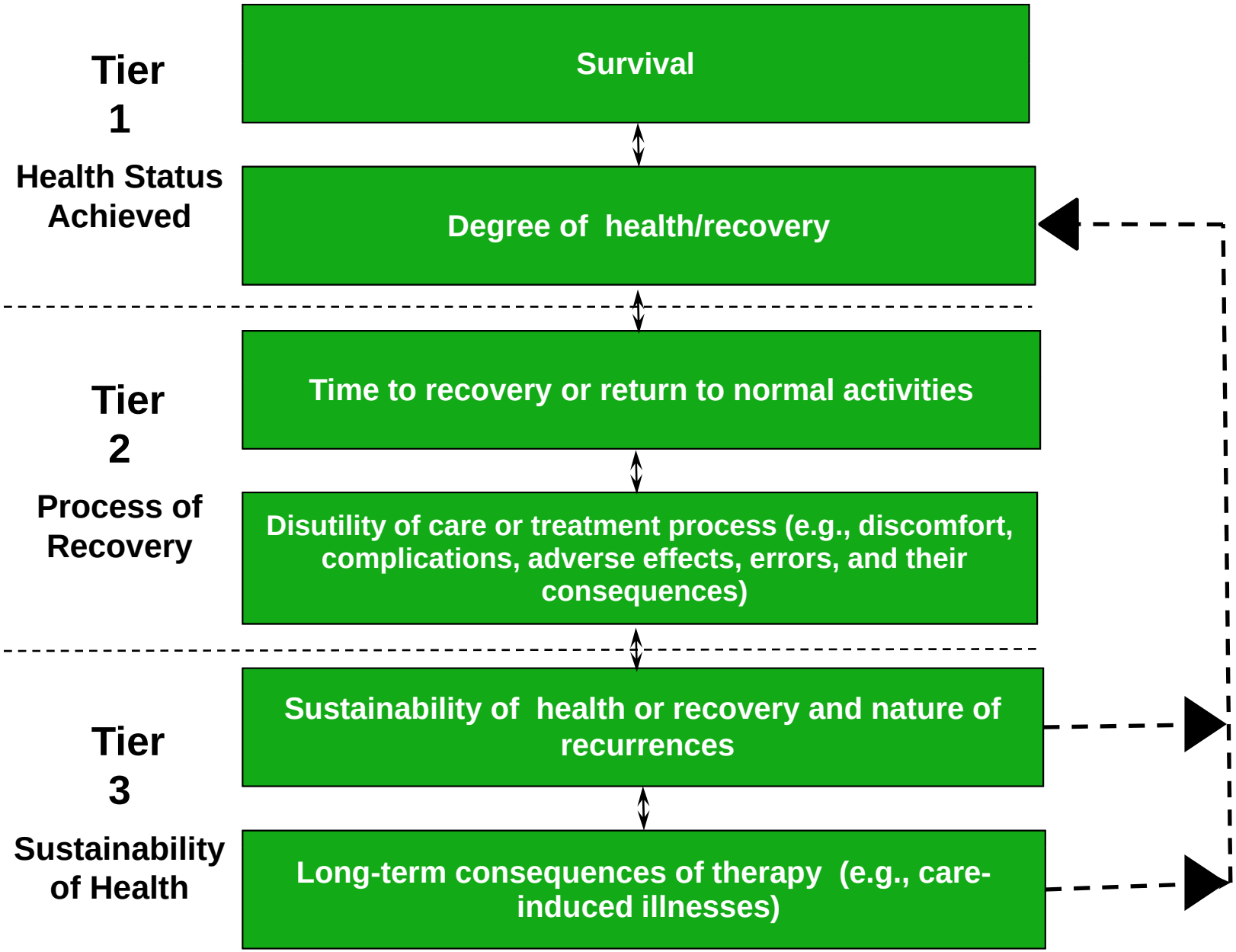
Dimensions of Measurement



Protocols/ Guidelines

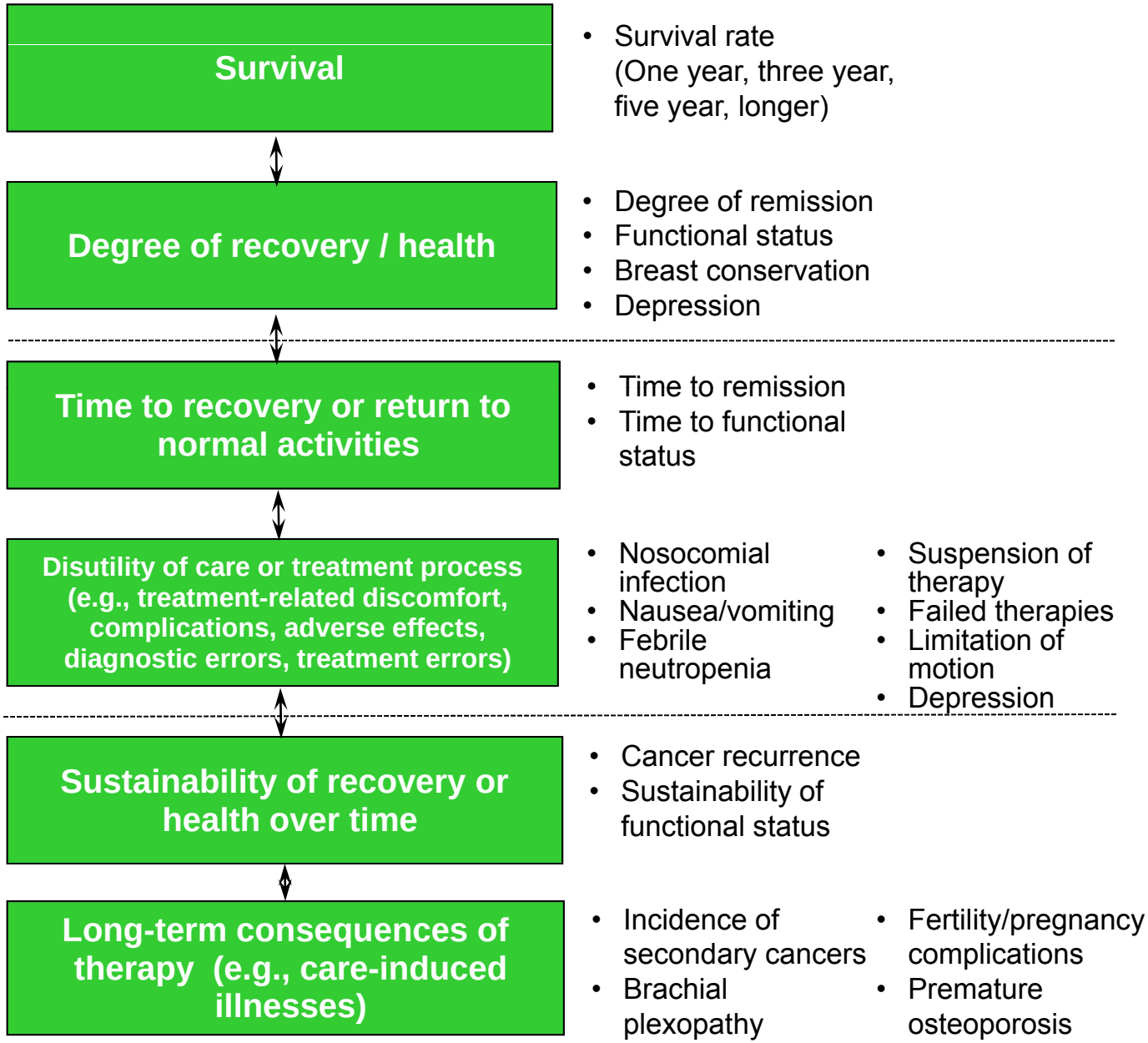
E.g., Hemoglobin A1c levels for diabetics

The Outcome Measures Hierarchy



The Outcome Measures Hierarchy

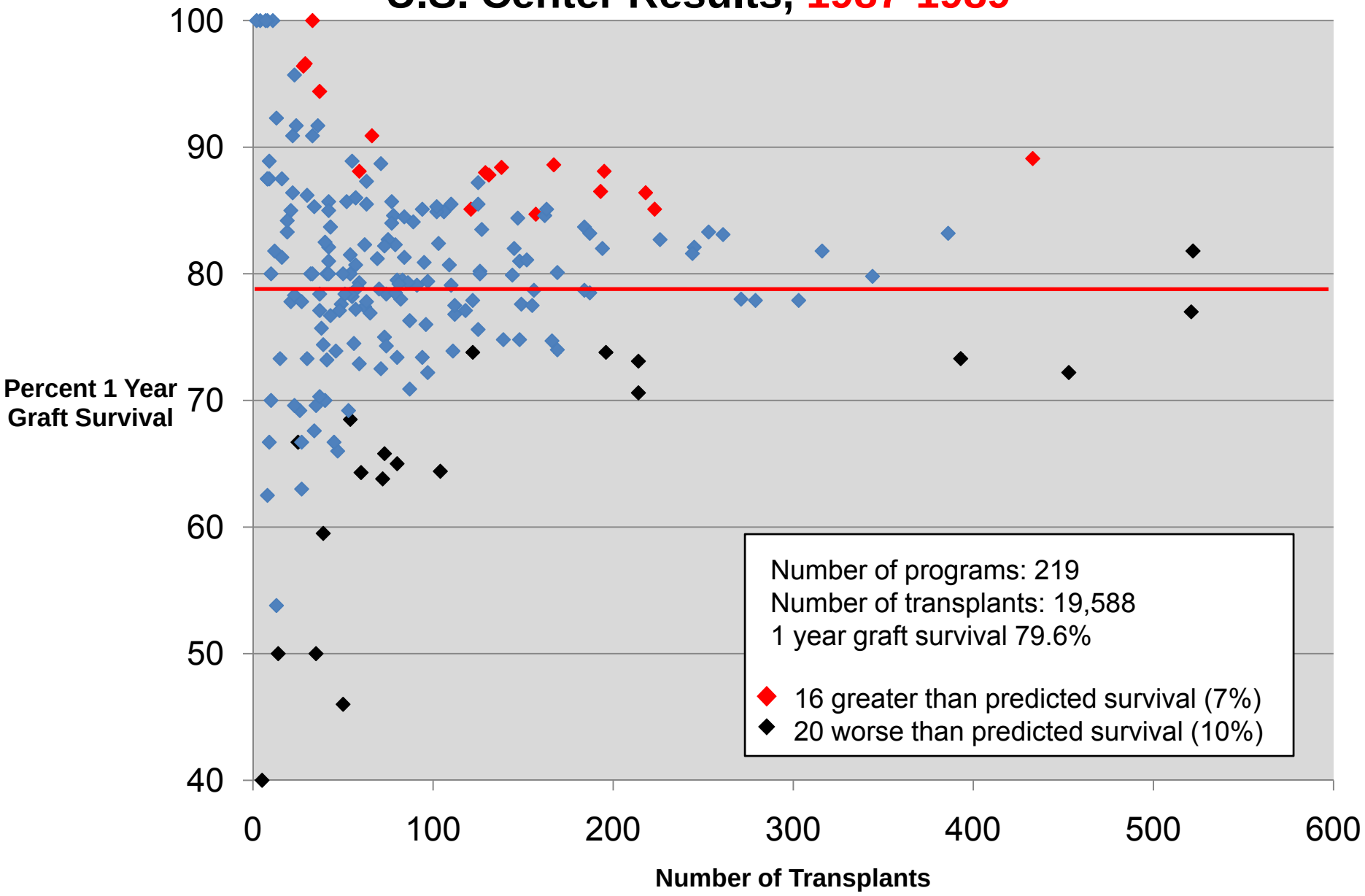
Breast Cancer



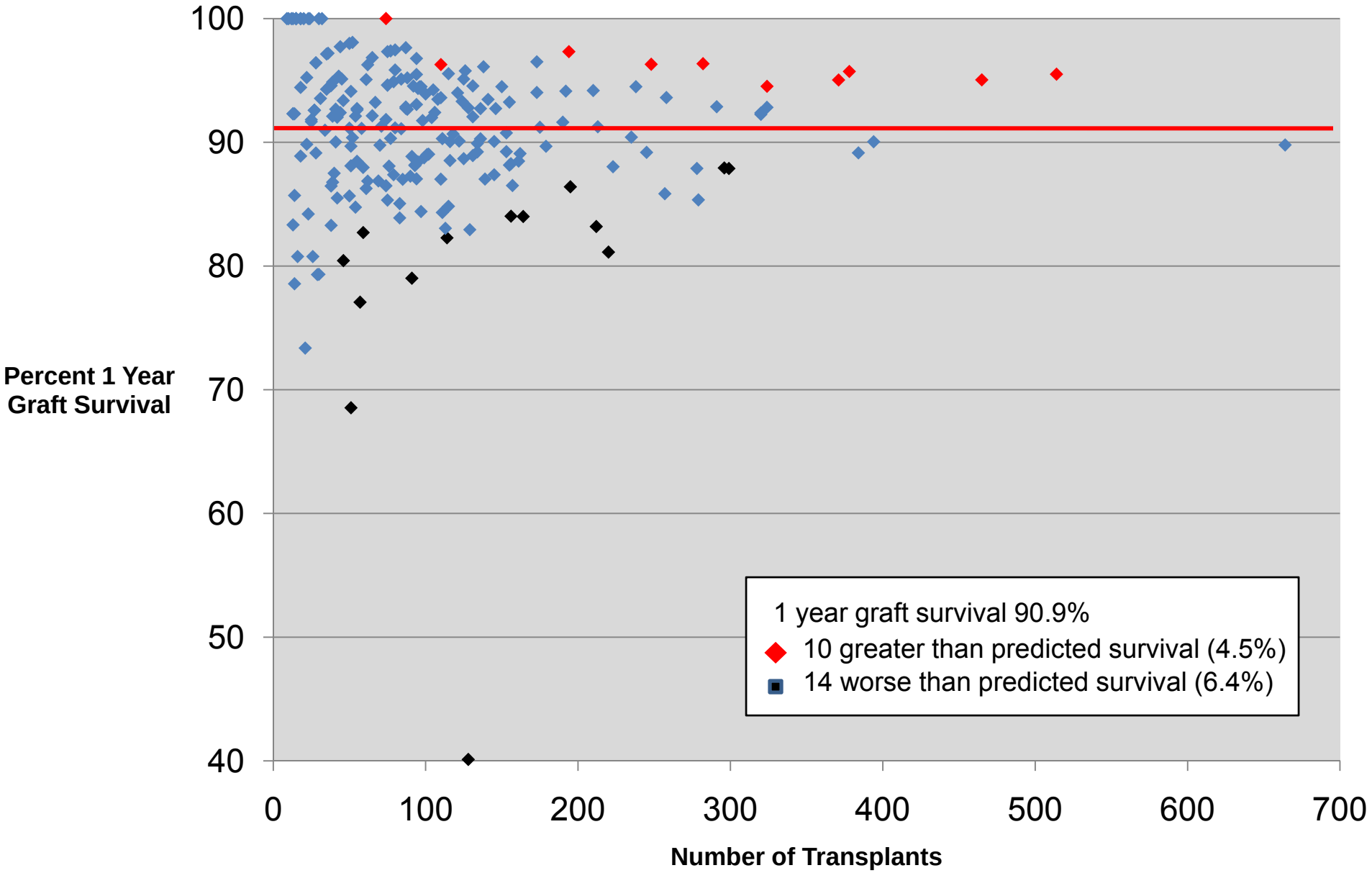
Initial Conditions/Risk Factors

- 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

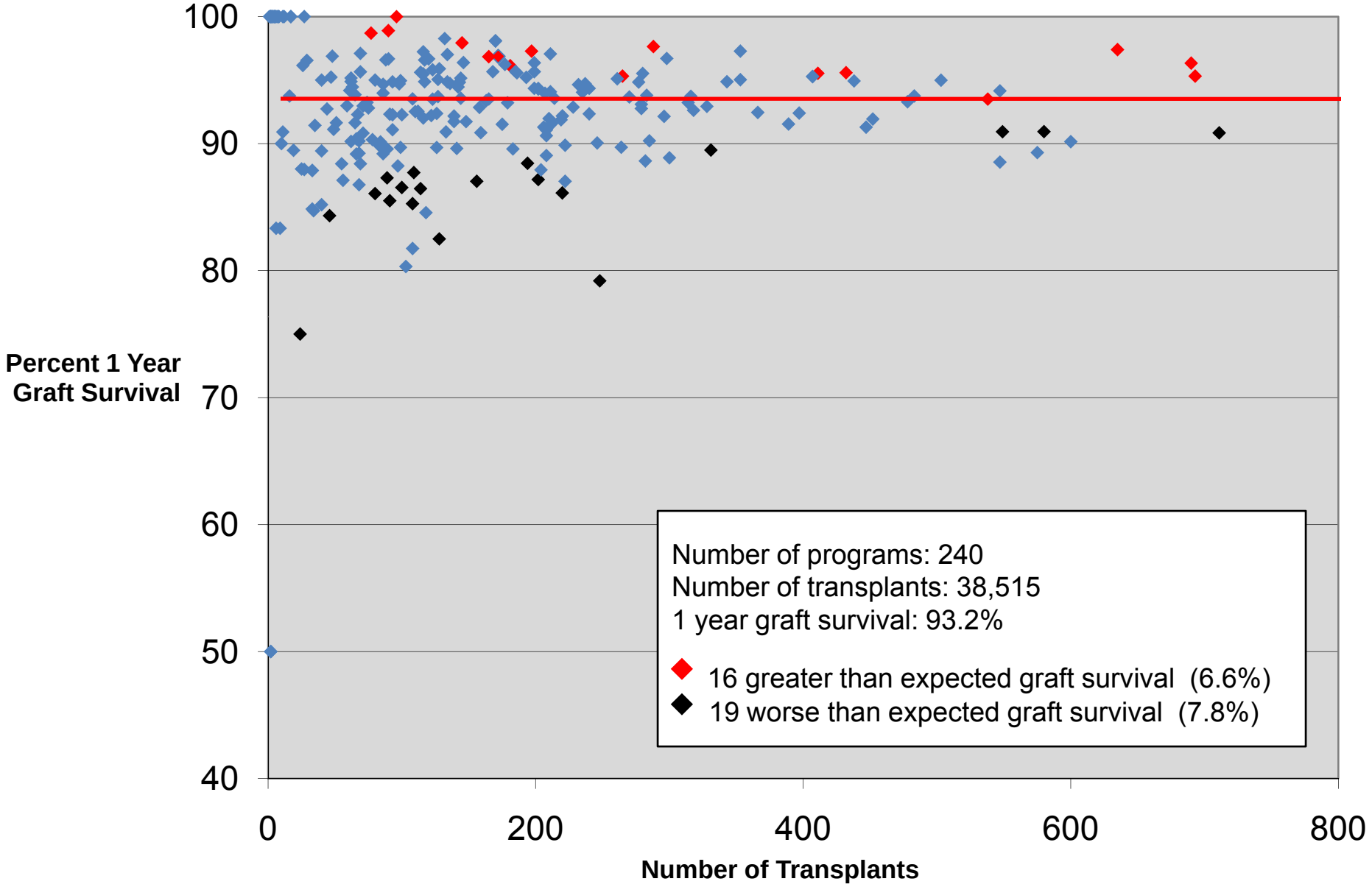
Adult Kidney Transplant Outcomes, U.S. Center Results, 1987-1989



Adult Kidney Transplant Outcomes, U.S. Center Results, 1998-2000



Adult Kidney Transplant Outcomes
U.S. Center Results, 2005-2007



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

Endocrine Diseases
- National Diabetes Registry (NDR)
- Swedish Obesity Surgery Registry (SOReg)
- Scandinavian Quality Register for Thyroid and Parathyroid Surgery

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

Measuring the Costs of Health Care

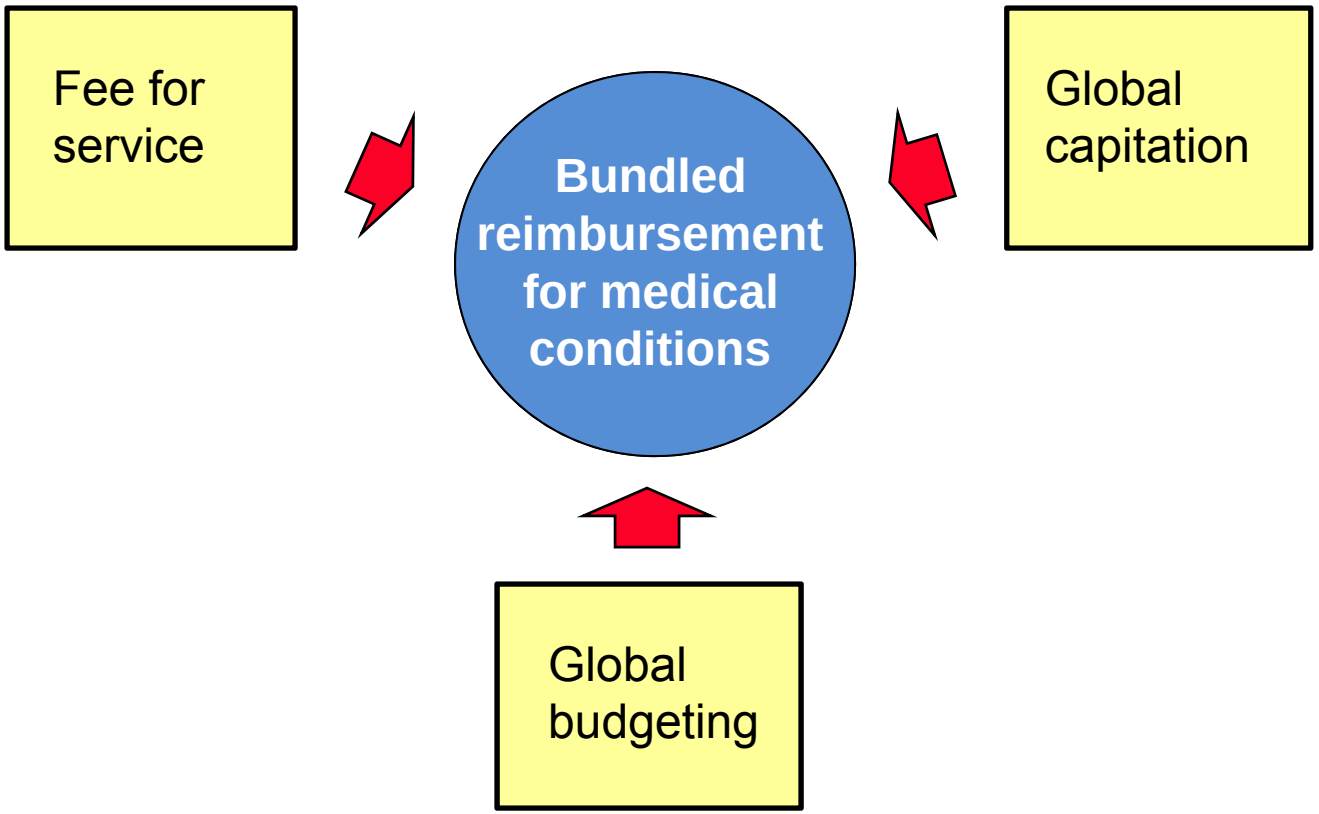
Aspiration

- Cost should be aggregated at the **medical condition level** (which includes common co-occurring conditions), not for services or entire facilities
- Cost should be aggregated **for each patient** across the **full cycle of care**
- The cost of each activity involved in caring for a patient should reflect **that patient's use of resources** (e.g. time, staff, facilities, service), rather than average allocations or allocations based on charges
- The only way to properly measure cost per patient is to track the **time** or **shared resource capacity** devoted to each patient by providers, facilities, support services, and other shared costs

Current 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 cost categories, 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?

- 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

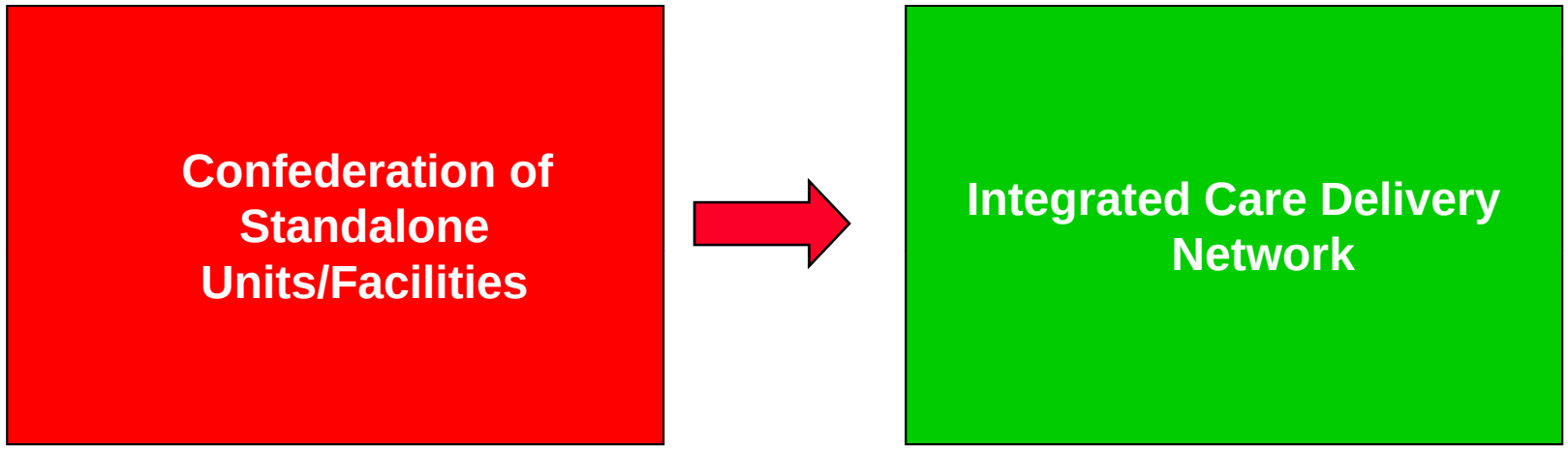
- Price for a **short** episode (e.g. inpatient only, procedure only)
- **Separate** payments for physicians and facilities
- **Pay-for-performance** bonuses
- "**Medical Home**" payment for care coordination

- 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
  - 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



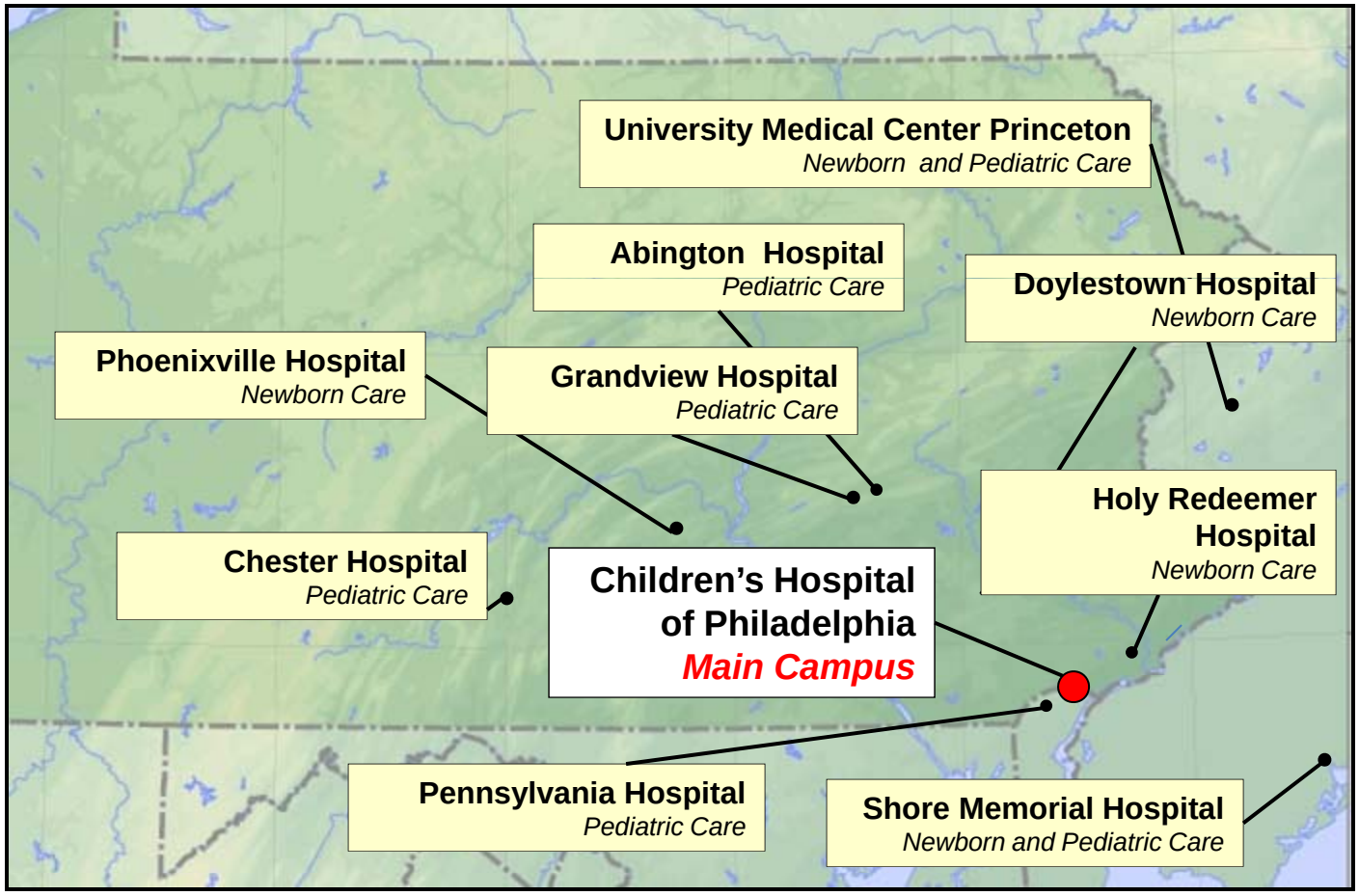
- Increase overall **volume**
- Benefits limited to **contracting** and **spreading limited fixed overhead**

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

Building an Integrated Care System

Children's Hospital of Philadelphia

Hospital Affiliates

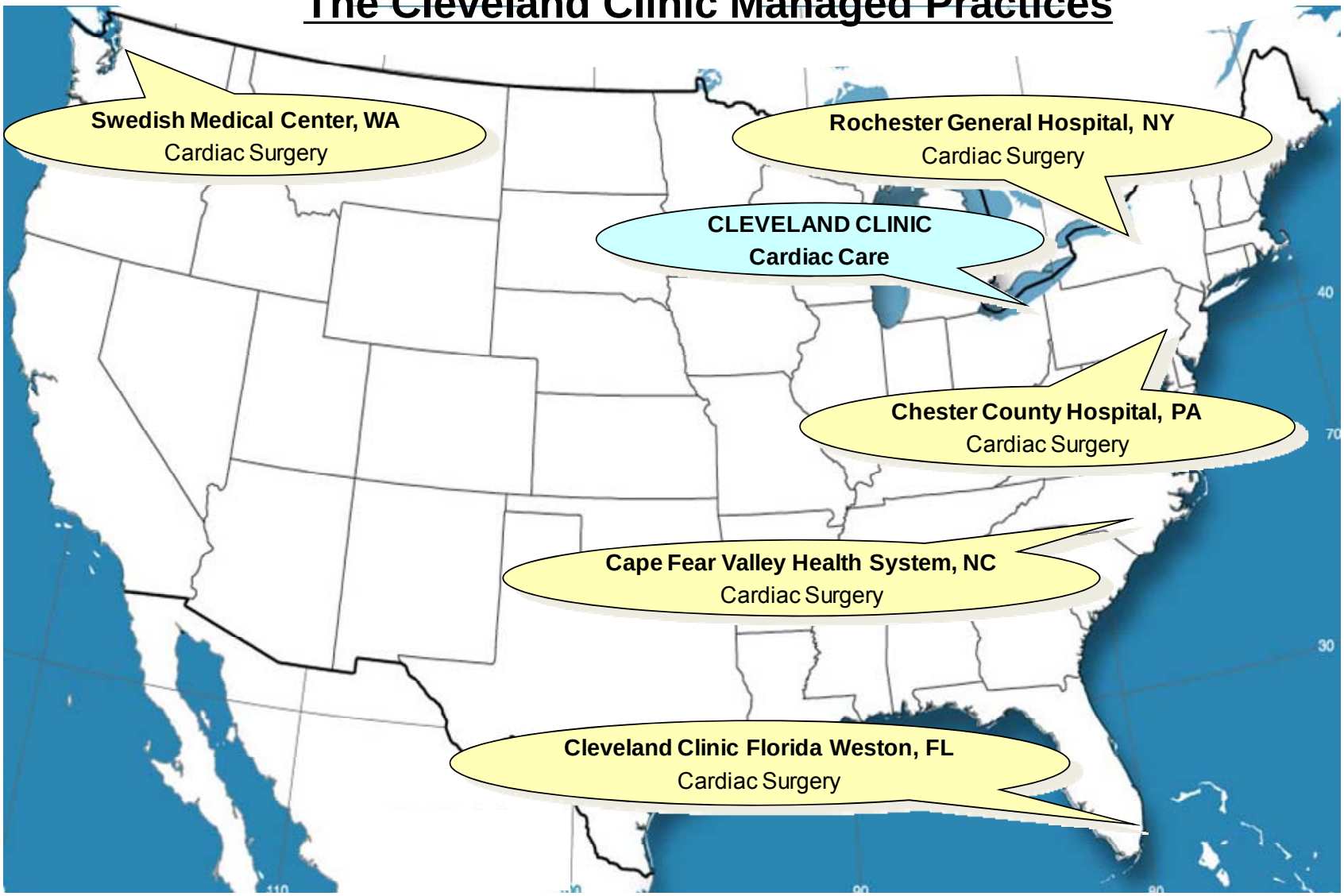


Levels of System Integration

- **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

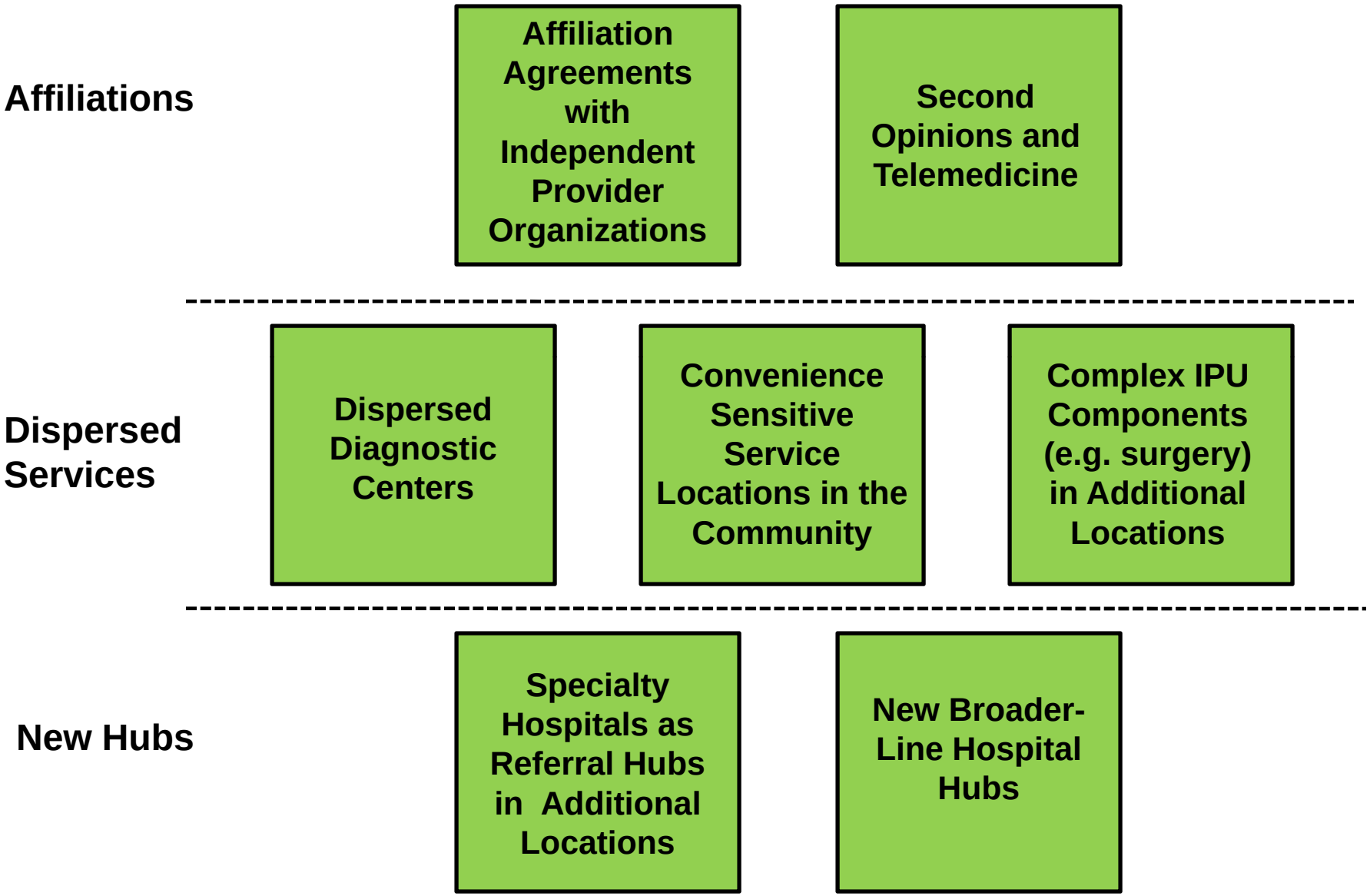
5. Expand Excellent IPUs Across Geography

The Cleveland Clinic Managed Practices



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

Models of Geographic Expansion



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**

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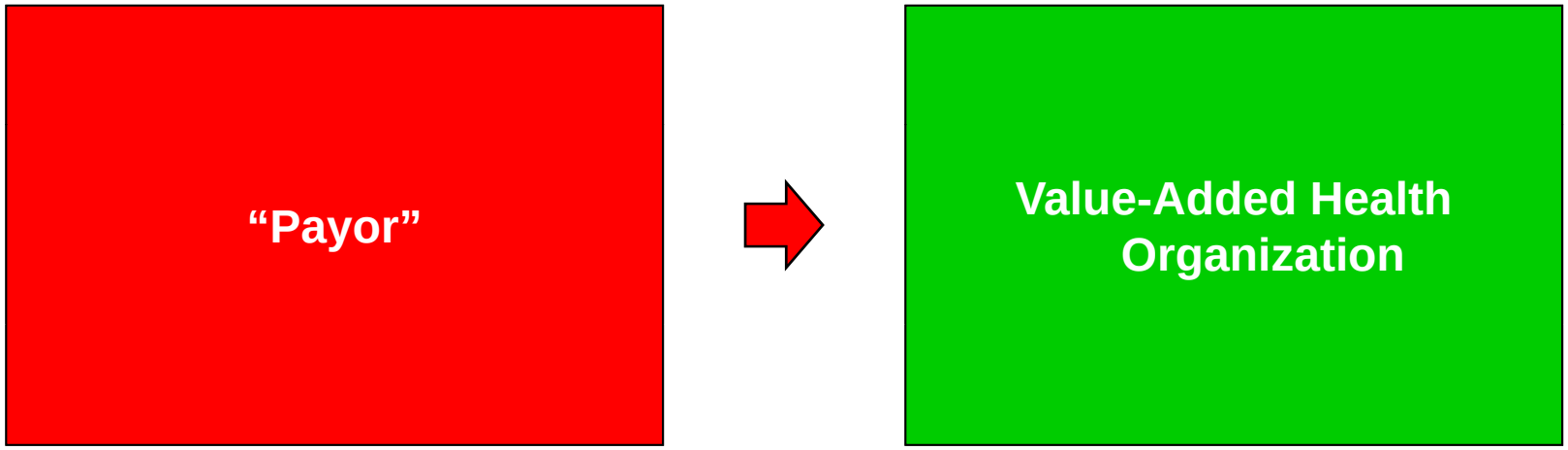
Value-Based Healthcare Delivery:
Implications for Contracting Parties/Health Plans



Value-Adding Roles of Health 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
- Measure and report **overall health results** for members by medical condition versus other plans

- 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 can 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
- Set policies that encourage greater **responsibility of individuals** for their health and their health care