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.

Redefining Health Care Delivery

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

> Value: Patient health outcomes per dollar spent

- 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 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 payment models

- Care pathways, safety program, disease management and other **overlays** to the current structure are beneficial, but not sufficient

Principles of Value-Based Health Care Delivery

- The central goal in health care must be **value for patients**, not cost containment, convenience, or customer service

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

  - Outcomes are the **full set of patient health results** over the care cycle
  - Costs are the **total costs of care for a patient's condition** over the care cycle

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
- Right diagnosis	- Fewer failed therapies
- Right treatment to the right patient	- Faster recovery
- Early and timely treatment	- More complete recovery
- Treatment earlier in the causal chain of disease	- Greater functionality and less need for long term care
- Rapid cycle time of diagnosis and treatment	- Less disability
- Less invasive treatment methods	- Fewer recurrences, relapses, flare ups, or acute episodes
	- Slower disease progression
	- 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 Organization

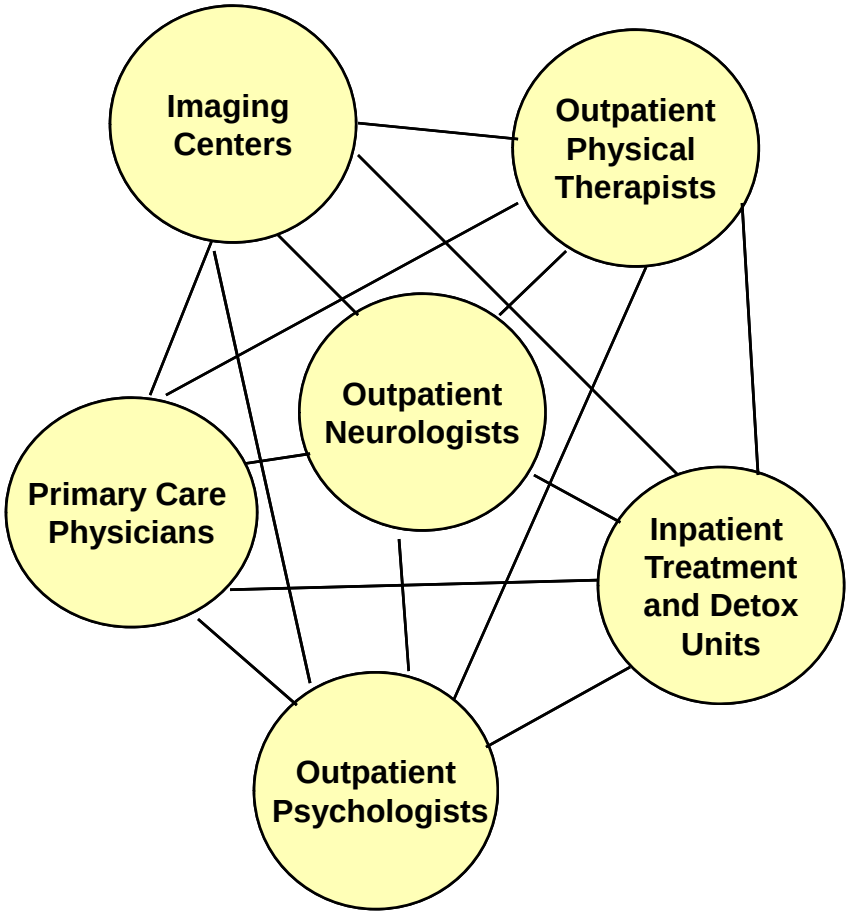
The Strategic Agenda

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

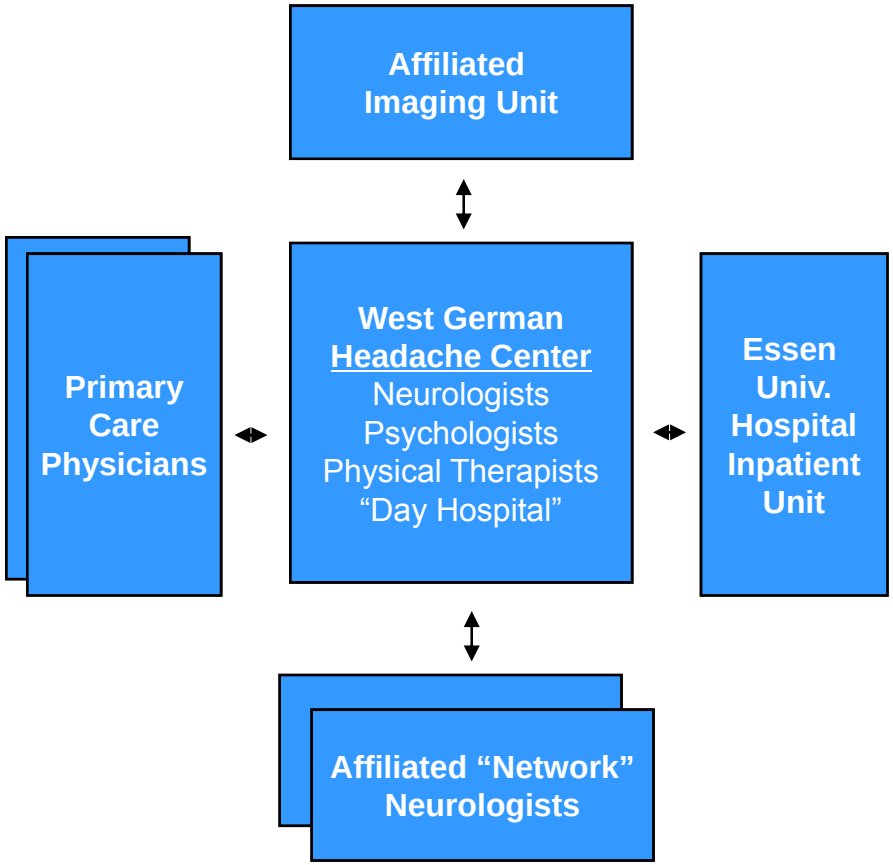
1. Organizing Around Patient Medical Conditions

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

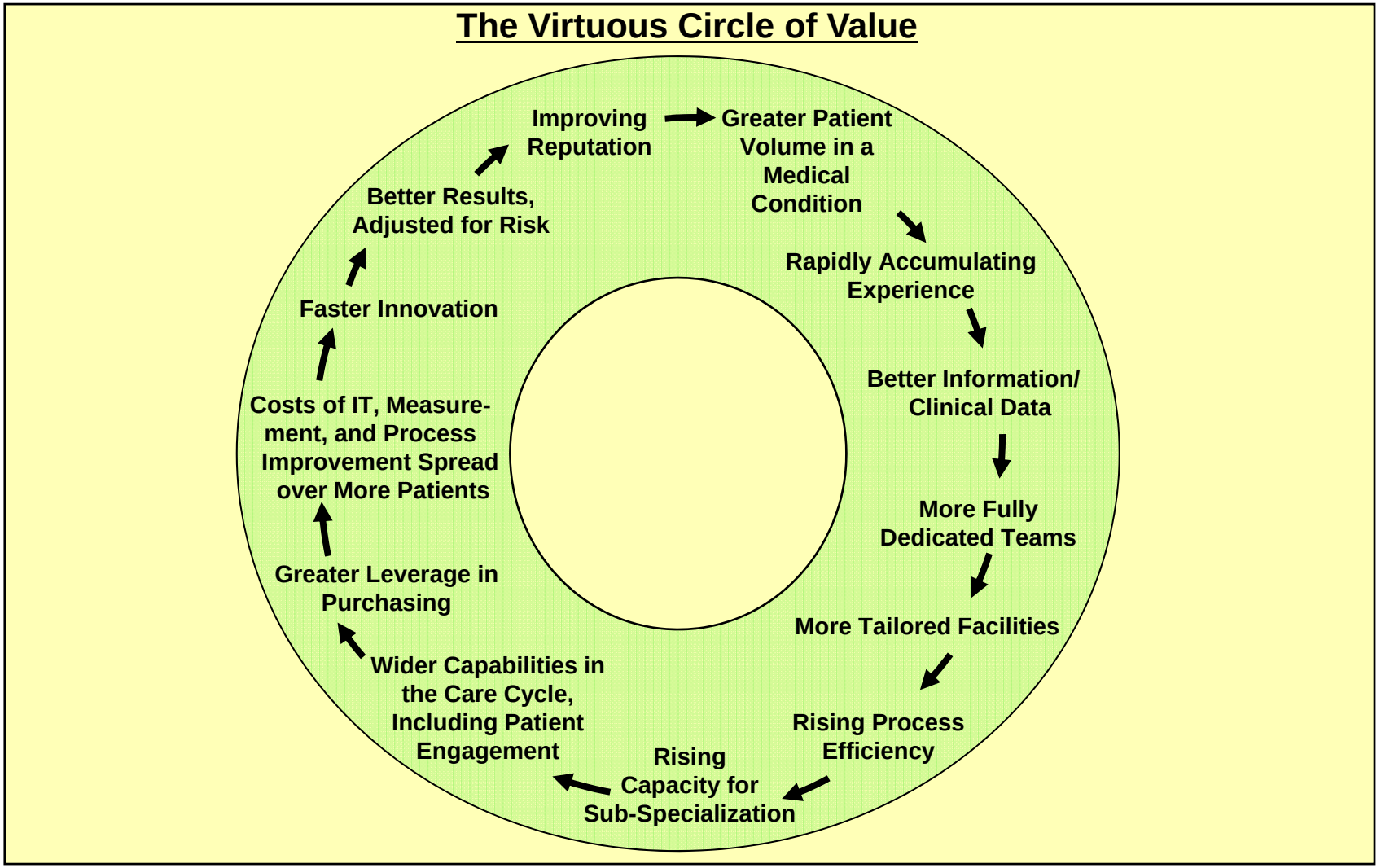
	MONITORING/ PREVENTING	DIAGNOSING	PREPARING	INTERVENING	RECOVERING/ REHABING	MONITORING/ MANAGING
INFORMING AND ENGAGING	• Advice on self screening • Consultations on risk factors	• Counseling patient and family on the diagnostic process and the diagnosis	• Explaining patient treatment options/ shared decision making • Patient and family psychological counseling	• Counseling on the treatment process • Education on managing side effects and avoiding complications • Achieving compliance	• Counseling on rehabilitation options, process • Achieving compliance • Psychological counseling	• Counseling on long term risk management • Achieving compliance
MEASURING	• Self exams • Mammograms	• Mammograms • Ultrasound • MRI • Labs (CBC, etc.) • Biopsy • BRACA 1, 2… • CT • Bone Scans	• Labs	• Procedure-specific measurements	• Range of movement • Side effects measurement	• MRI, CT • Recurring mammograms (every six months for the first 3 years)
ACCESSING THE PATIENT	• Office visits • Mammography • Lab visits	• Office visits • Lab visits • High risk clinic visits	• Office visits • Hospital visits • Lab visits	• Hospital stays • Visits to outpatient radiation or chemo-therapy units • Pharmacy visits	• Office visits • Rehabilitation facility visits • Pharmacy visits	• Office visits • Lab visits • Mammographic labs and imaging center visits
	• Medical history • **Control of risk factors (obesity, high fat diet)** • Genetic screening • Clinical exams • Monitoring for lumps	• Medical history • Determining the specific nature of the disease (mammograms, pathology, biopsy results) • Genetic evaluation • Labs	• Choosing a treatment plan • Surgery prep (anesthetic risk assessment, EKG) • Plastic or onco-plastic surgery evaluation • Neo-adjuvant chemotherapy	• Surgery (breast preservation or mastectomy, oncoplastic alternative) • Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)	• In-hospital and outpatient wound healing • Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphedema and chronic fatigue) • Physical therapy	• Periodic mammography • Other imaging • Follow-up clinical exams • Treatment for any continued or later onset side effects or complications

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 **measure** outcomes, processes, and costs as a **team** using a common **information platform**
10. Accepting **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

Fragmentation of Services

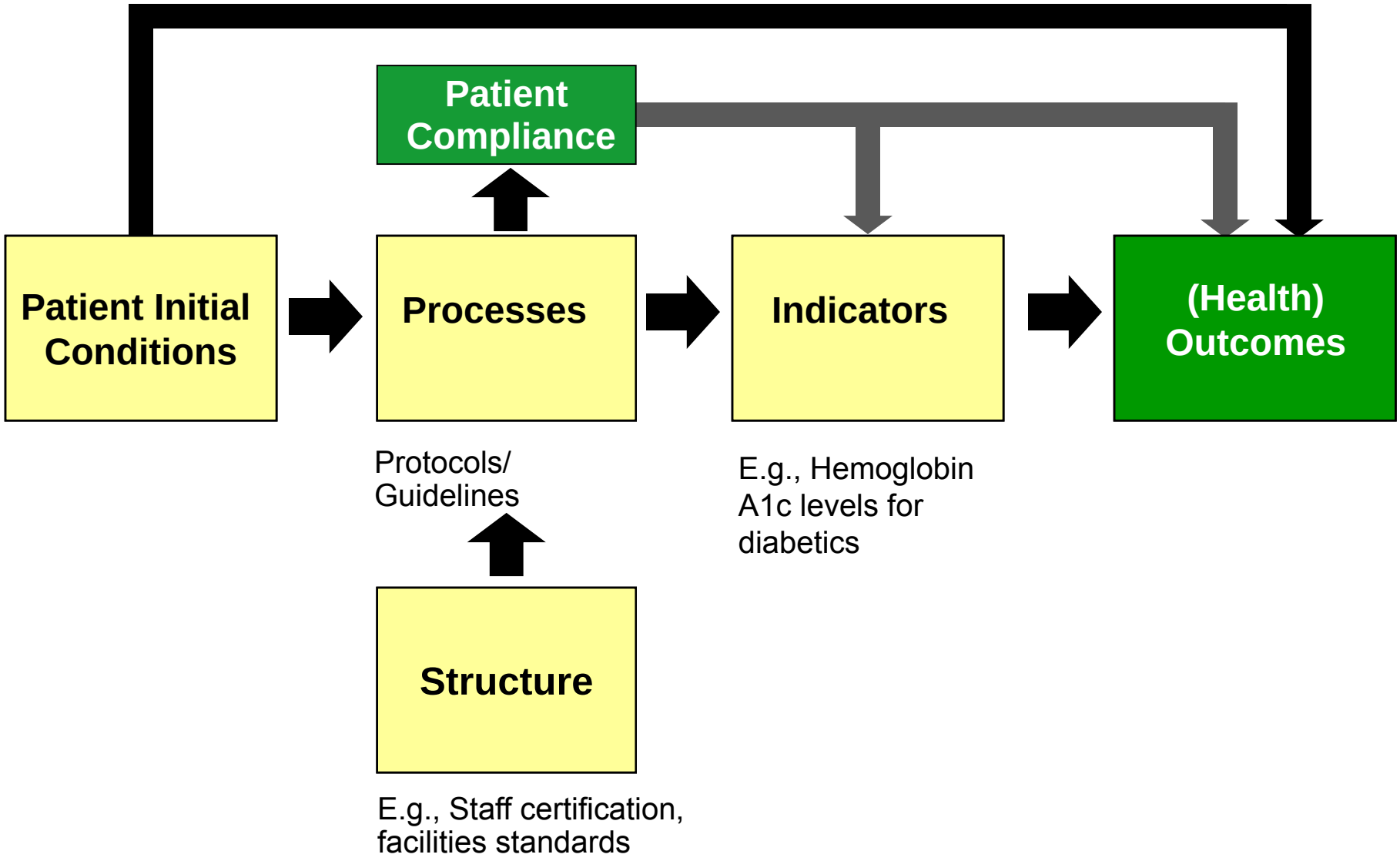
Hospital Services in Sweden

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

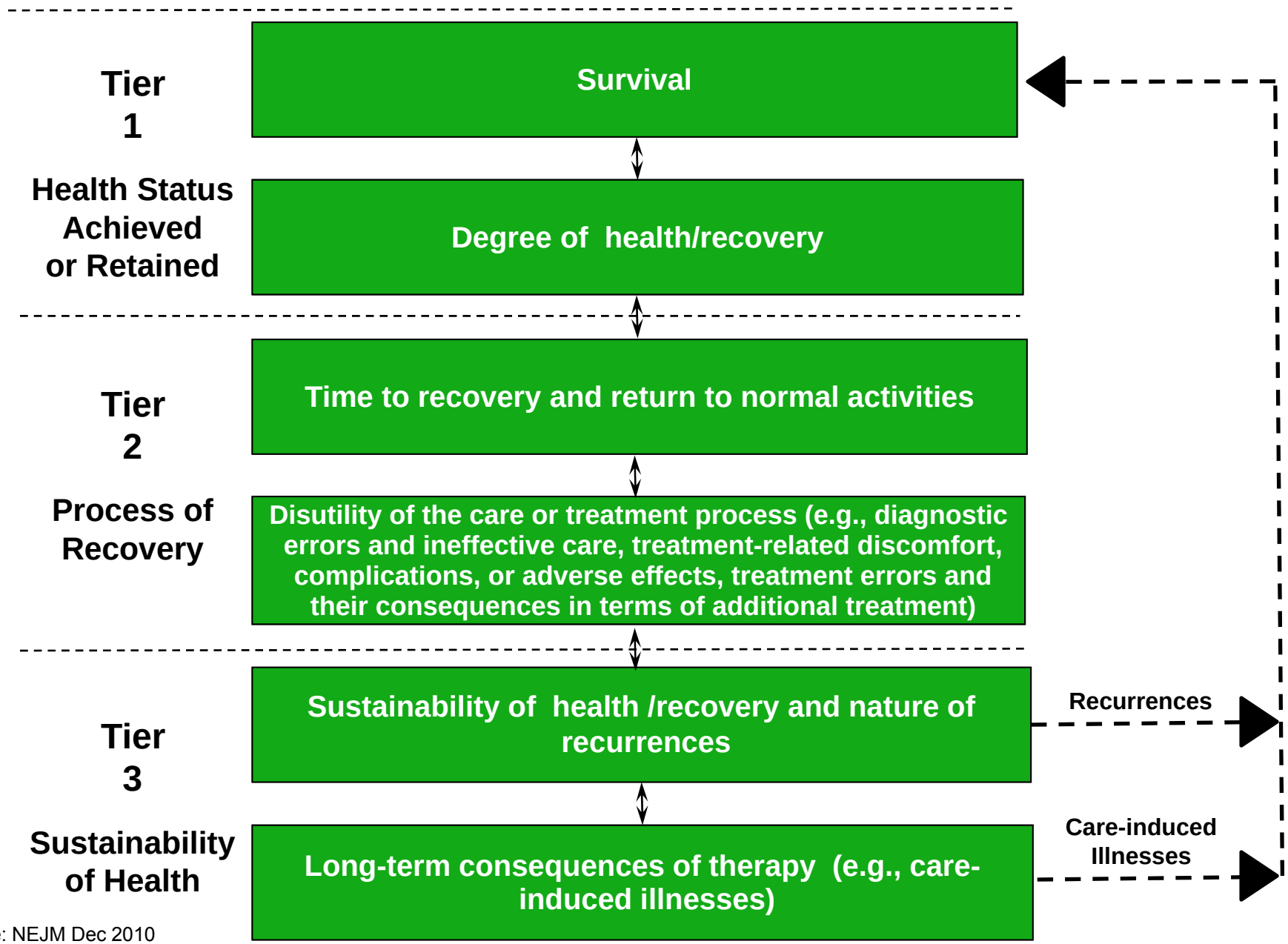
Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

- **Minimum volume standards** are an interim step to drive service consolidation until comprehensive outcome information is available

2. Measuring Outcomes and Cost for Every Patient



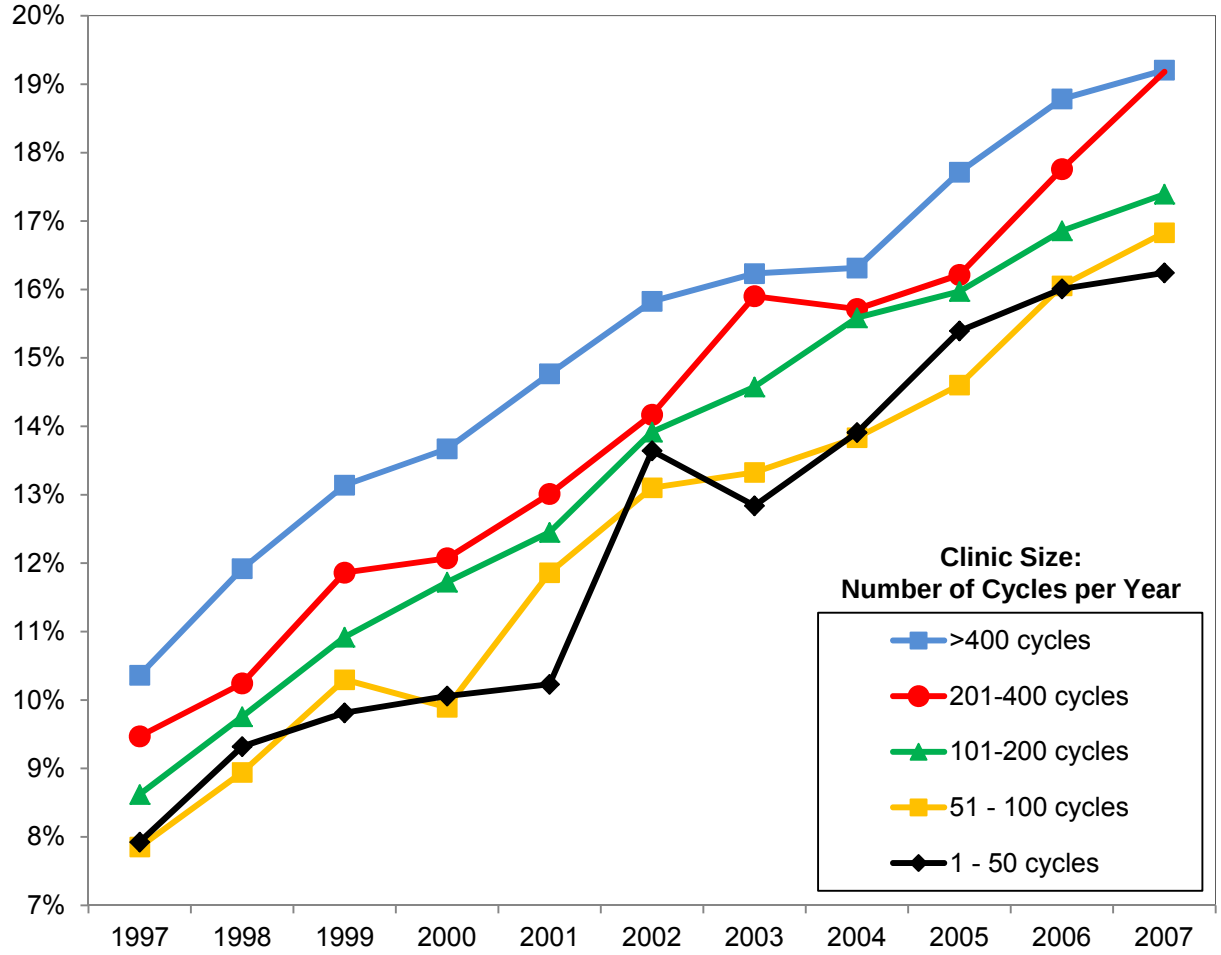
The Outcome Measures Hierarchy



Source: NEJM Dec 2010

In-vitro Fertilization
Success Rates Over Time

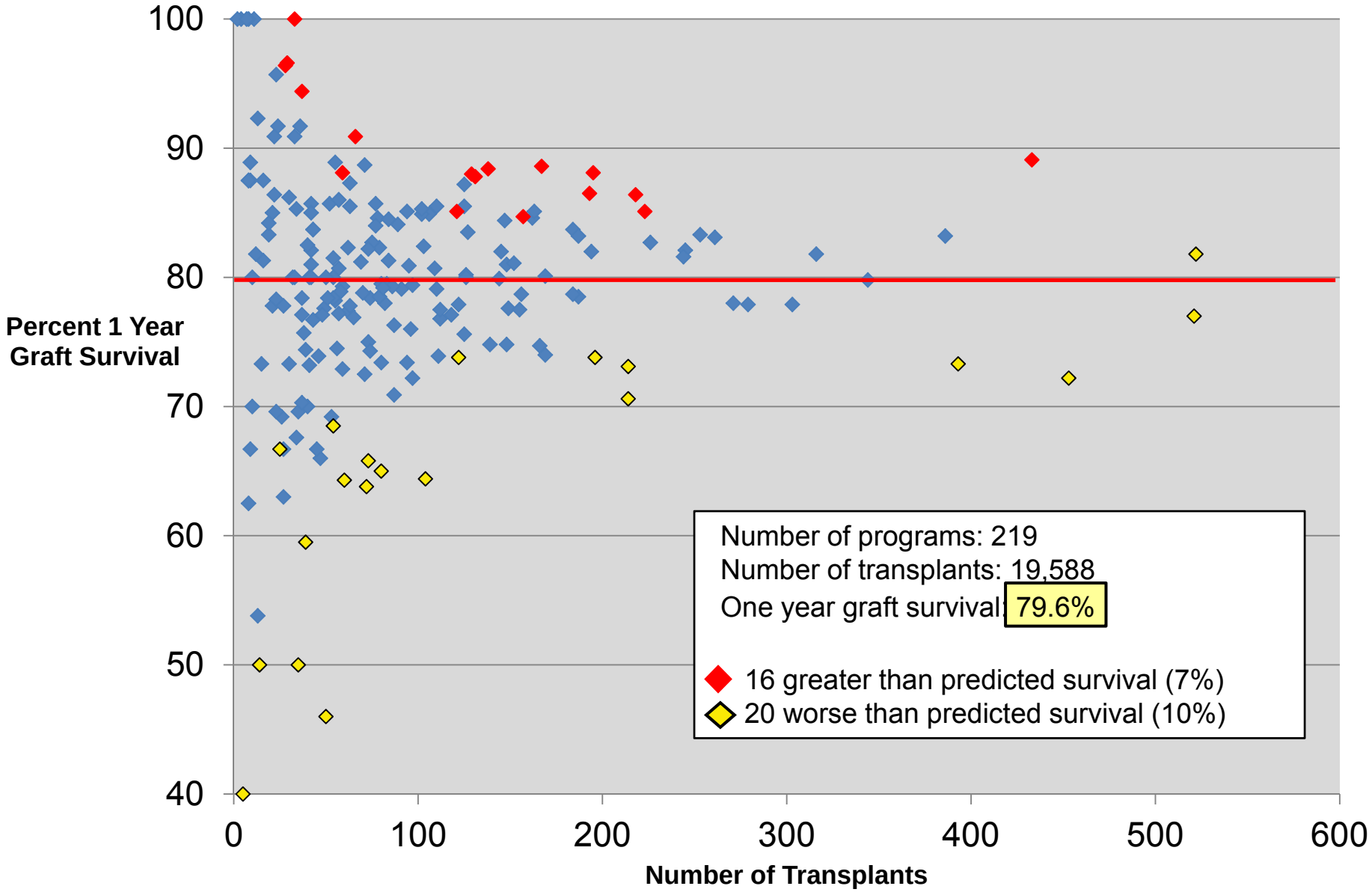
Percent Live Births per Fresh, Non-Donor Embryo Transferred by Clinic Size
Women Under 38 Years of Age, 1997-2007



Source: Michael Porter, Saquib Rahim, Benjamin Tsai, *Invitro Fertilization: Outcomes Measurement*. Harvard Business School Press, 2008
Data: Center for Disease Control and Prevention. "Annual ART Success Rates Reports." <http://www.cdc.gov/art/ARTReports.htm>, Dec. 12, 2010.

Adult Kidney Transplant Outcomes

U.S. Centers, 1987-1989



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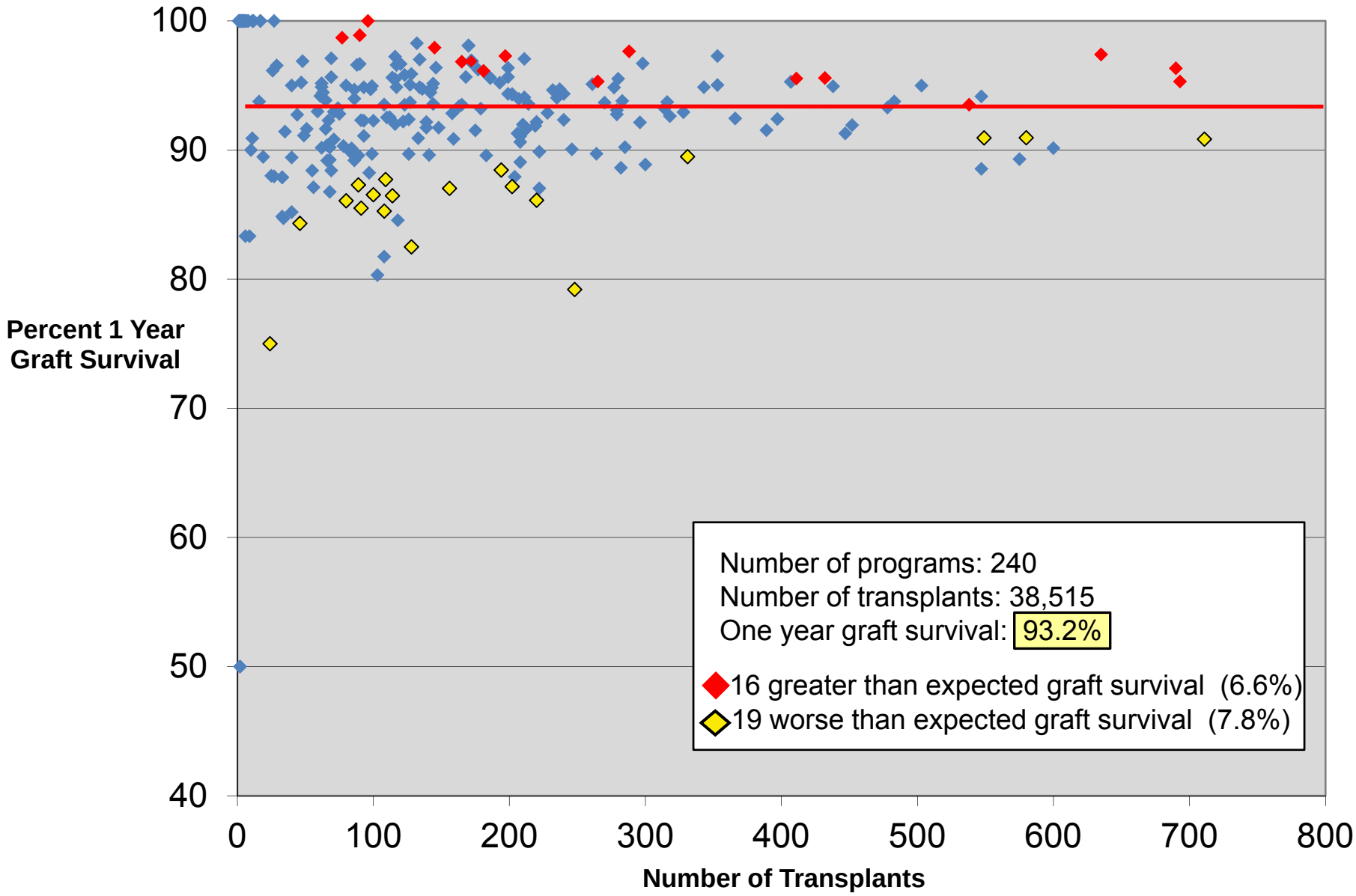
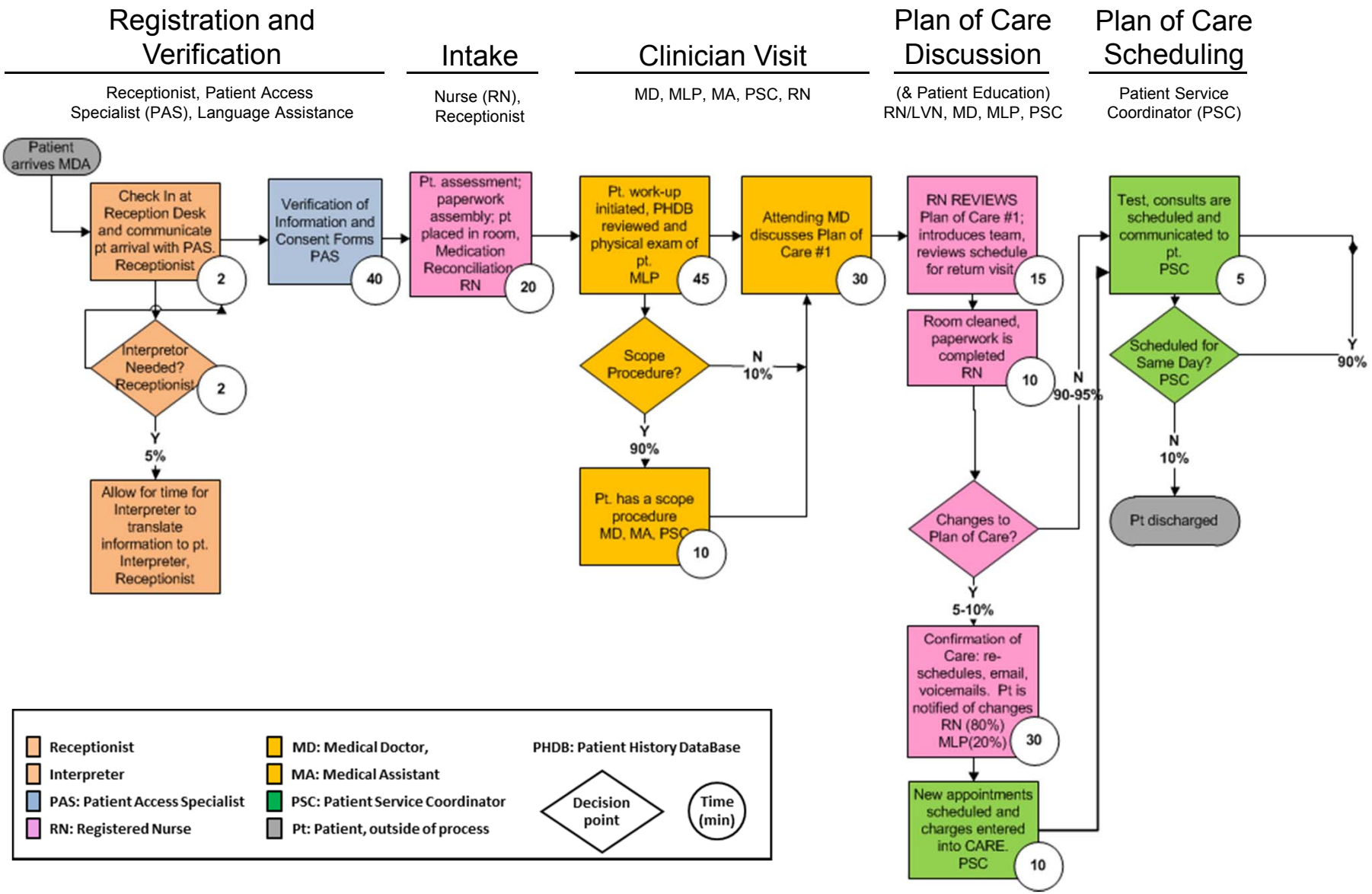


Measuring the Cost of Care Delivery: Principles

- Cost should be measured around the **patient**
- Cost depends on the **actual use of resources** involved in a patient's care
- The only way to properly measure cost per patient is to track the **time devoted to each patient** by these resources (personnel, facilities, and support services) and their **capacity cost**.

Mapping Resource Utilization

MD Anderson Cancer Center



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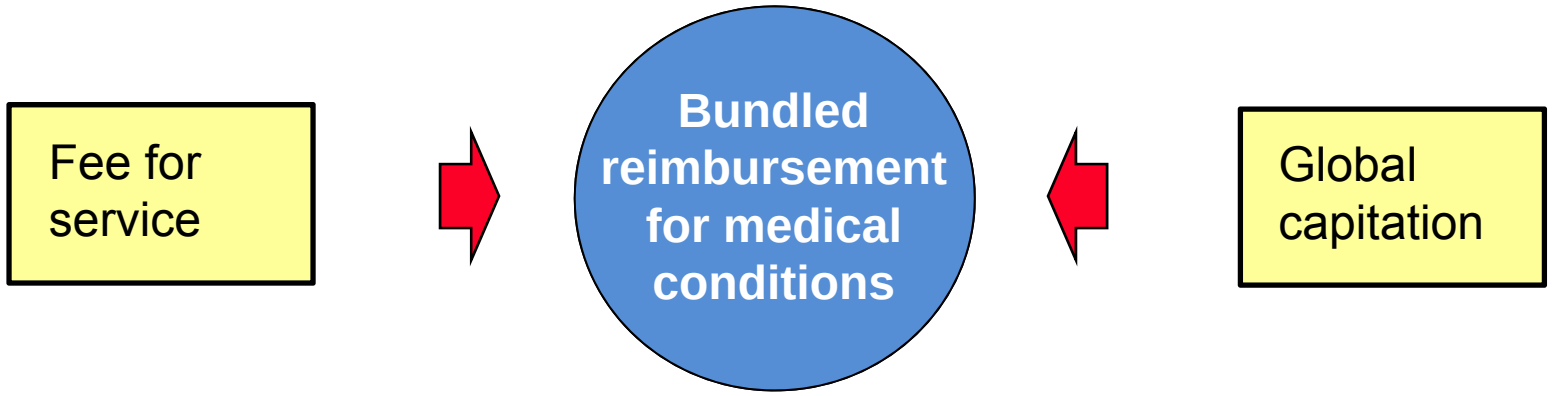
- Cost should be aggregated at the **medical condition level** for each patient **over the full cycle of care**, not for departments, services, or line items
- Cost measurement should be combined with **outcome measurement** to inform process improvement and cost reduction
  - e.g. Reduce high cost activities that **do not contribute** to superior outcomes
  - Optimize the value of the **entire cycle of care**, versus seek to minimize the cost of individual activities
  - **Speed up** cycle time

- Combining costs and outcomes **transforms the discussion** about care improvement

3. Setting Bundled Prices for Care Cycles



Bundled Price

- A single price covering the **full care cycle for an acute medical condition**
- Time-based reimbursement for full care of a **chronic condition**
- Time-based reimbursement for **primary/preventive care for a defined patient population**

Bundled Payment in Practice
Hip and Knee Replacement in Stockholm, Sweden

- **Components** of the bundle

- Pre-op evaluation - Lab tests - 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 - Any additional surgery to the joint within 2 years - If post-op infection requiring antibiotics occurs, guarantee extends to 5 years

- 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
- Provider participation is **voluntary**. All providers are participating

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

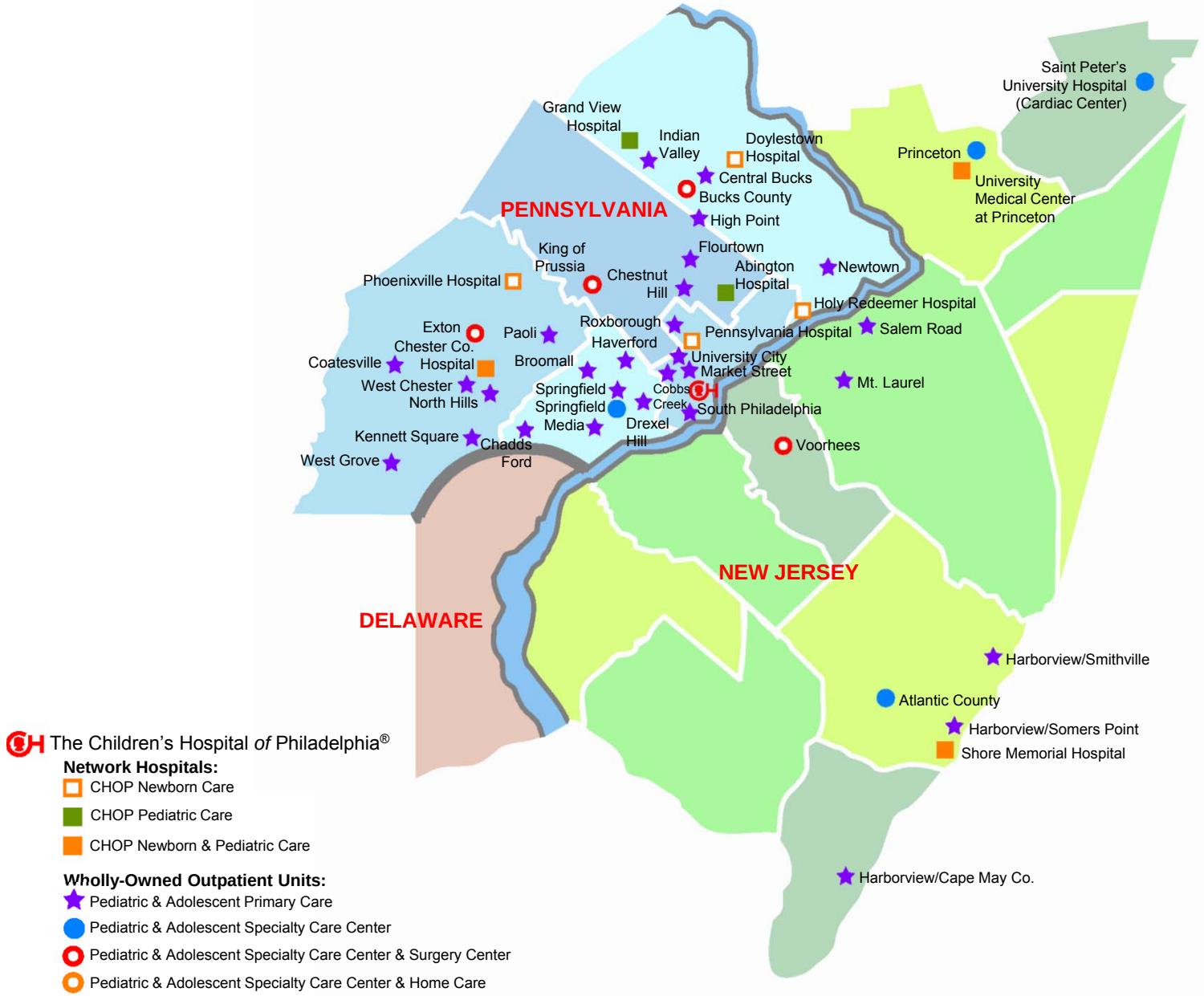
Creating a Bundled Pricing System

- Defining the Bundle
  - **Scope** of the medical condition and care cycle duration
  - **Services** included, but retaining flexibility on methods
  - **Complications** and **comorbidities** included/excluded
- Pricing the Bundle: Key Choices
  - **Level** of bundled price vs. sum of current charges
  - Price **stability** commitment
  - Extent of **severity/risk** adjustment
  - Extent of "**guarantees**" by providers
  - Mechanism for handling **outliers** and **unanticipated** complications
  - Bonuses for **excellent outcomes**?
- Implementing the Bundle
  - Internal **distribution of the payment** among providers (dividing the pie)
  - **Billing and claims** processes
  - **Outcome measurement** to minimize incentives to limit value-enhancing services

- **Accurate costing** at the medical condition level is a prerequisite for negotiating bundled prices

4. Integrating Care Delivery Across Separate Facilities

Children's Hospital of Philadelphia Care Network



Integrating a Provider System

- Choosing the **overall scope of service lines** in which a provider can achieve excellence
- **Rationalizing service lines/ IPUs** across facilities to improve volume, avoid duplication, and deepen teams
- Offering specific services at the **appropriate facility**
  - E.g. acuity level, cost level, need for convenience
- Clinically integrating care **across facilities**, within an IPU structure
  - Better **connecting** preventive/primary care units to specialty IPUs
  - **Widening** and **integrating** the care cycle

- There are major value improvements from **moving care out** of heavily resourced hospital, tertiary and quaternary facilities

5. Expanding Excellent IPUs Across Geography

Leading Provider

- Grow **areas of excellence across locations**:
  - Satellite pre- and post-acute services
  - Affiliations with community providers
  - New IPU hubs

  NOT:
  - Widening the service line locally
  - Growing through new broad line, stand-alone units

Community Provider

- **Affiliate with excellent providers** in medical conditions and patient populations where there is insufficient volume or expertise to achieve superior value
  - New roles for rural and community hospitals

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 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**

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Moving to a Value-Based System

Implications for Government

1. **Organize into Integrated Practice Units (IPUs) Around Patient Medical Conditions and Patient Populations**
   - Provider certification based on **care integration measures** (e.g. multidisciplinary teams, dedicated facilities)
   - Reduce **regulatory obstacles to care integration** (e.g. Stark Laws, corporate practice of medicine)
2. **Establish Universal Measurement of Outcomes and Cost for Every Patient**
   - Roll out national framework for **mandatory outcome measurement** by medical condition
   - Require provider reporting of **patient volume by medical condition** as an interim step
   - **Reset reimbursement levels** based on modern cost accounting principles
3. **Move to Bundled Prices for Care Cycles**
   - **Expand DRG** care episodes and set guidelines for bundled payment reimbursement requirements
4. **Integrate Care Delivery Across Separate Facilities**
   - Introduce **minimum volume standards** by medical condition
5. **Expand Excellent IPUs Across Geography**
   - Encourage **affiliations** between small or rural providers and qualifying centers of excellence
6. **Create an Enabling Information Technology Platform**
   - Require common **data definitions**, **interoperability**, and **the ability to easily extract** outcome, process, and costing measures by all HIT systems

For additional information on

Value-Based Health Care Delivery:

www.isc.hbs.edu