Redefining Health Care: Lessons for China

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July 8, 2014

Challenges Facing Chinese Health Care

- High **out-of-pocket** patient spending
- Vast **technological and expertise disparities** between urban and rural hospitals
- **Inefficient** care delivery
- Lack of data or transparency on patient **outcomes** or **costs**

Solving the Health Care Problem

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

$$\text{Value} = \frac{\text{Health outcomes that matter to patients}}{\text{Costs of delivering the outcomes}}$$

- 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

- Improving value is the **only real solution** versus further cost shifting, restricting services, or dramatically reducing the compensation of health care professionals

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

Financial success of system participants	≠	Patient success

- Creating positive-sum competition on **value for patients** is fundamental to health care reform in every country

Principles of Value-Based Health Care Delivery

$$\text{Value} = \frac{\text{Health outcomes that matter to patients}}{\text{Costs of delivering the outcomes}}$$

- Value is measured for the **care of a patient's medical condition** over the **full cycle of care**
  - 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

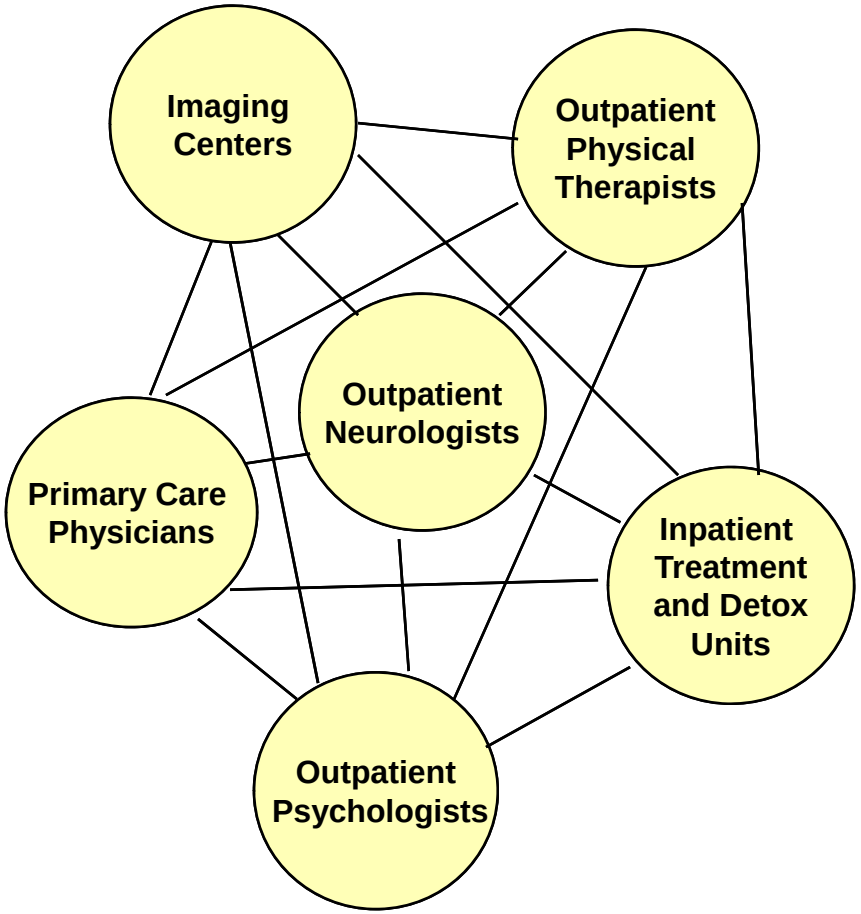
1. Organize Care into Integrated Practice Units (IPUs) around Patient Medical Conditions
   - For primary and preventive care, organize to serve distinct patient segments
2. Measure Outcomes and Costs for Every Patient
3. Move to Bundled Payments for Care Cycles
4. Integrate Care Delivery Systems
5. Expand Geographic Reach and Serve a Major Population
6. Build an Enabling Information Technology Platform

1. Organize Care Around Patient Medical Conditions

Migraine Care in Germany

Existing Model:

Organize by Specialty and Discrete Service



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

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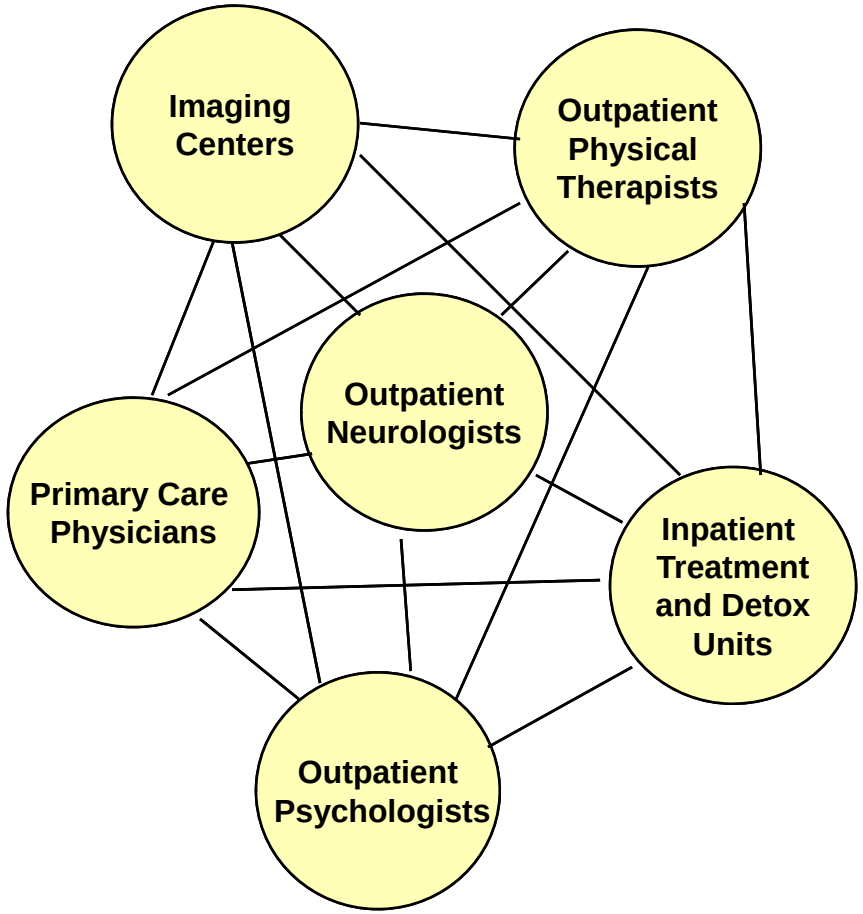
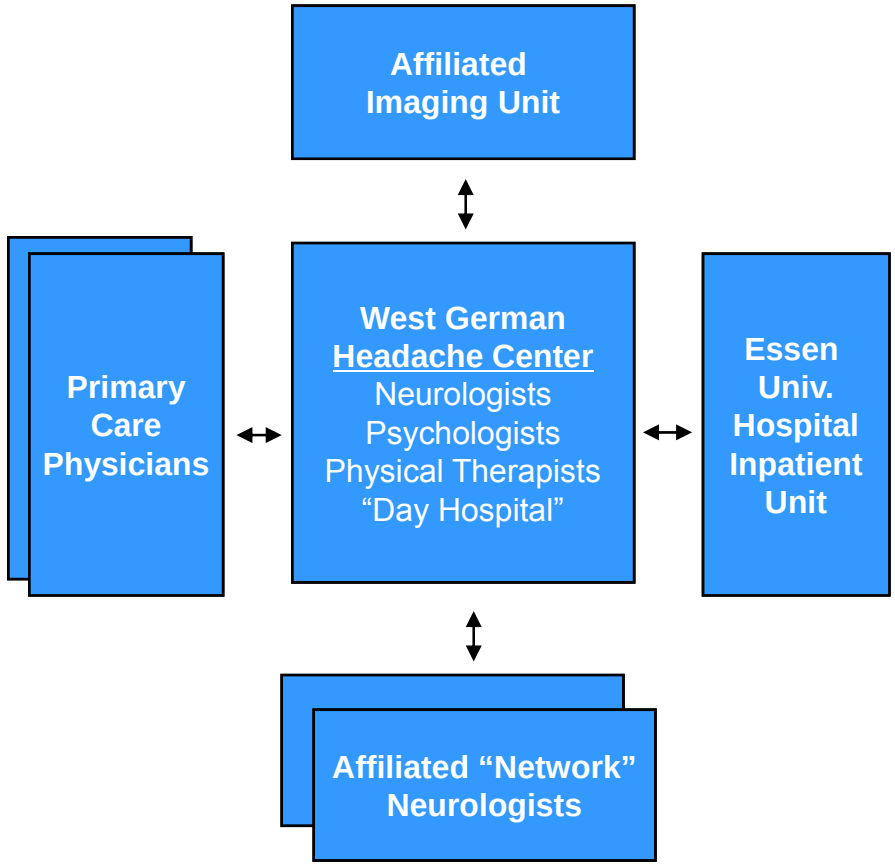


New Model:
Organize into Integrated Practice Units (IPUs)



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

  Examples: 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 value measurement** in health care delivery

Source: Porter, Michael E. with Thomas H. Lee and Erika A. Pabo. "Redesigning Primary Care: A Strategic Vision to Improve Value by Organizing Around Patients' Needs," *Health Affairs*, Mar, 2013

The Care Delivery Value Chain

Acute Knee-Osteoarthritis Requiring Replacement

	MONITORING/ PREVENTING	DIAGNOSING	PREPARING	INTERVENING	RECOVERING/ REHABBING	MONITORING/ MANAGING
INFORMING AND ENGAGING	• Importance of exercise, weight reduction, proper nutrition	• Meaning of diagnosis • Prognosis (short- and long-term outcomes) • Drawbacks and benefits of surgery	• Setting expectations • Importance of nutrition, weight loss, vaccinations • Home preparation	• Expectations for recovery • Importance of rehab • Post-surgery risk factors	• Importance of rehab adherence • Longitudinal care plan	• Importance of exercise, maintaining healthy weight
MEASURING	• Joint-specific symptoms and function (e.g., WOMAC scale) • Overall health (e.g., SF-12 scale)	• Loss of cartilage • Change in subchondral bone • Joint-specific symptoms and function • Overall health	• Baseline health status • Fitness for surgery (e.g., ASA score)	• Blood loss • Operative time • Complications	• Infections • Joint-specific symptoms and function • Inpatient length of stay • Ability to return to normal activities	• Joint-specific symptoms and function • Weight gain or loss • Missed work • Overall health
ACCESSING	• PCP office • Health club • Physical therapy clinic	• Specialty office • Imaging facility	• Specialty office • Pre-op evaluation center	• Operating room • Recovery room • Orthopedic floor at hospital or specialty surgery center	• Nursing facility • Rehab facility • PT clinic • Home	• Specialty office • Primary care office • Health club
CARE DELIVERY	**MONITOR** • Conduct PCP exam • Refer to specialists, if necessary **PREVENT** • Prescribe anti-inflammatory medicines • Recommend exercise regimen • Set weight loss targets	**IMAGING** • Perform and evaluate MRI and x-ray -Assess cartilage loss -Assess bone alterations **CLINICAL EVALUATION** • Review history and imaging • Perform physical exam • Recommend treatment plan (surgery or other options)	**OVERALL PREP** • Conduct home assessment • Monitor weight loss **SURGICAL PREP** • Perform cardiology, pulmonary evaluations • Run blood labs • Conduct pre-op physical exam	**ANESTHESIA** • Administer anesthesia (general, epidural, or regional) **SURGICAL PROCEDURE** • Determine approach (e.g., minimally invasive) • Insert device • Cement joint **PAIN MANAGEMENT** • Prescribe preemptive multimodal pain meds	**SURGICAL** • Immediate return to OR for manipulation, if necessary **MEDICAL** • Monitor coagulation **LIVING** • Provide daily living support (showering, dressing) • Track risk indicators (fever, swelling, other) **PHYSICAL THERAPY** • Daily or twice daily PT sessions	**MONITOR** • Consult regularly with patient **MANAGE** • Prescribe prophylactic antibiotics when needed • Set long-term exercise plan • Revise joint, if necessary

Orthopedic Specialist

Other Provider Entities

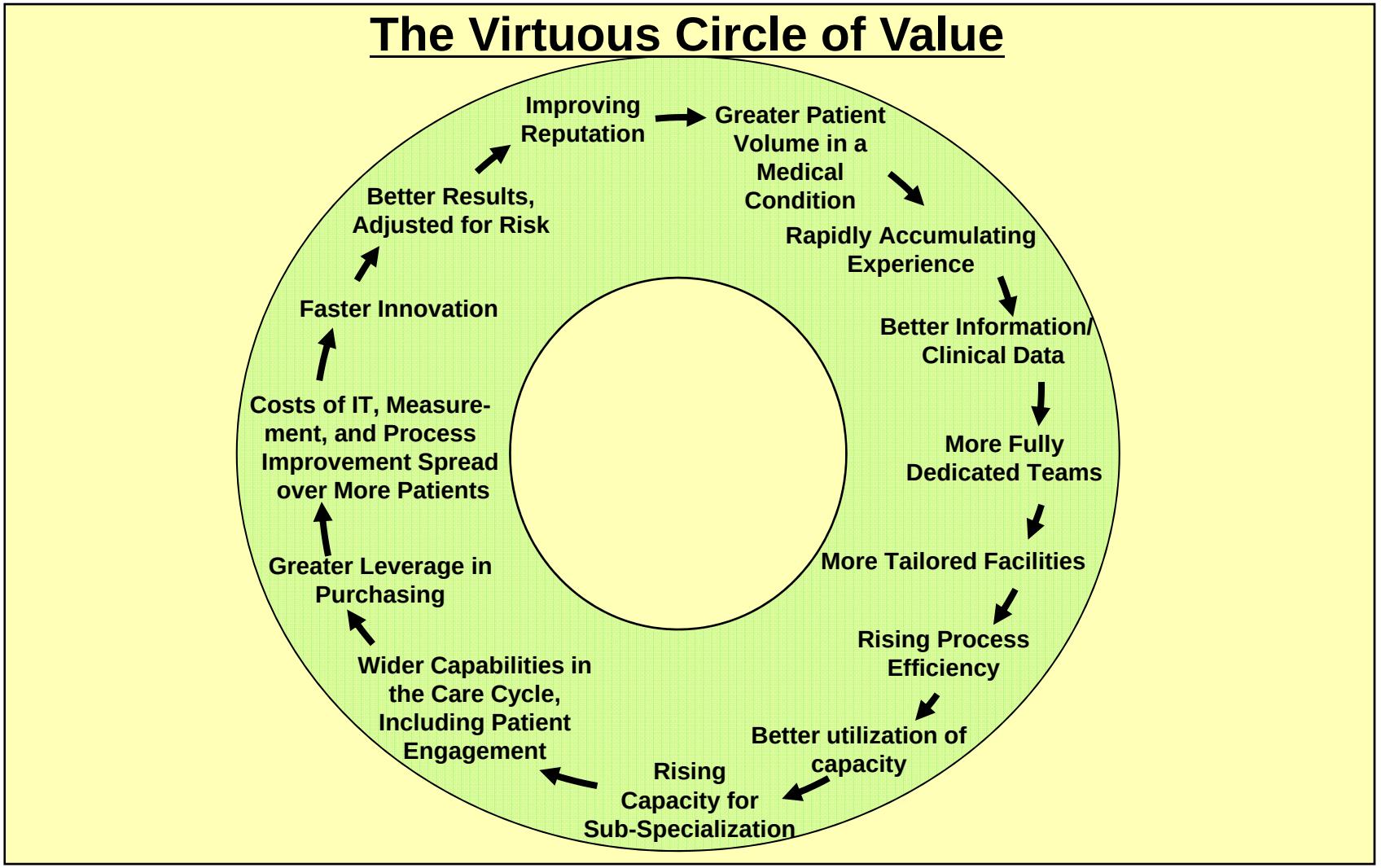
Integrating Across the Care Cycle

An Orthopedic Surgeon Teaches A Course to Physical Therapists About Treatment Post-Surgery

Attributes of an Integrated Practice Unit (IPU)

1. Organized around a **medical condition** or set of **closely related conditions** (or around defined patient segments for primary care)
2. Care is delivered by a **dedicated**, **multidisciplinary team** who devote a significant portion of their time to the medical condition
3. Providers see themselves as part of a **common organizational unit**
4. The team takes responsibility for the **full cycle of care** for the condition
   - Encompassing **outpatient**, **inpatient**, and **rehabilitative** care, as well as **supporting services** (such as nutrition, social work, and behavioral health)
5. **Patient education**, **engagement**, and **follow-up are integrated** into care
6. The unit has a **single administrative** and **scheduling structure**
7. To a large extent, **care is co-located** in **dedicated facilities**
8. A **physician team captain** or a **clinical care manager** (or both) oversees each patient's care process
9. The **team measures** outcomes, costs, and processes for each patient using a **common measurement platform**
10. The providers on the team meet **formally and informally** on a regular basis to discuss patients, processes, and results
11. **Joint accountability** is accepted 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

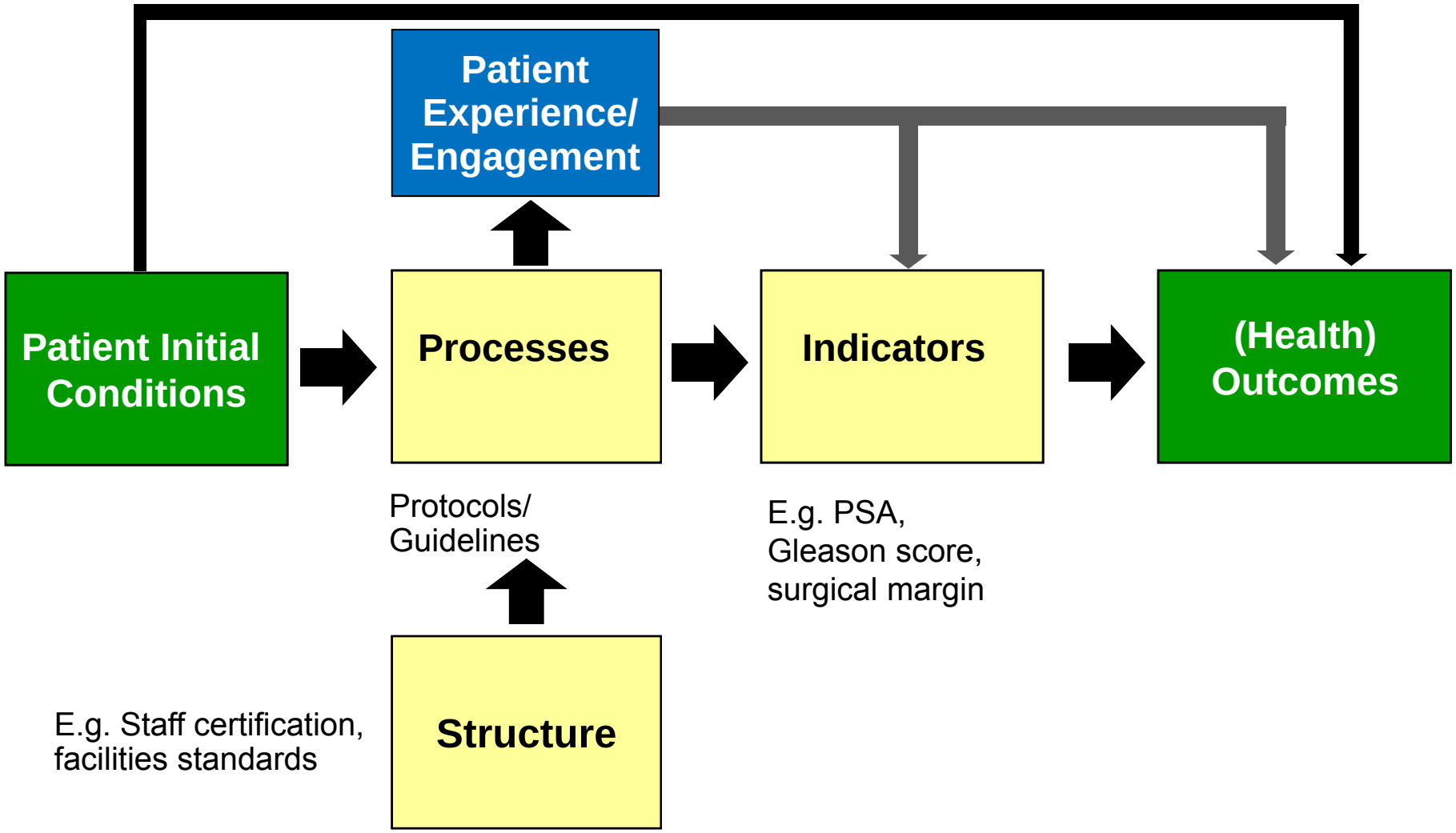
Fragmentation of Hospital Services in Sweden

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

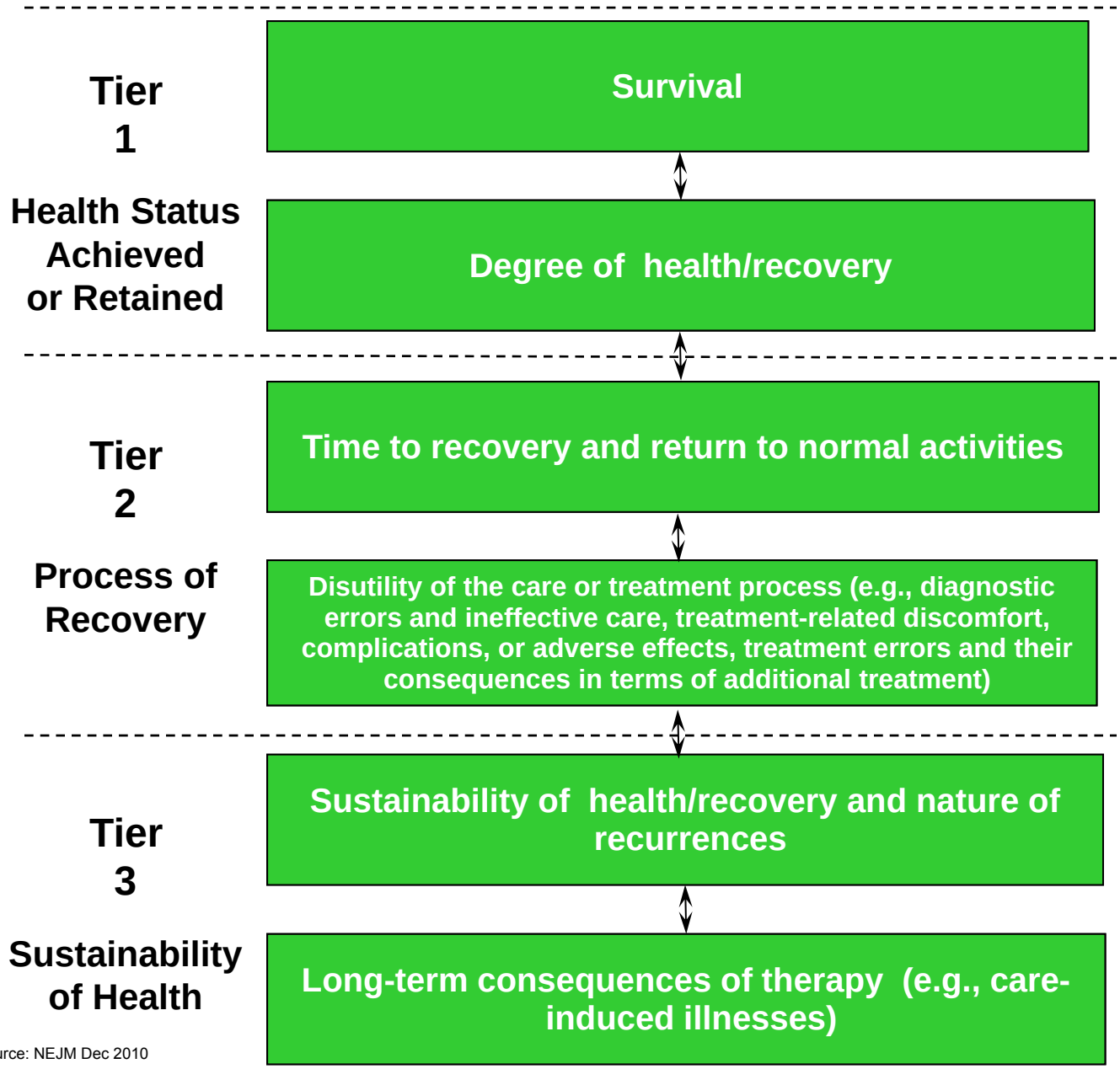
Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

2. Measure Outcomes and Costs for Every Patient

The Measurement Landscape

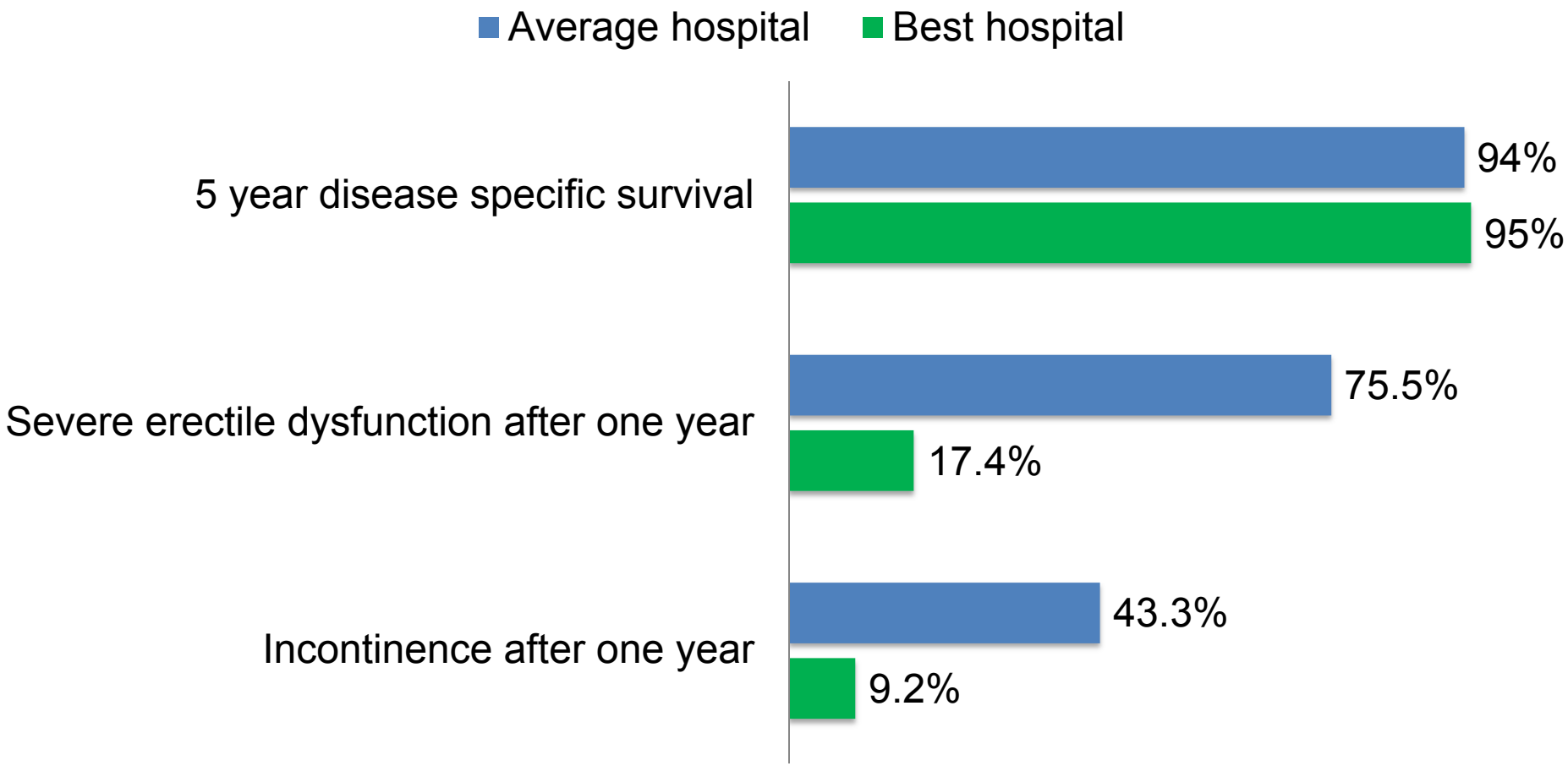


The Outcome Measures Hierarchy



Source: NEJM Dec 2010

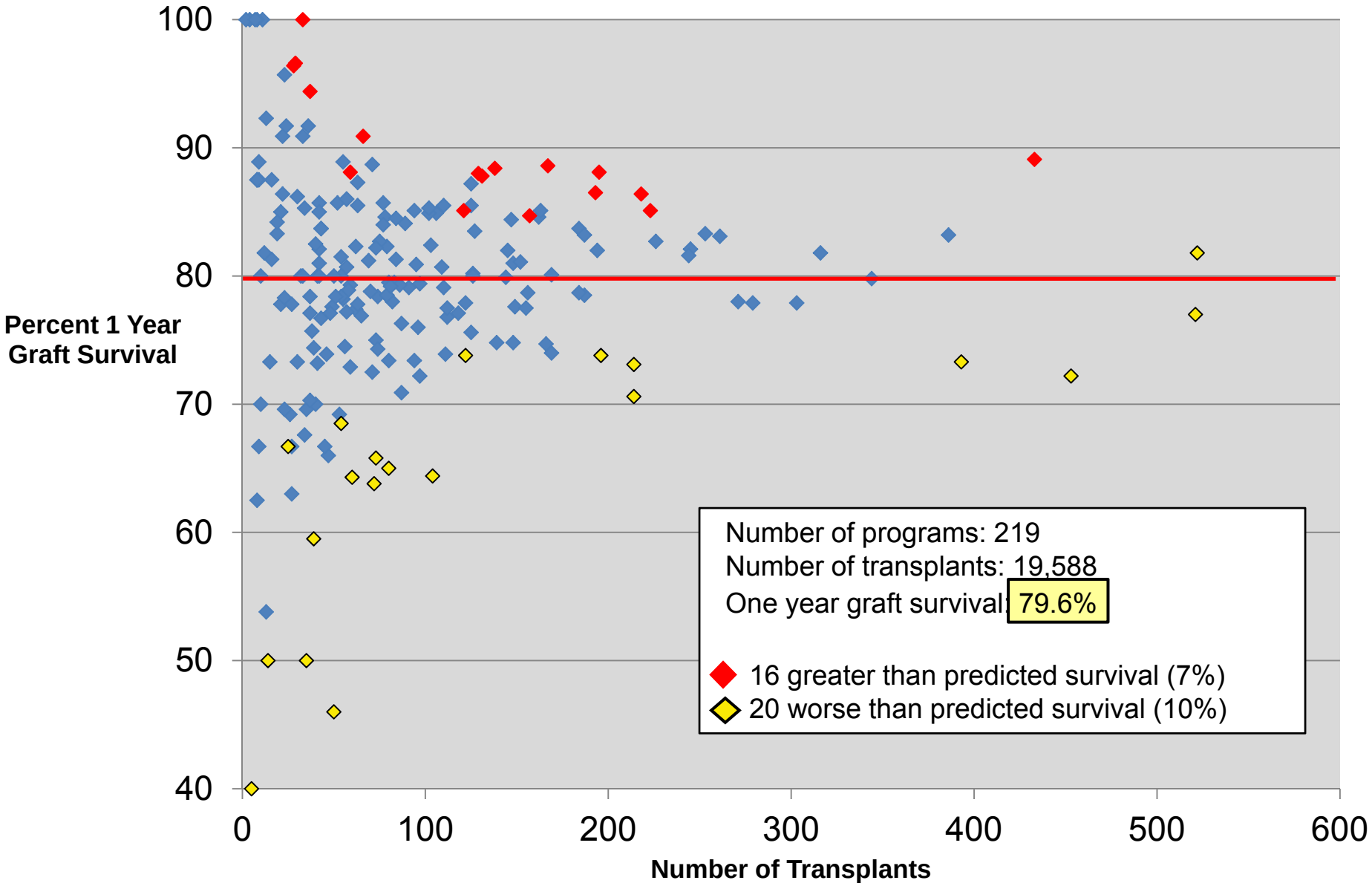
Measuring Multiple Outcomes
Prostate Cancer Care in Germany



Source: ICHOM

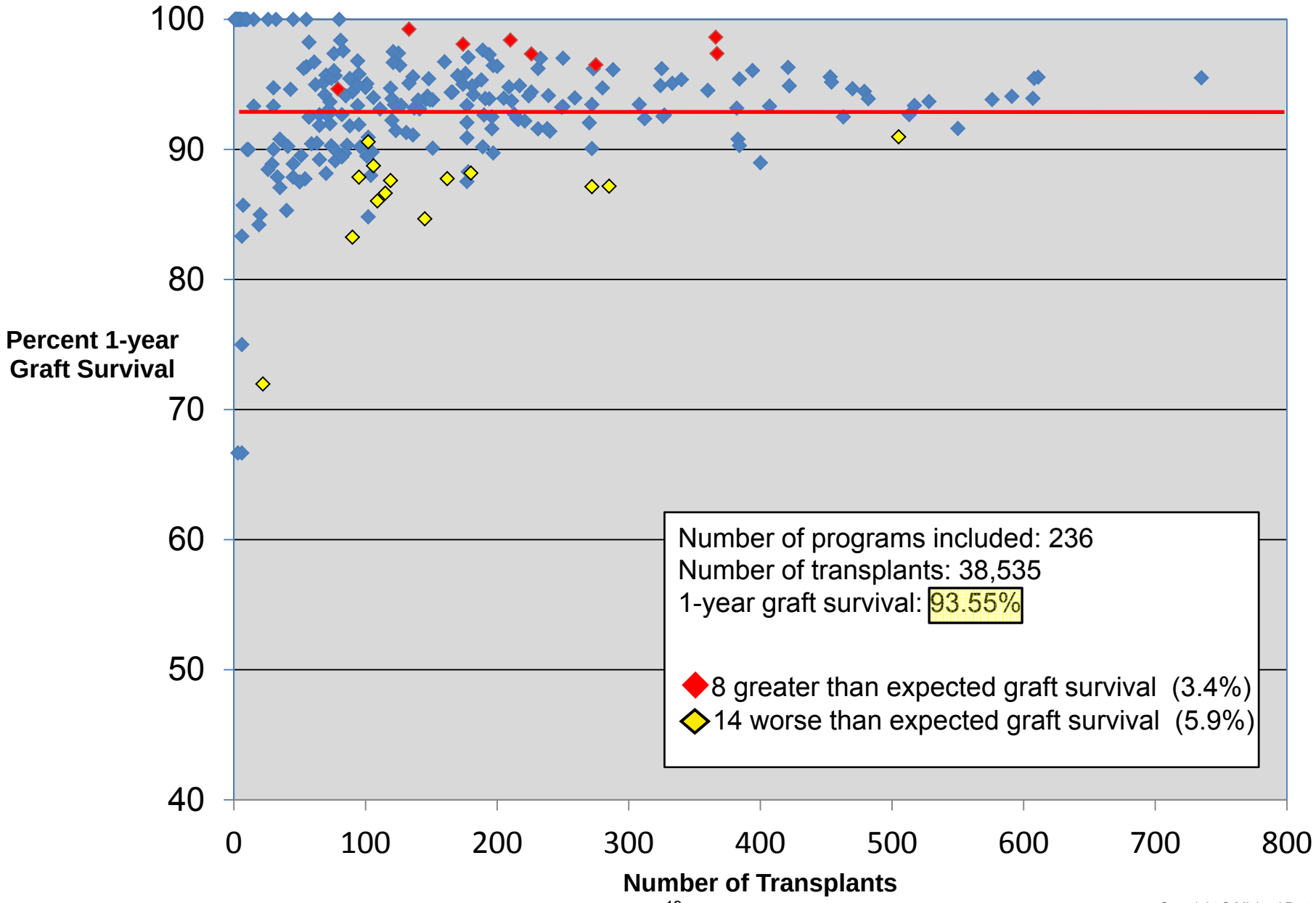
Adult Kidney Transplant Outcomes

U.S. Centers, 1987-1989



Adult Kidney Transplant Outcomes

U.S. Center Results, 2008-2010



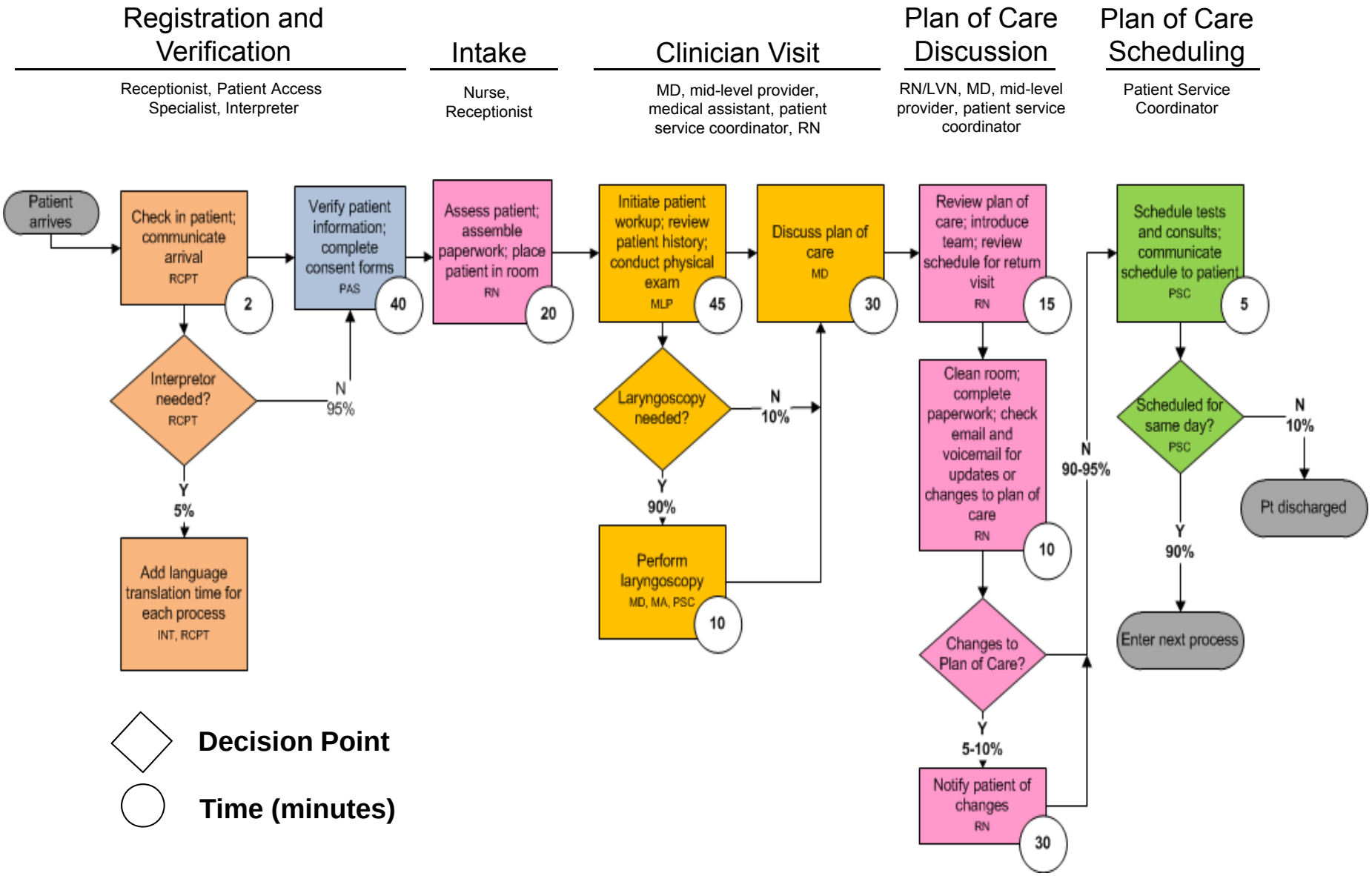
Measuring the Cost of Care Delivery: Principles

- Cost is the **actual expense** of patient care, not the **charge** billed or collected
- Cost should be measured around the **patient**, not just the department or provider organization
- Cost should be aggregated over the **full cycle of care for the patient's medical condition**
- Cost depends on the **actual use of resources** involved in a patient's care process (personnel, facilities, supplies)
- **"Overhead"** costs should be associated with the patient facing resources which drive their usage

Source: Kaplan, Robert and Michael E. Porter, "The Big Idea: How to Solve the Cost Crisis in Health Care", *Harvard Business Review*, September 1. 2011

Mapping Resource Utilization

MD Anderson Cancer Center – New Patient Visit

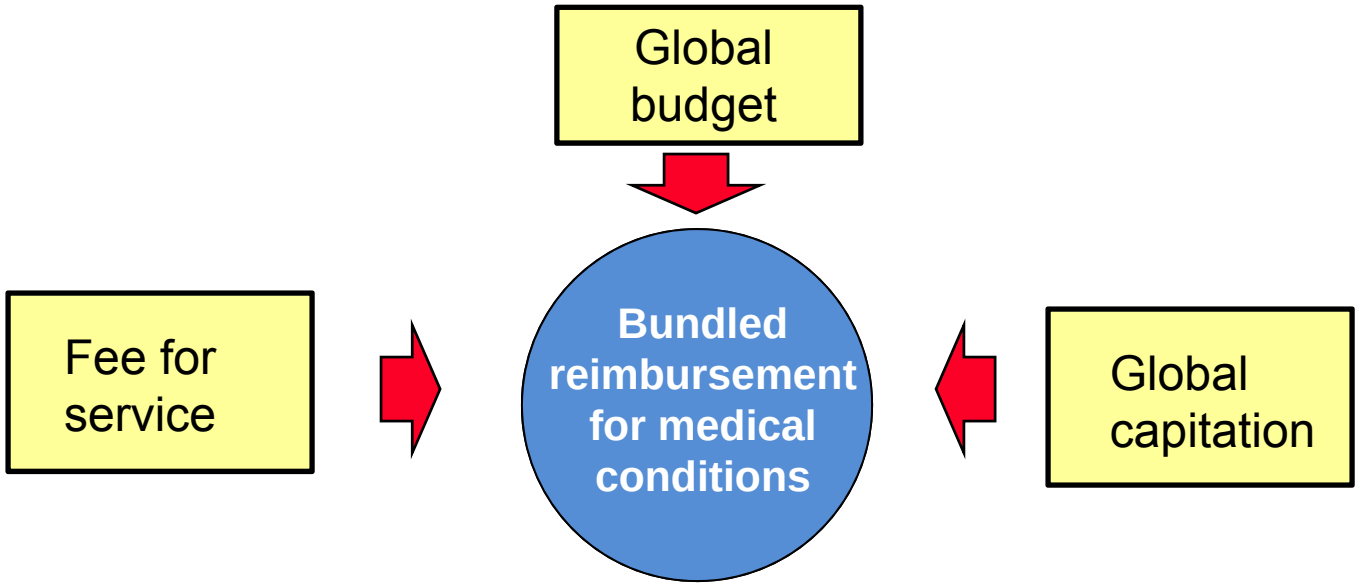


Major Cost Reduction Opportunities in Health Care

- Reduce **process variation** that lowers efficiency and raises inventory without improving outcomes
- Eliminate **low-** or **non-value added** services or tests
  - Sometimes driven by protocols or to justify billing
- Rationalize redundant **administrative** and **scheduling** units
- **Improve utilization** of expensive physicians, staff, clinical space, and facilities by reducing duplication and service fragmentation
- Minimize use of **physician and skilled staff** time for less skilled activities
- Reduce the provision of routine or uncomplicated services in **highly-resourced** facilities
- **Reduce cycle times** across the care cycle
- **Optimize total care cycle cost** versus minimizing cost of individual service
- Increase **cost awareness** in clinical teams

- Many cost reduction opportunities will actually **improve outcomes**

3. Move to Bundled Payments 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 OrthoChoice bundle

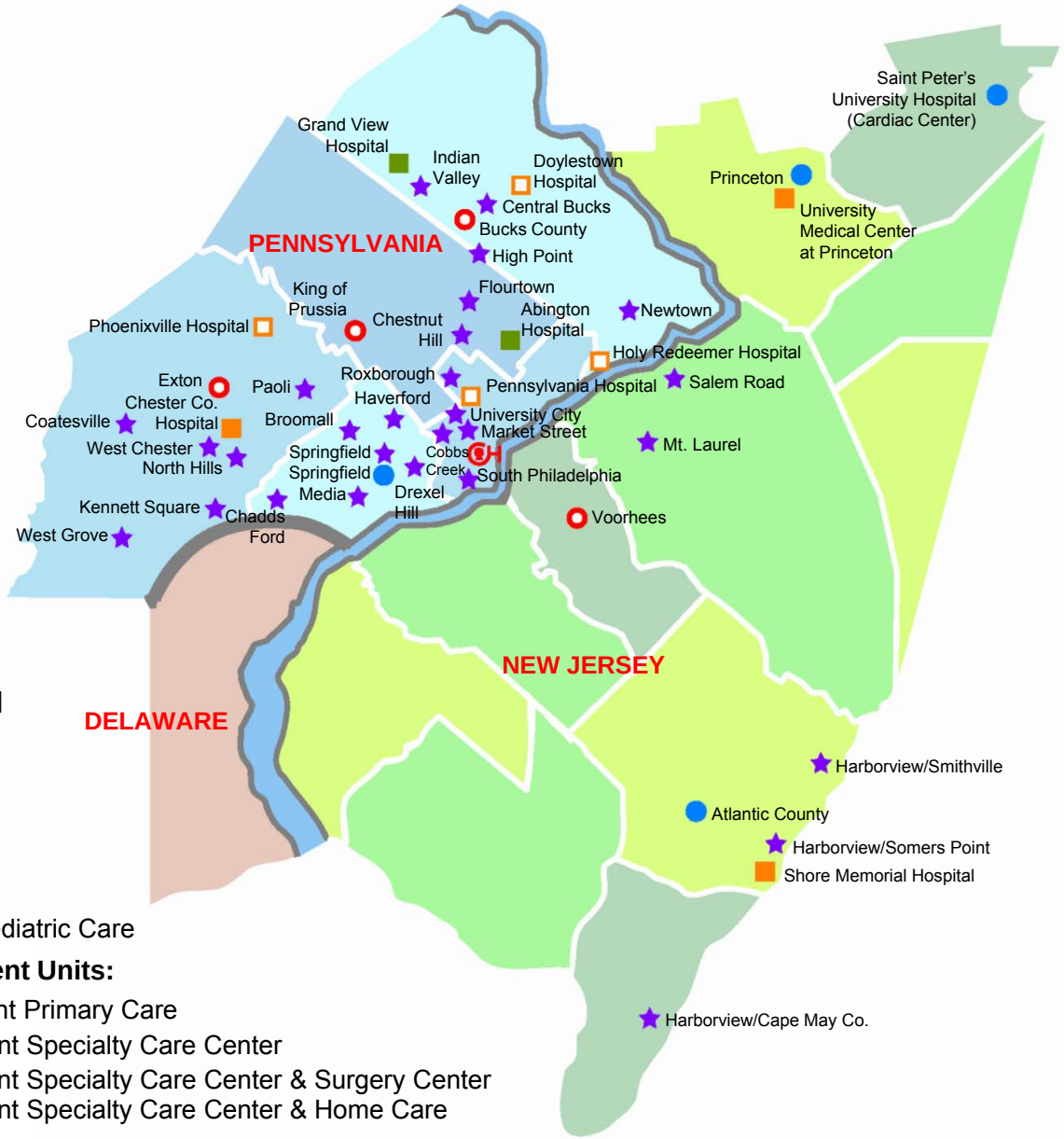
- Pre-op evaluation - Lab tests - All Radiology - Surgery & related admissions - Prosthesis - Drugs - Inpatient rehab, up to 6 days	- All physician and staff fees and costs - 1 follow-up visit within 3 months - Responsible for complications and any additional surgery to the joint within 2 years - If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

- Initially applied 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
- Bundle applies to **all** qualifying patients. Provider participation is **voluntary**, but all providers opted in

- The Stockholm bundled price for a knee or hip replacement is about **US $8,000**

4. Integrate Care Delivery Systems

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. **Define the overall scope of services** where the provider organization can achieve high value

2. **Concentrate volume by condition** in fewer locations

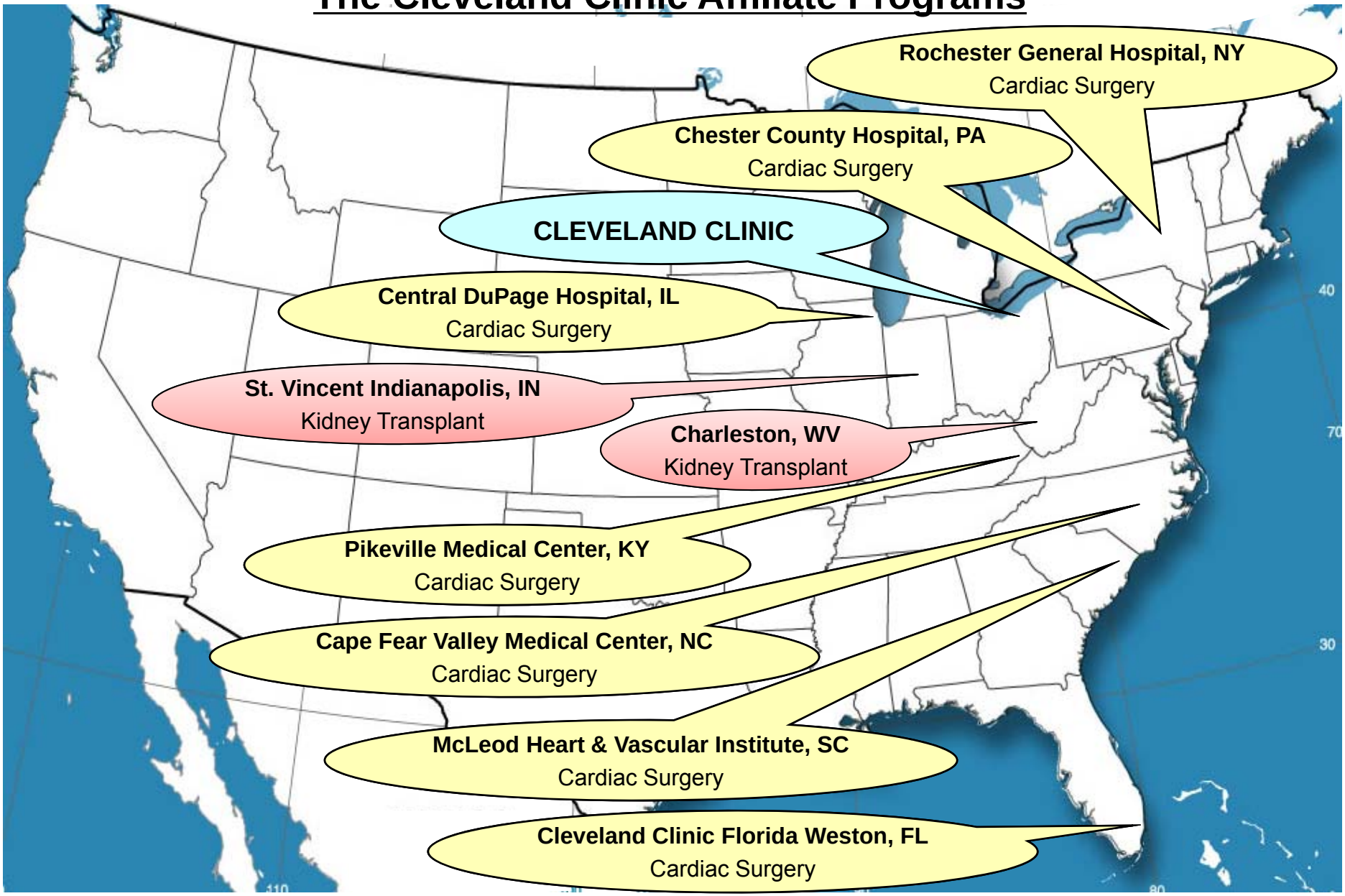
3. Choose the **right location for each service** based on medical condition, acuity level, resource intensity, cost level and need for convenience

   E.g., shift routine surgeries out of tertiary hospitals to smaller, more specialized facilities

4. Integrate care **across appropriate locations** through IPUs

5. Expand Geographic Reach

The Cleveland Clinic Affiliate Programs

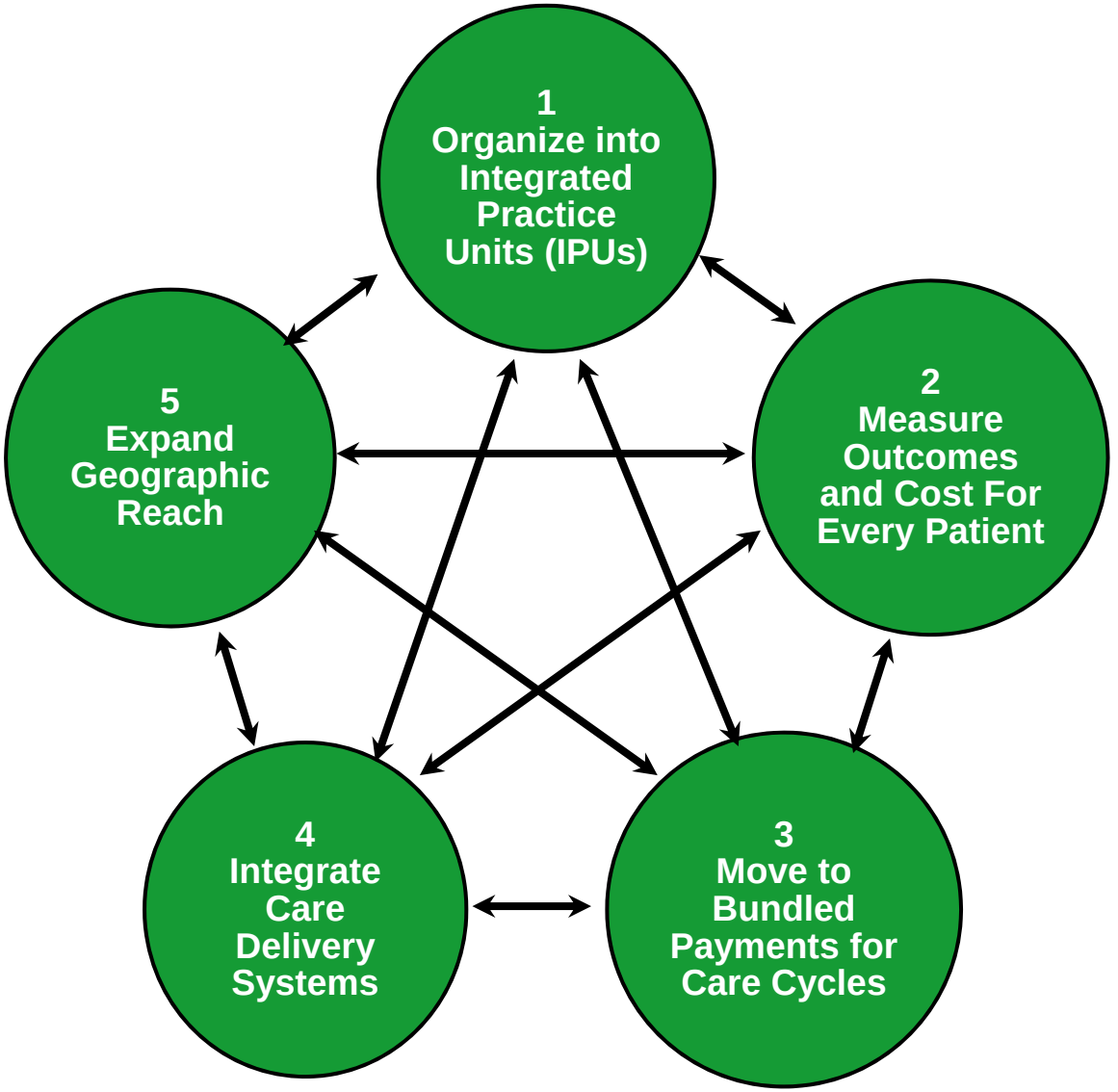


6. Build an Enabling Integrated IT Platform

Utilize information technology to enable **restructuring of care delivery** and **measuring results**, rather than treating it as a solution itself

- Combine **all types of data** (e.g. notes, images) for each patient
- Common **data definitions**
- 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**

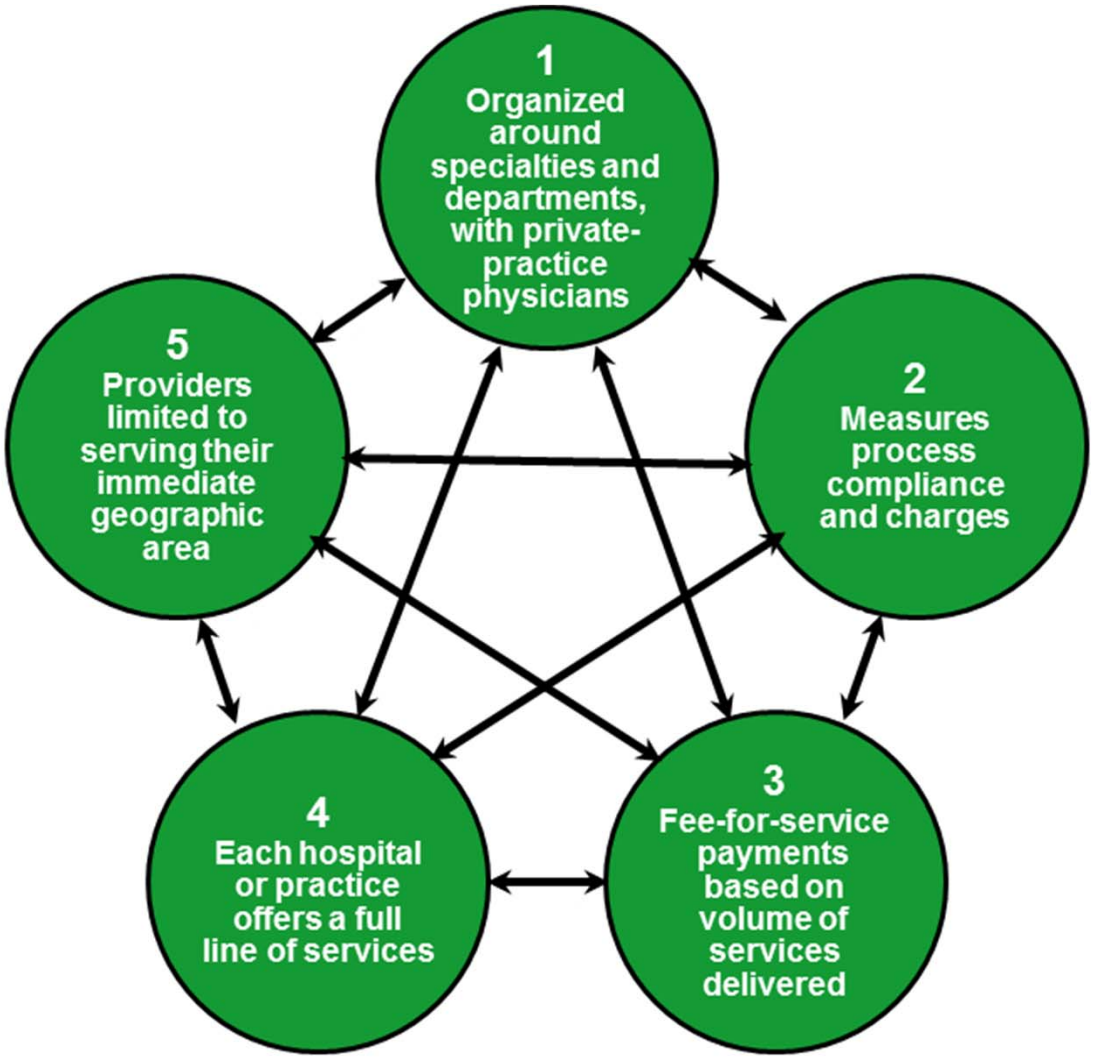
A Mutually Reinforcing Strategic Agenda



6 Build an Integrated Information Technology Platform

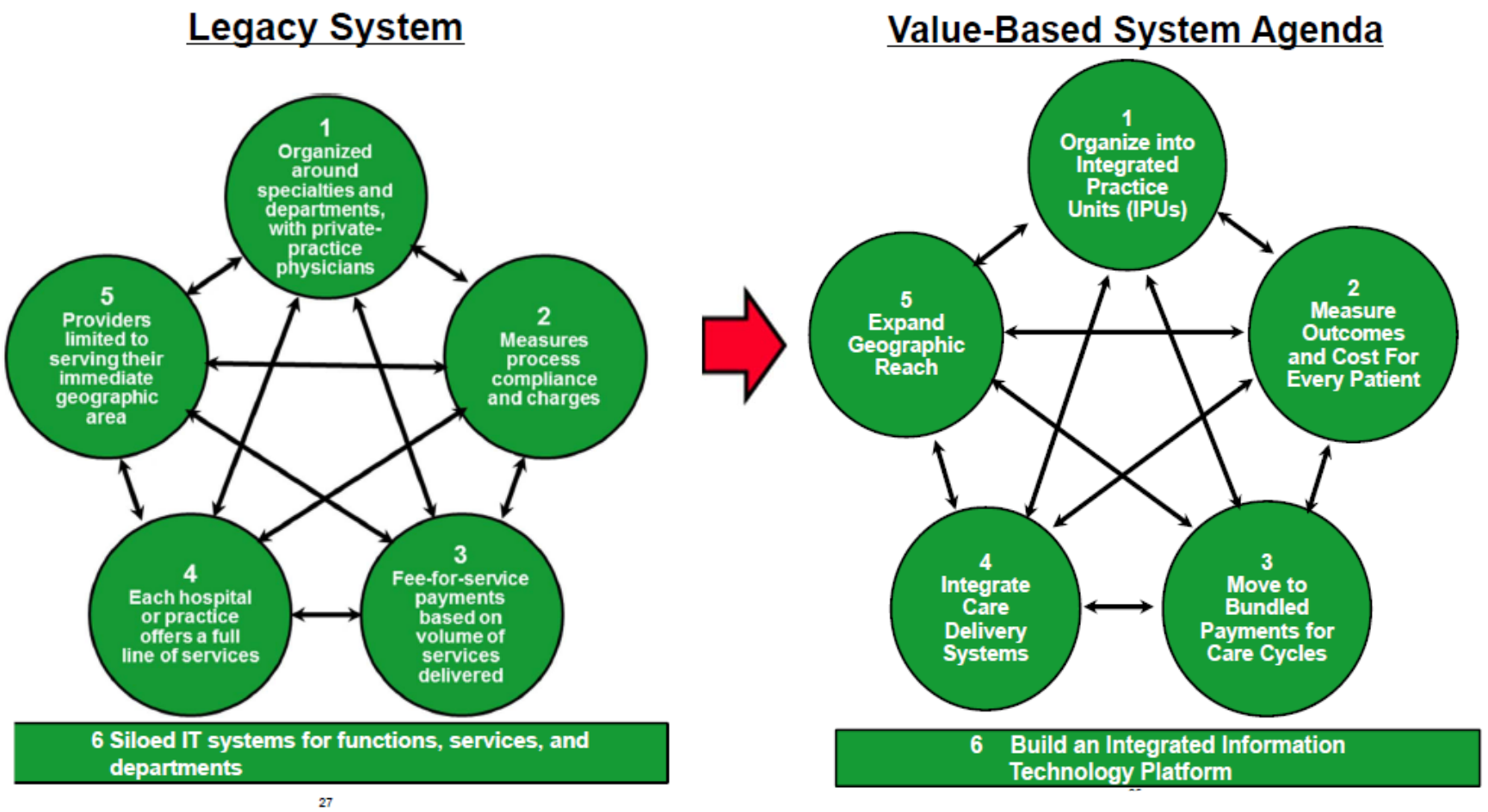
Why We Have Been Stuck

The Legacy System



6 Siloed IT systems for functions, services, and departments

Getting Unstuck



Appendix

Moving to a High-Value Health Care System

1. Make **patient value** the central goal of all reforms
2. Move towards reorganizing care into **Integrated Practice Units** around patient medical conditions
   - Certification standards should require **multidisciplinary teams**, integrated scheduling, and coordinated case management
   - Primary and preventive care should be tailored to serving **distinct patient segments**
3. Eliminate the **separation** between inpatient, outpatient, and rehabilitation care
   - Integrate care across the care cycle, with more care shifting to the **outpatient setting**
   - Reduce **cost-shifting** between care settings by eliminating the different models of reimbursement for inpatient and outpatient care
   - Harness the **power of IT** to enable integrated care delivery

Moving to a High-Value Health Care System

4. Mandate a path to measurement and reporting of **outcomes** for every patient condition
   - Create a **national body** to oversee the development of outcome measures
   - Mandate **publication** of risk-adjusted outcomes
   - Until outcome data is widely available, expand **minimum volume standards**
5. Introduce new cost-accounting standards to measure **costs** at the level of patients and their medical conditions
   - Establish a **national body** to develop common costing standards that provide accurate cost data across providers and allows costs to be measured around the patient
   - Pilot patient-level costing **across care settings** to inform bundled payment design

Moving to a High-Value Health Care System

6. Shift reimbursement to **bundled payments** for the full care cycle
   - Introduce a universal **reimbursement catalog** based on accurate patient-level costing
7. Encourage consolidation of **providers** and provider **service lines**
   - Expand **minimum volume standards** to support excellent outcomes and efficient capacity utilization
8. Develop a strategic plan **by medical condition** and **primary care segment** to foster care integration, introduce outcome measures, pilot patient-level costing, and shift to bundled payments
9. Engage **clinicians** in the value agenda and accept joint responsibility for its success

Creating a Value-Based Health Care Delivery System

Implications for Payors

1. Integrated Practice Units (IPUs)	• Encourage and reward integrated practice unit models by providers
2. Measure Cost and Outcomes	• Encourage or mandate provider outcome reporting through registries by medical condition • Create standards for meaningful provider cost measurement and reporting
3. Move to Bundled Prices	• Design new bundled reimbursement structures for care cycles instead of fees for discrete services • Share information with providers to enable improved outcomes and cost measurement
4. Integrate Across Separate Facilities	• Assist in coordinating patient care across the care cycle and across medical conditions • Direct care to appropriate facilities within provider systems
5. Expand Excellence Across Geography	• Provide advice to patients (and referring physicians) in selecting excellent providers • Create relationships to increase the volume of care delivered by or affiliated with centers of excellence
6. Enabling IT Platform	• Assemble, analyze, manage members' total medical records • Require introduction of compatible medical records systems

Creating a Value-Based Health Care Delivery System

Implications for Government

1. Integrated Practice Units (IPUs)	• Reduce **regulatory obstacles** to care integration across the care cycle
2. Measure Cost and Outcomes	• Create a **national framework of medical condition outcome registries** and a path to universal measurement • Tie reimbursement to **outcome reporting** • Set **accounting standards** for meaningful cost reporting
3. Move to Bundled Prices	• Create a **bundled pricing framework** and rollout schedule
4. Integrate Across Separate Facilities	• Introduce **minimum volume standards** by medical condition
5. Expand Excellence Across Geography	• Encourage rural providers and providers who fall below minimum volume standards to **affiliate** with qualifying centers of excellence for more complex care
6. Enabling IT Platform	• Set **standards** for common data definitions, interoperability, and the ability to easily extract outcome, process, and costing measures for qualifying HIT systems