Value-Based Health Care Delivery: Creating an Action-Research Agenda

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2014 Faculty Research Symposium

May 22, 2014

Timeline

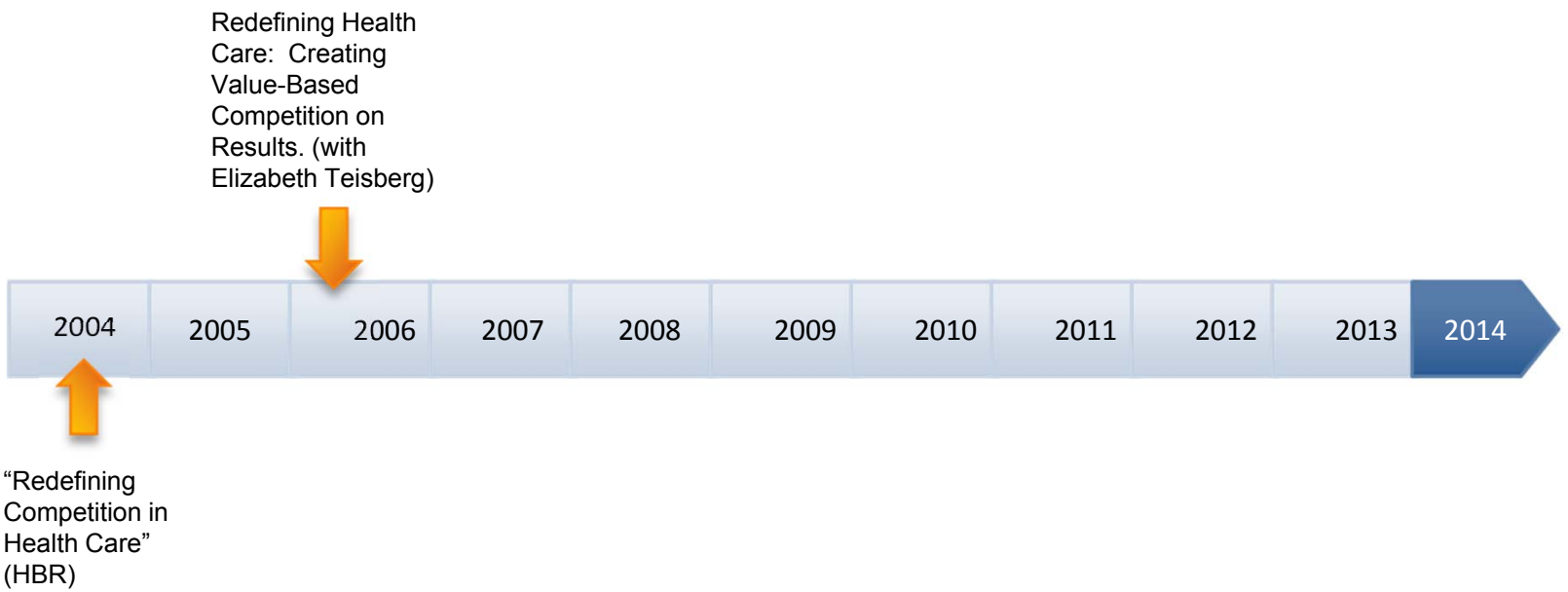
"Redefining Competition in Health Care" (HBR)

Competition in U.S. Health Care

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

- Competition on the wrong things leads to a **zero-sum competition** with no or negative value

Timeline



Solving the Health Care Problem

- The core issue in health care is **value for patients**

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

- 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

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 complete cycle of care
  - Outcomes are the **full set of health results for a patient's** complete 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

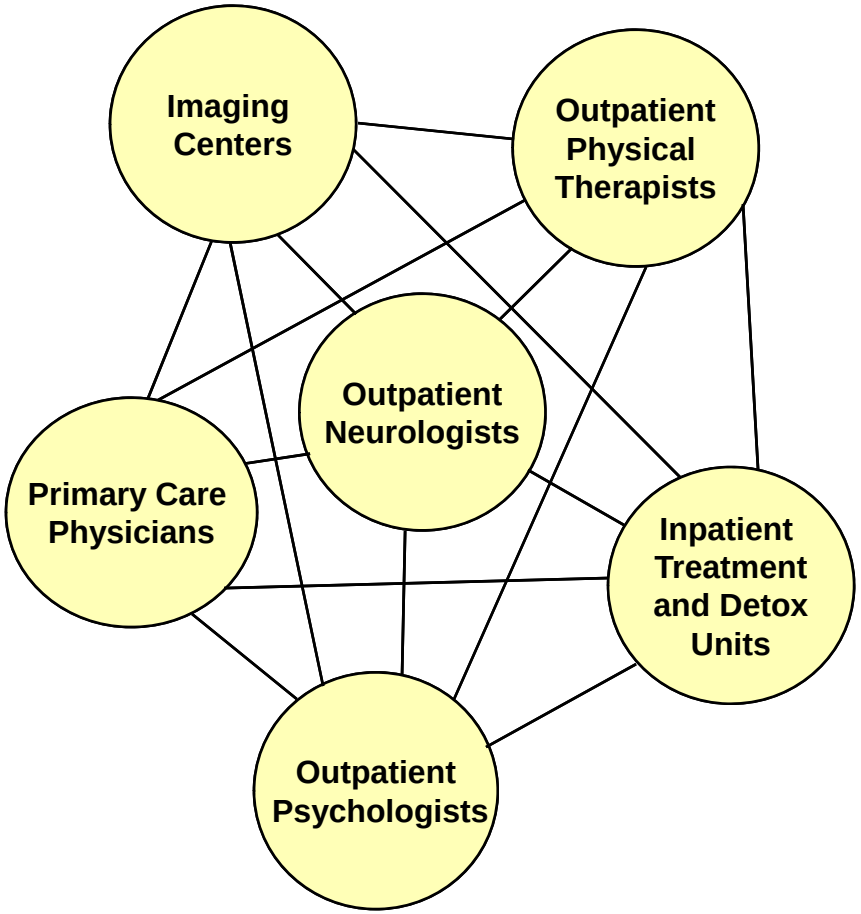
1. Organize Care into Integrated Practice Units (IPUs) around Patient Medical Conditions
   - For primary and preventive care, organize to serve distinct patient segments
2. Measure Outcomes and Costs for Every Patient
3. Move to Bundled Payments for Care Cycles
4. Integrate Care Delivery Systems
5.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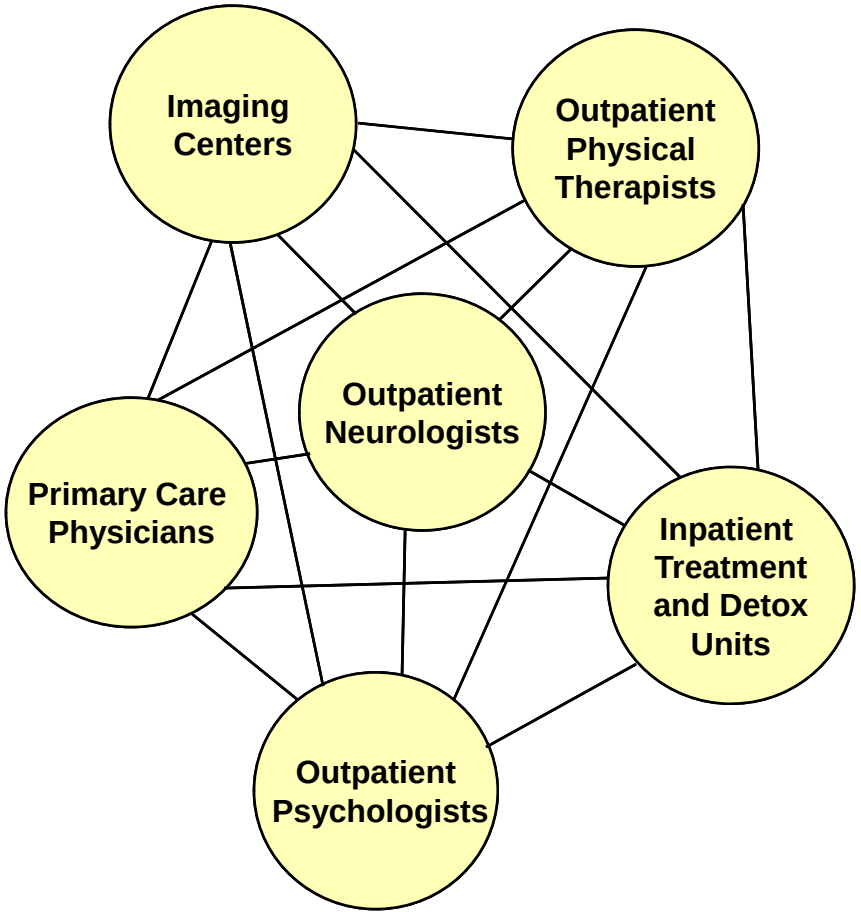
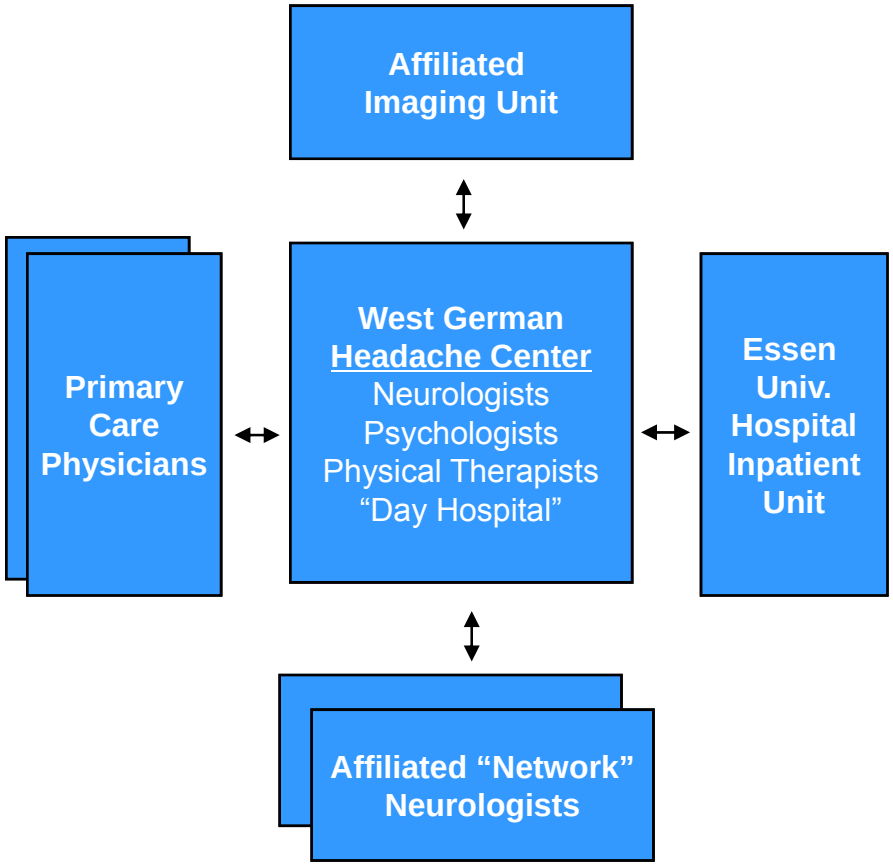


New Model:
Organize into Integrated Practice Units (IPUs)



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

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

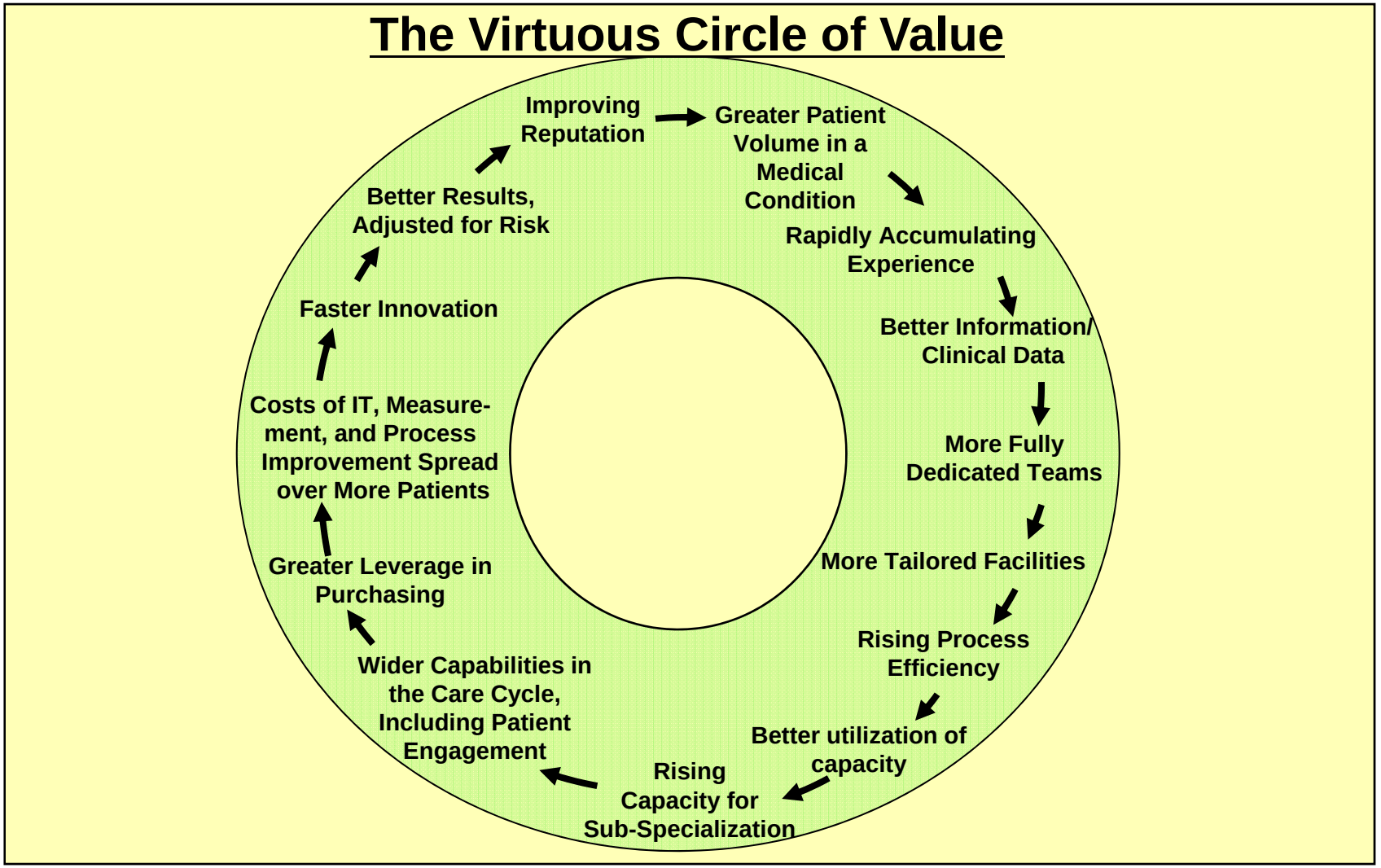
Acute Knee-Osteoarthritis Requiring Replacement

	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

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

The Role of Volume in Value Creation

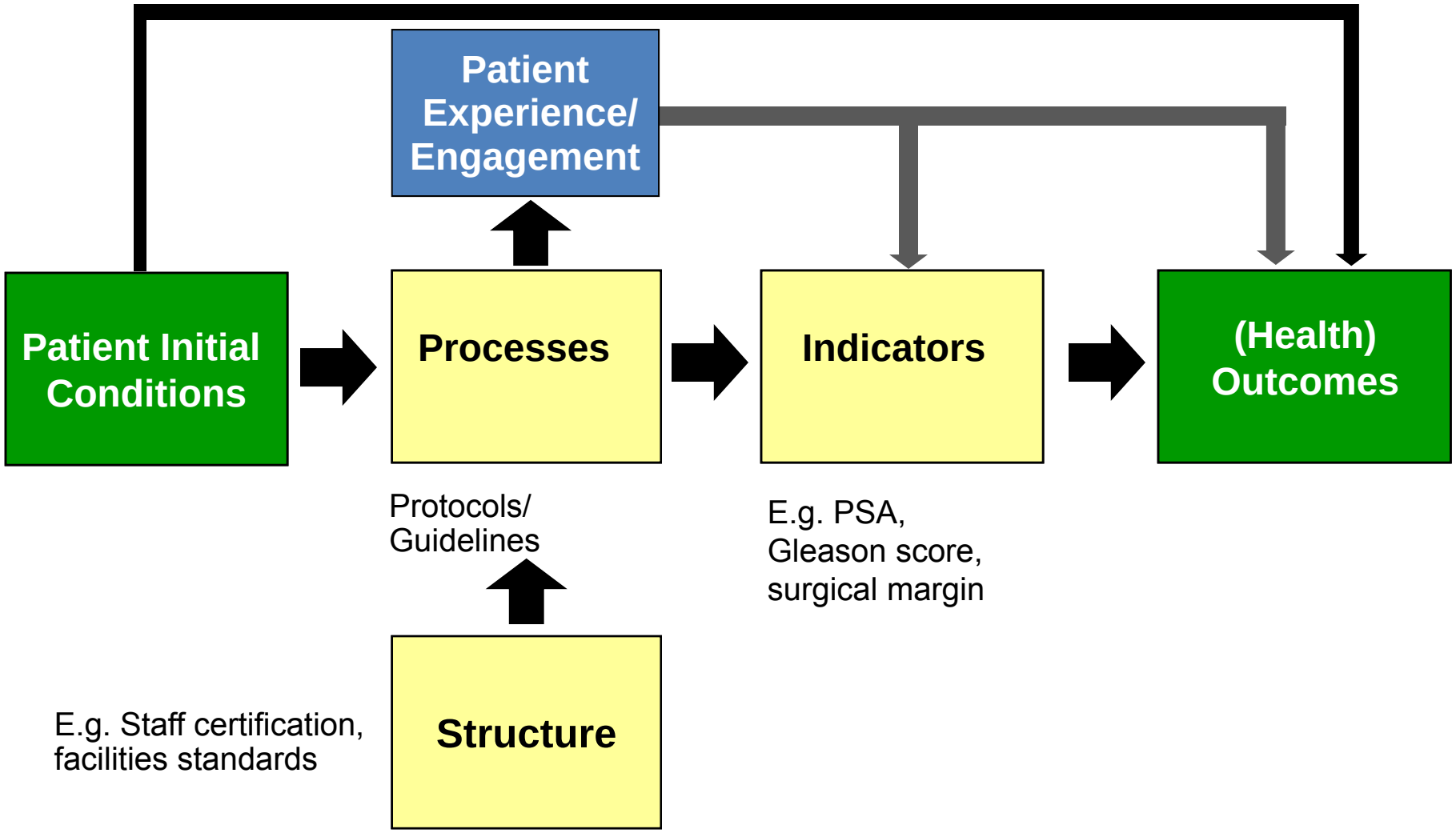
Fragmentation of Hospital Services in Sweden

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

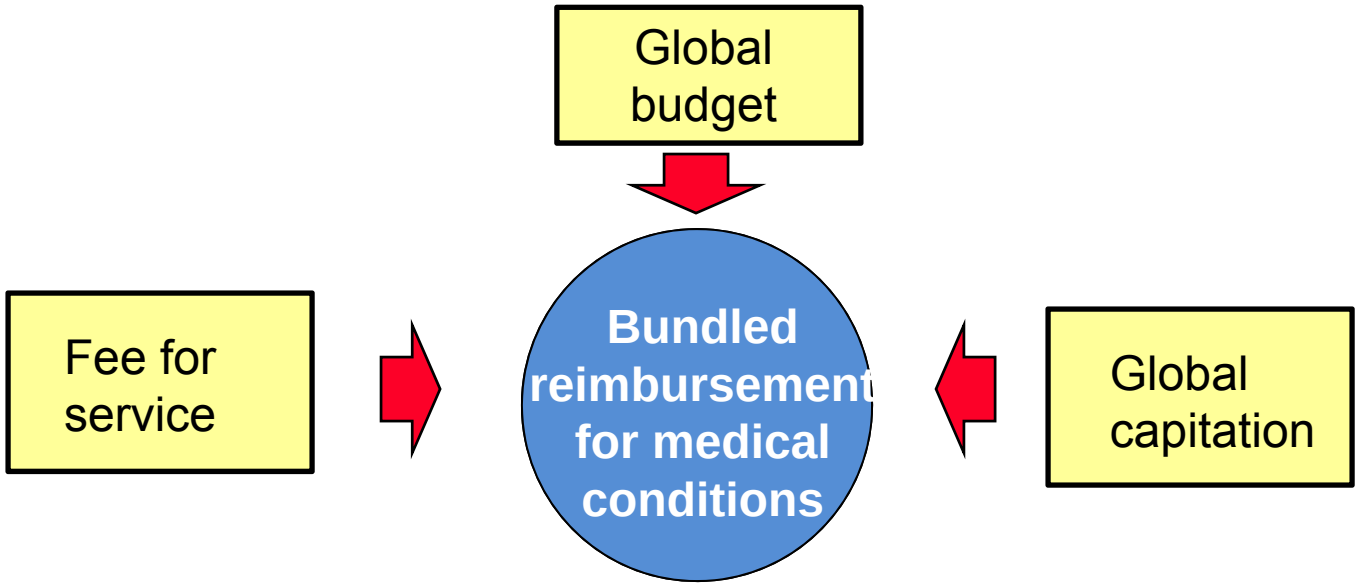
Source: Compiled from The National Board of Health and Welfare Statistical Databases – DRG Statistics, Accessed April 2, 2009.

2. Measure Outcomes and Costs for Every Patient

The Measurement Landscape



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**

4. Integrate Care Delivery Systems
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

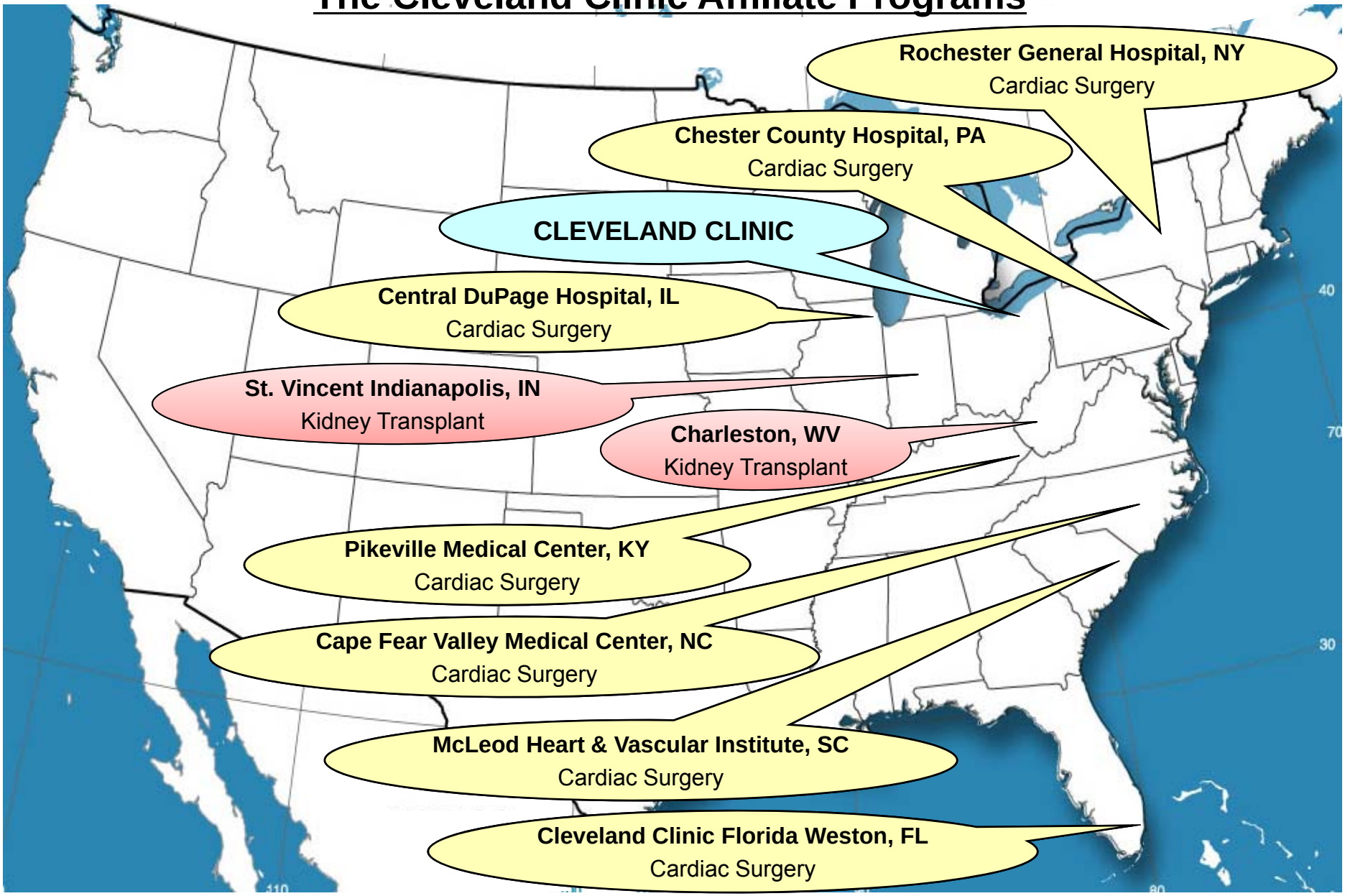
3. Choose the **right location for each service** based on medical condition, acuity level, resource intensity, cost level and need for convenience

   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

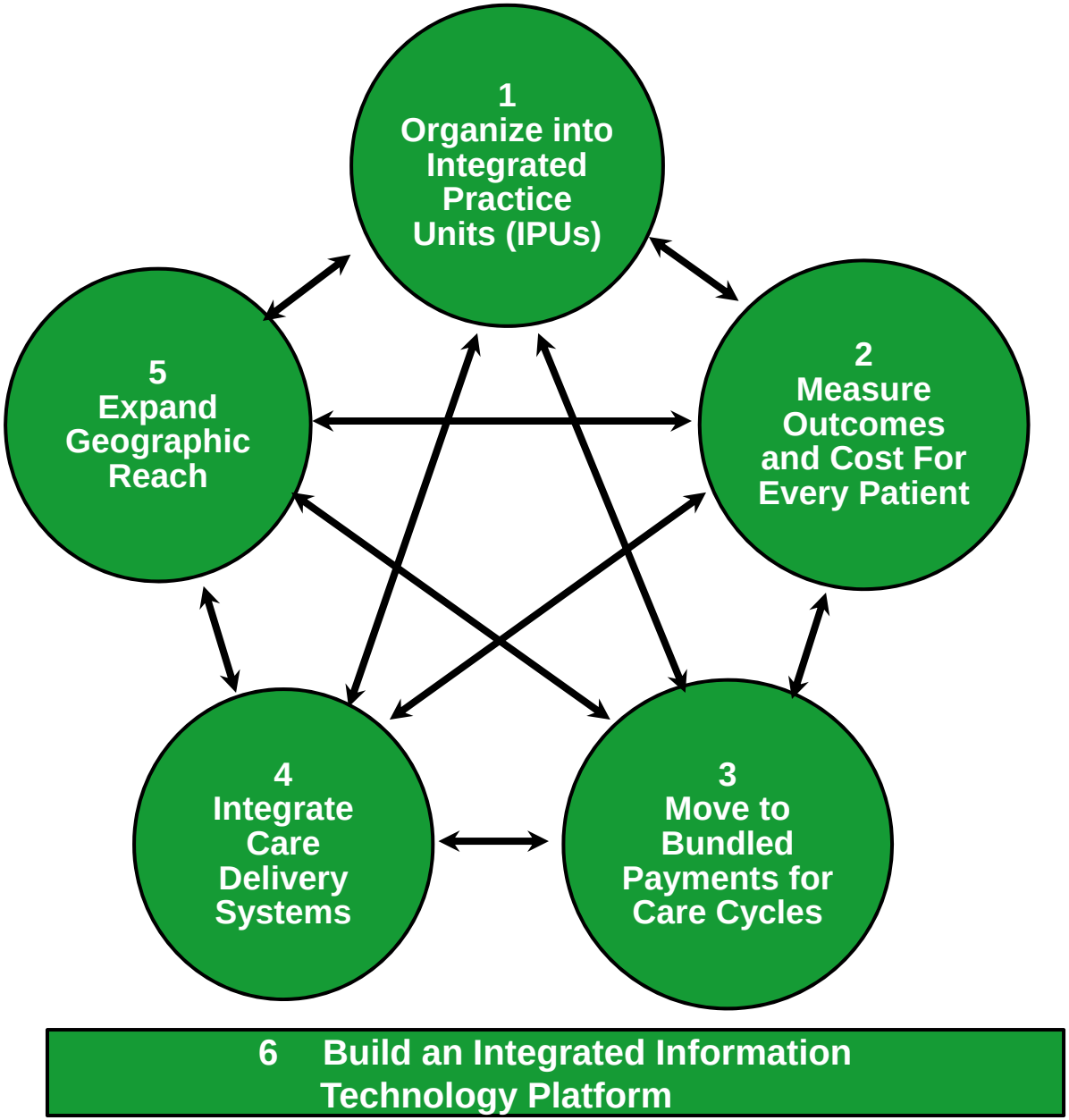


6. Build an Enabling Integrated IT Platform

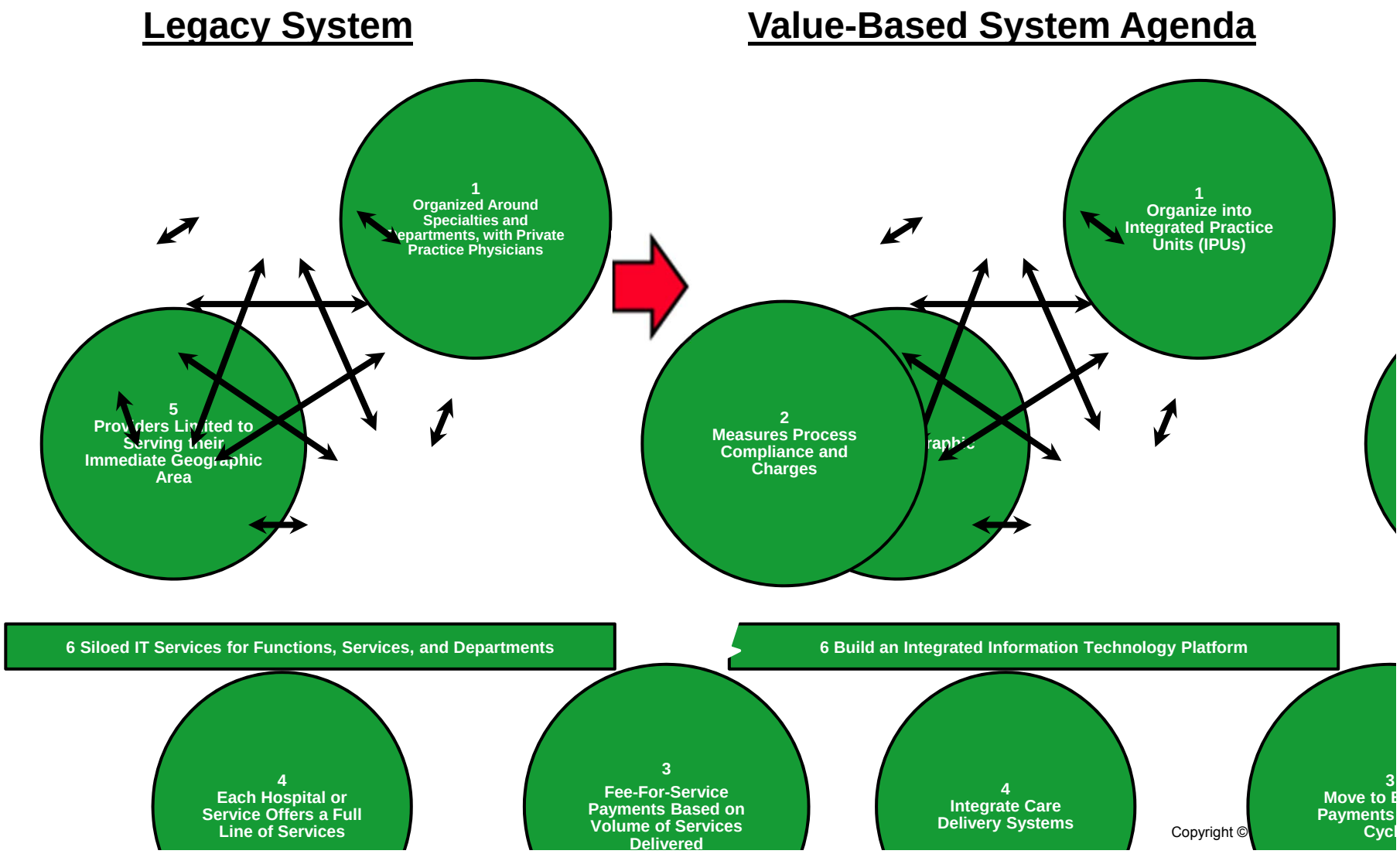
Utilize information technology to enable **restructuring of care delivery** and **measuring results**, rather than treating it as a solution itself

- 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**

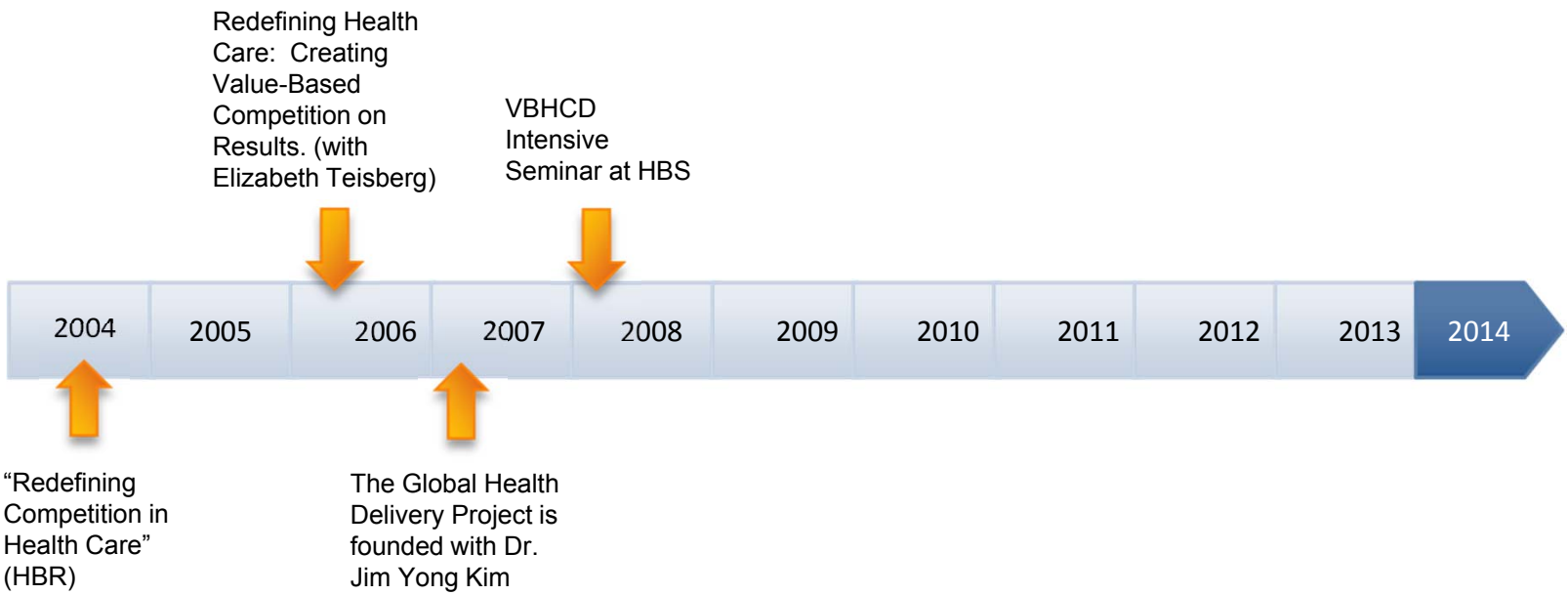
A Mutually Reinforcing Strategic Agenda



Getting Unstuck



Timeline



Value Based Health Care Case Studies

- MD Anderson Cancer Center: Interdisciplinary Cancer Care (Head and Neck Cancer, Endocrine Cancer)
- The West German Headache Center: Integrated Migraine Care (Migraine)
- Commonwealth Care Alliance: Elderly and Disabled Care (Primary/ Preventative Care)
- Ledina Lushko: Navigating Health Care Delivery (Adrenal Cortical Carcinoma)
- The Joslin Diabetes Center (Diabetes)
- Great Western Hospital: High-Risk Pregnancy Care (High-Risk Pregnancy)
- Brigham and Women's Shapiro Cardiovascular Center (Cardiovascular Care)
- Martini Klinik: Prostate Cancer Care (Prostate Cancer)
- Schon Klinik Eating Disorder Care (Eating Disorders)
- Dartmouth-Hitchcock Medical Center: Spine Care (Spine Care)
- Gastroenterology Care at Sweden's Highland Hospital (Inflammatory Bowel Disease)
- Boston Children's Hospital TDABC (Plastic, Oral and Orthopedic Surgery)
- Schon Klinik: Measuring Cost and Value (Total Knee Replacement)
- UCLA: Kidney Transplantation (ESRD, Kidney Transplantation)
- In-Vitro Fertilization: Outcomes Measurement (Infertility, IVF)
- Sun Yat-Sen Cancer Center: Breast Cancer Care in Taiwan (Breast Cancer)
- Global Health Partner: Obesity Care (Obesity, Bariatric Surgery)
- The Cleveland Clinic: Growth Strategy (Health System)
- ThedaCare: System Strategy (Health System)
- Children's Hospital of Philadelphia: Network Strategy (Health System)
- Reconfiguring Stroke Care in North Central London (Stroke)
- Pitney Bowes: Employer Health Strategy (Primary/ Preventative Care)

Developing the Curriculum: Selected Course Offerings to Date

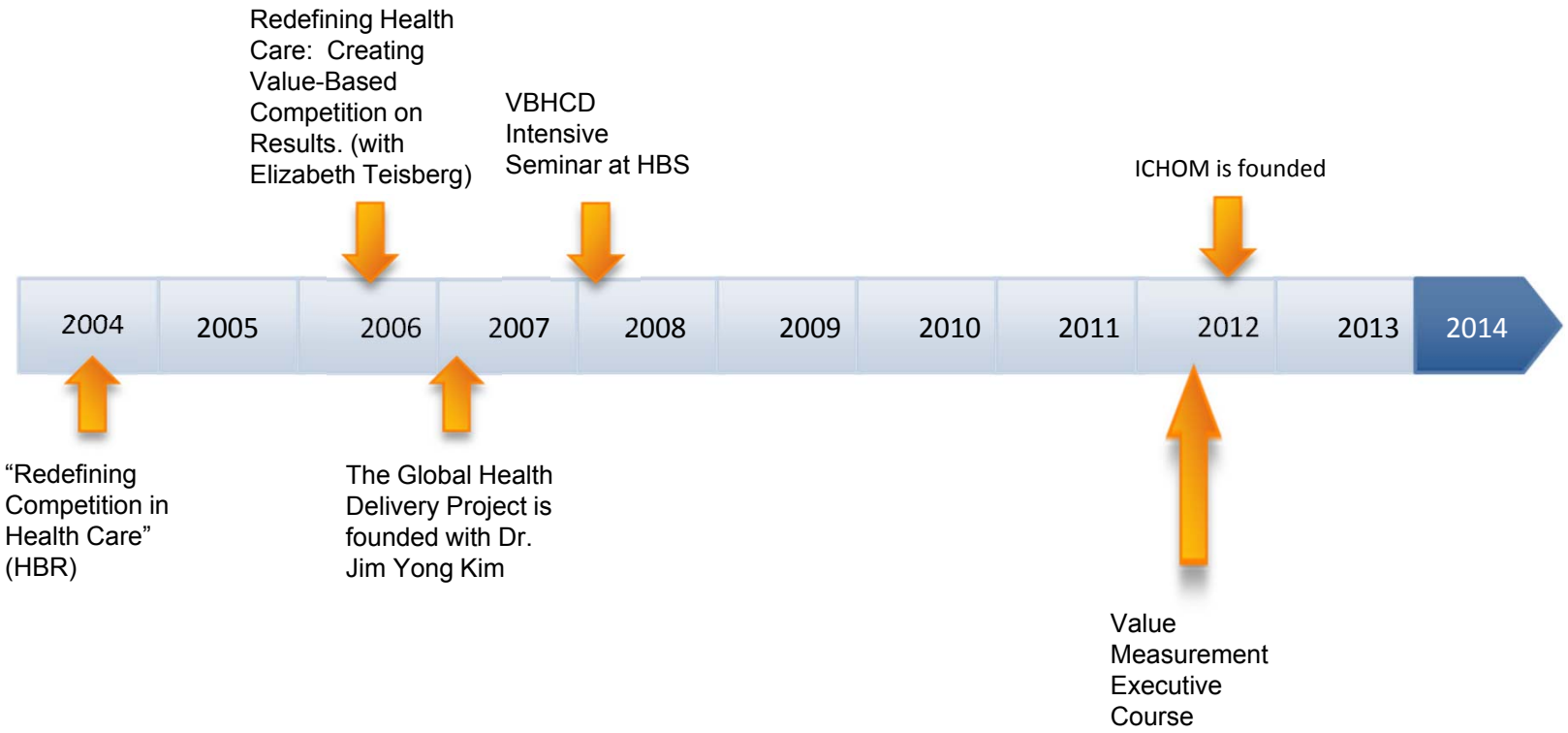
Harvard Courses

- 2008 – Intensive Seminar in Value-Based Health Care Delivery (1 week full-time)
- 2008 – Global Health Delivery (Harvard School of Public Health)
- 2009 – Leadership Workshop on Strategy for Health Care Delivery (2 days)
- 2011 – Partners HealthCare Value Based Health Care Seminar for Residents and Fellows (3 days)
- 2012 – Value Measurement in Health Care (2 days)

External Courses

- 2006 – Health Care Innovation (University of Virginia)
- 2008 – Medical Care and the Corporation (Dartmouth)
- 2010 – UCLA Strategy for Health Care Delivery
- 2010 – Medicaid Leadership Institute
- 2011 – Strategy for Health Care Delivery: United Kingdom
- 2012 – AAOS Enhancing Value in Musculoskeletal Care Delivery
- 2013 – Dartmouth Masters in Health Care Delivery Science
- 2014 – Texas Medical Center Leadership Program

Timeline



Principles of Outcome Measurement

1. Outcomes should be measured by **medical condition** or **primary care patient segment**

   - **Not** by **specialty, procedure** or **intervention**

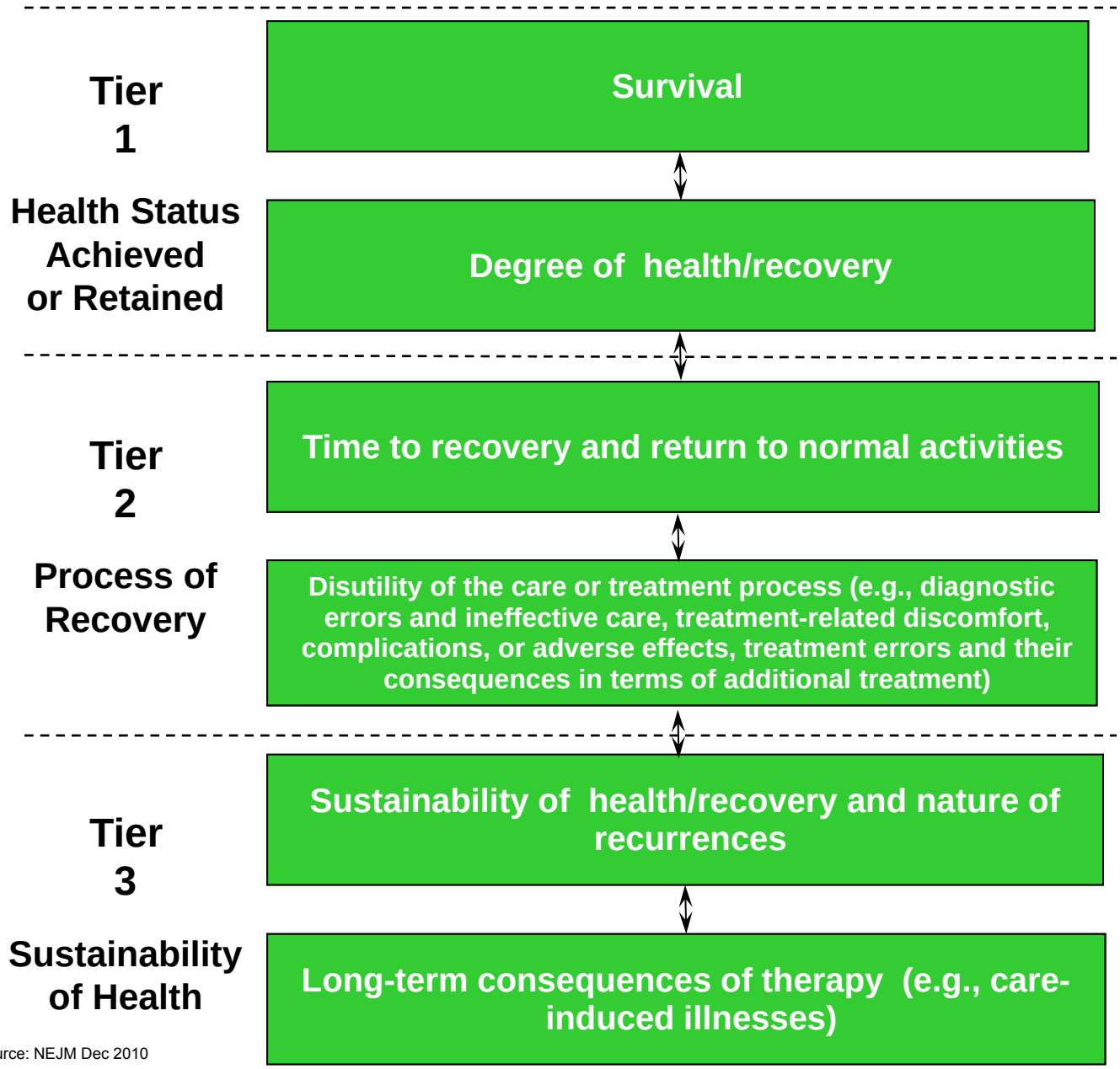
2. Outcomes should reflect the **full cycle of care** for the condition

3. Outcomes are **always multi-dimensional** and should include the health results **most relevant to patients**

4. Measurement must include **initial conditions/risk factors** to asses improvement and allow for risk adjustment

5. Outcome measures should be **standardized** to enable comparison and learning

The Outcome Measures Hierarchy



Source: NEJM Dec 2010

INSTITUTE FOR STRATEGY AND COMPETITIVENESS

BCG
THE BOSTON CONSULTING GROUP

Karolinska Institutet

ICHOM Strategic Agenda

•Define internationally recognized **Standard Sets of outcomes** and risk factors for the most burdensome medical conditions

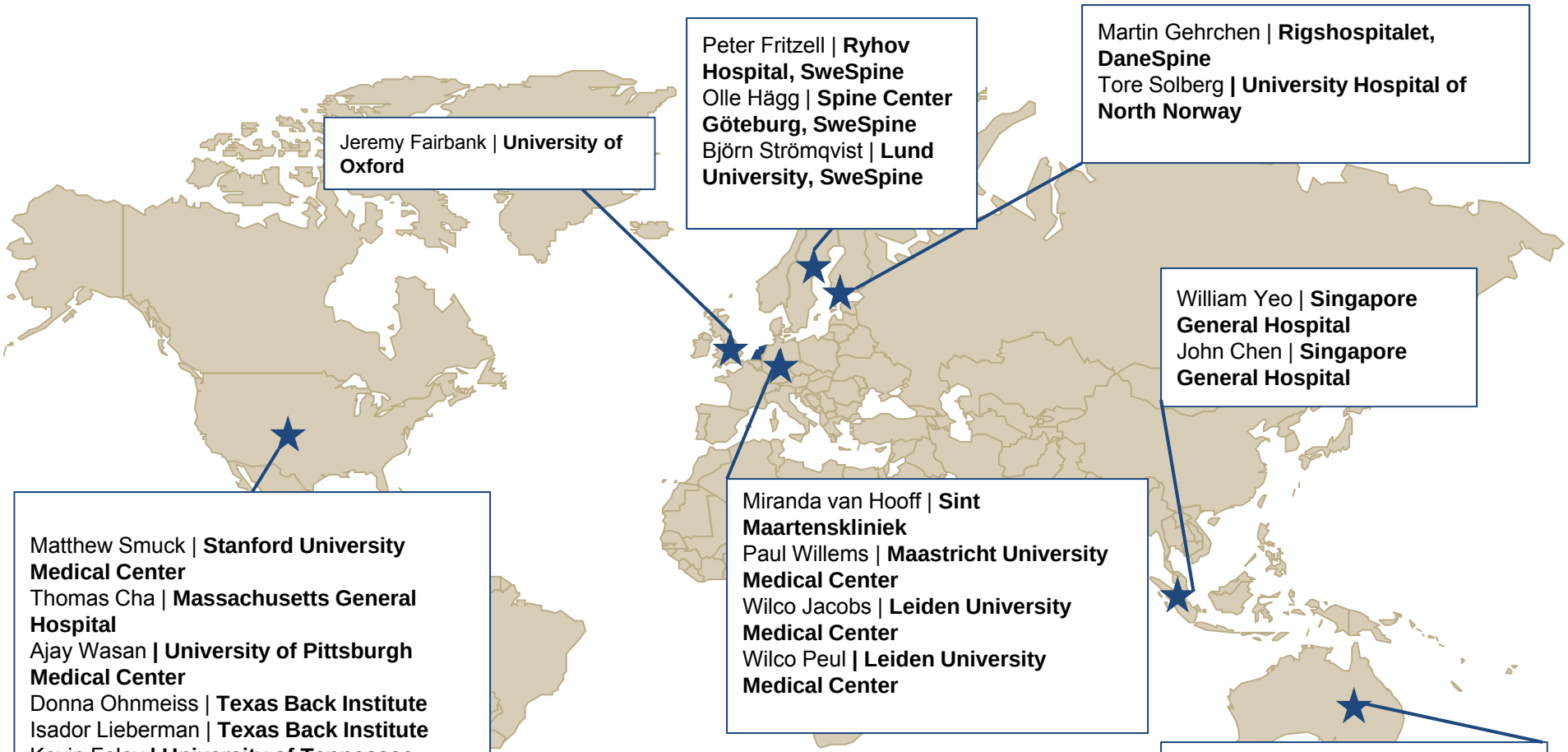
•Drive adoption of Standard Sets by sharing **data collection best practices** and certifying supporting technologies

•Create **global communities** for each medical condition focused on outcome comparison, learning, and improvement

Mission:

To transform health care by empowering clinicians worldwide to measure and compare their patients' outcomes and to learn from each other how to improve.

ICHOM Low Back Pain Working Group



Jeremy Fairbank | **University of Oxford**

Peter Fritzell | **Ryhov Hospital, SweSpine**
Olle Hägg | **Spine Center Göteburg, SweSpine**
Björn Strömqvist | **Lund University, SweSpine**

Martin Gehrchen | **Rigshospitalet, DaneSpine**
Tore Solberg **| University Hospital of North Norway**

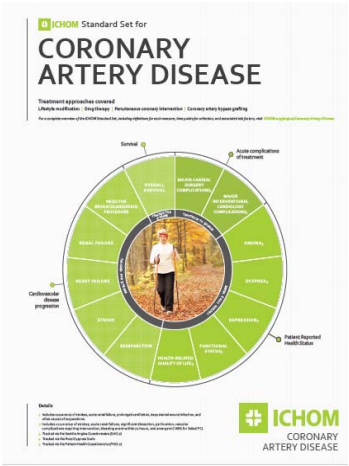
William Yeo | **Singapore General Hospital**
John Chen | **Singapore General Hospital**

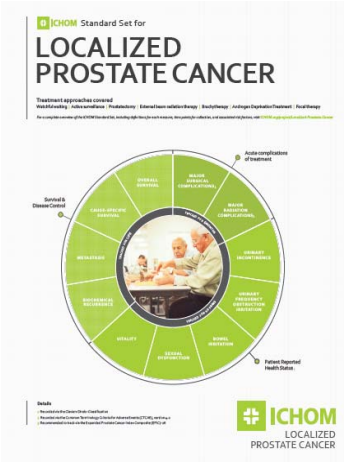
Miranda van Hooff | **Sint Maartenskliniek**
Paul Willems | **Maastricht University Medical Center**
Wilco Jacobs | **Leiden University Medical Center**
Wilco Peul **| Leiden University Medical Center**

Matthew Smuck | **Stanford University Medical Center**
Thomas Cha | **Massachusetts General Hospital**
Ajay Wasan **| University of Pittsburgh Medical Center**
Donna Ohnmeiss | **Texas Back Institute**
Isador Lieberman | **Texas Back Institute**
Kevin Foley **| University of Tennessee Health Science Center**
Neil Shonnard | **Rainier Orthopedic Institute**
Safdar Kahn | **Ohio State University**
Carter Clement | **University of North Carolina at Chapel Hill**

Beth Morrison | **Newro Foundation**
Michelle Davies* | **St. Paul's School**
Richard Kahler | **BrizBrain and Spine**

In its First Year, ICHOM has successfully developed Standard Sets in Four Conditions, and is Ramping Up Quickly

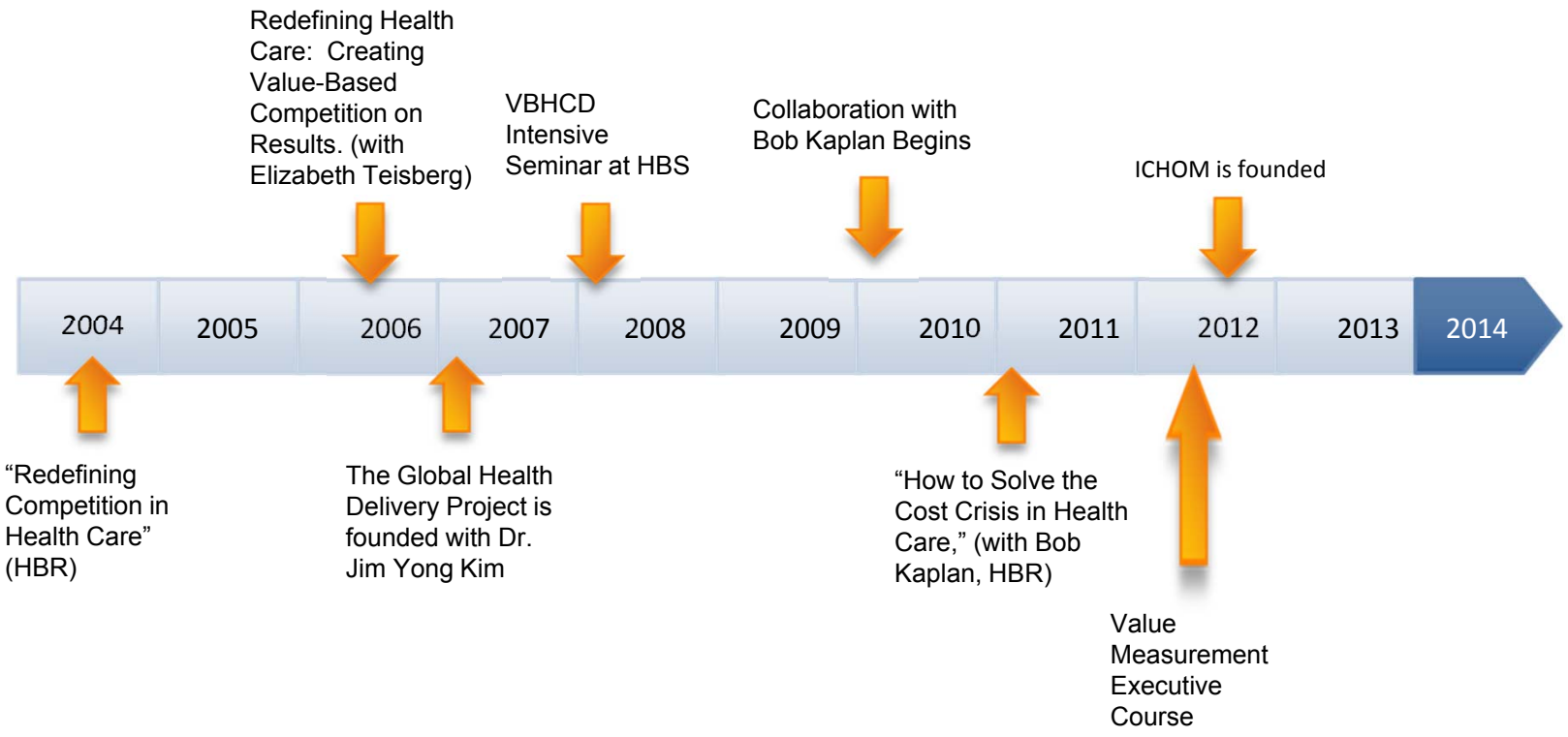




Conditions targeted for 2014

- Parkinson's disease
- Lung cancer
- Advanced prostate cancer
- Depression and anxiety
- Cleft lip and palate
- Hip and knee osteoarthritis
- Stroke
- Macular Degeneration
- …

Timeline



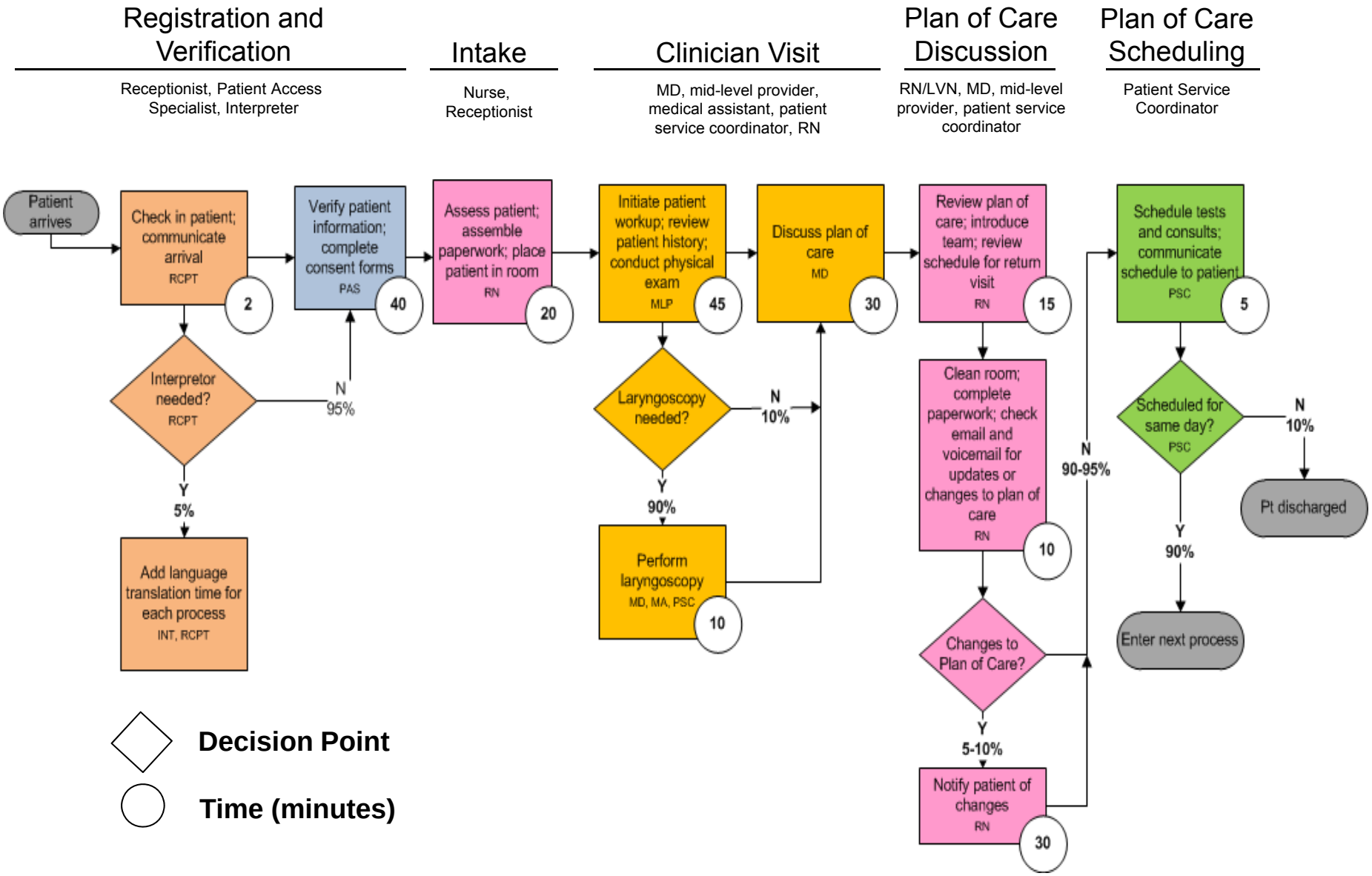
Measuring the Cost of Care Delivery: Principles

- 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
- Move routine or uncomplicated services out of **highly-resourced** facilities
- **Reduce cycle times** across the care cycle
- Process steps that **optimize total care cycle cost** versus minimizing investments in the costs of individual services
- Increase **cost awareness** in clinical teams

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

TDABC Pilot Programs

Institute for Healthcare Improvement

30 hospitals participating in joint replacement program

Timeline