

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 “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>.

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 create a **dynamic system** that keeps rapidly improving

Creating a Value-Based Health Care System

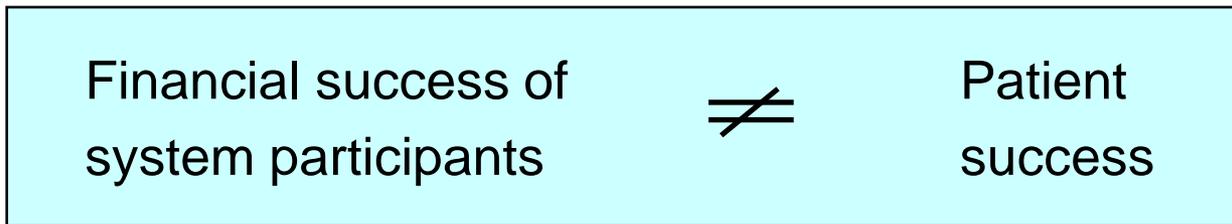
- Significant improvement in value will require **fundamental restructuring of health care delivery**, not incremental improvements

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, disease management and other **overlays** are beneficial but **not sufficient**
- Consumers **cannot fix the dysfunctional structure** of the current system

Harnessing Competition on Value

- **Competition for patients/subscribers** is a powerful force to encourage restructuring of care and continuous improvement in value
- Today's competition in health care **is not aligned with value**



- Creating positive-sum **competition on value** is a central challenge in health care reform in every country

Zero-Sum Competition in U.S. Health Care

Bad Competition

- 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**
- Competition to **exclude less healthy individuals**



Zero or Negative Sum
Competition

Good Competition

- Competition to **increase value for patients**



Positive Sum
Competition

Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not access, equity, 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 for the care of the patient's condition**, not just the costs borne by a single provider

Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not containing costs
2. **Quality improvement** is the key driver of cost containment and value improvement, where quality is **health outcomes**

- Prevention
- Early detection
- Right diagnosis
- Early and timely treatment
- Treatment earlier in the causal chain of disease
- Right treatment to the right patient
- Rapid cycle time of diagnosis and care
- 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

Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not containing costs
2. **Quality improvement** is the key driver of cost containment and value improvement, where quality is **health outcomes**
3. Care delivery should be organized around **medical conditions** 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
 - Involving **multiple** specialties and services



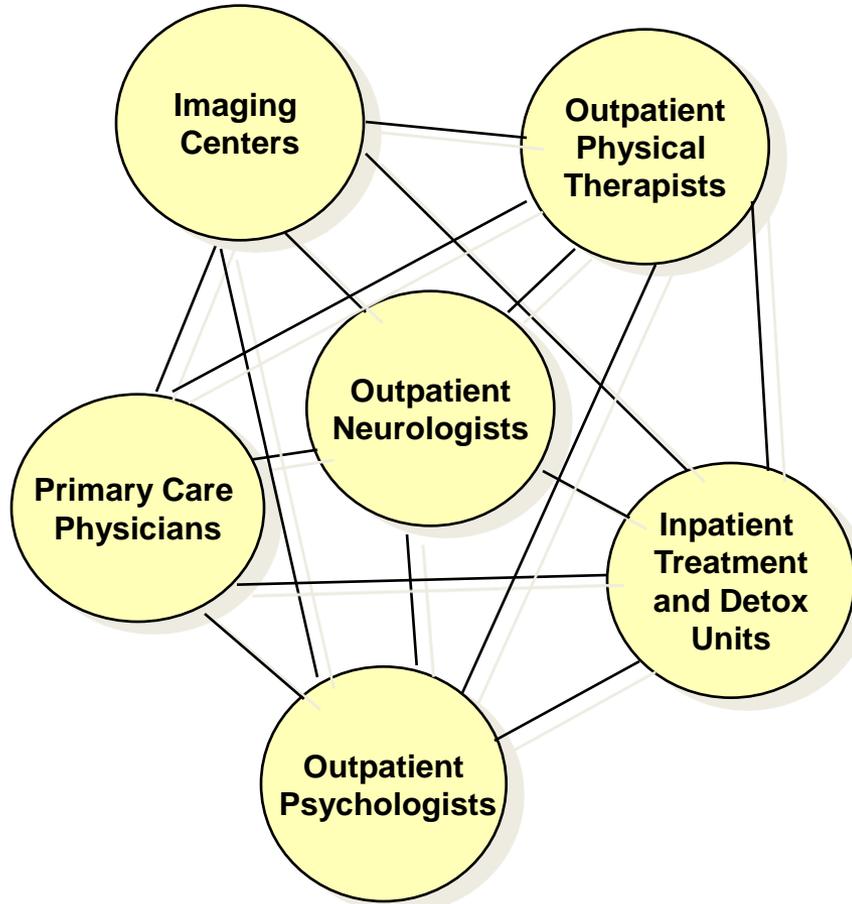
- The patient's medical condition is the **unit of value creation** in health care delivery

Restructuring Care Delivery

Migraine Care in Germany

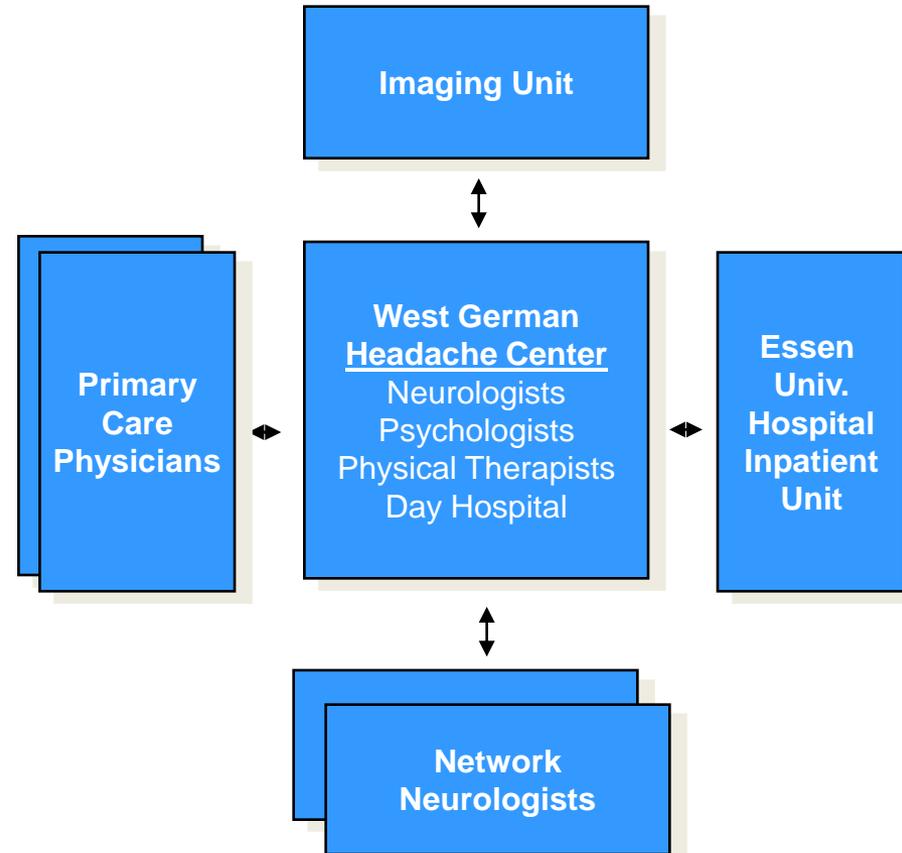
Existing Model:

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

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 Patient and family psychological counseling 	<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
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 Lab visits High risk clinic visits 	<ul style="list-style-type: none"> Office visits Hospital visits Lab visits 	<ul style="list-style-type: none"> Hospital stays Visits to outpatient radiation or chemotherapy units Pharmacy 	<ul style="list-style-type: none"> Office visits Rehabilitation facility visits Pharmacy 	<ul style="list-style-type: none"> Office visits Lab visits Mammographic labs and imaging center 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, lymphodema 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

PROVIDER MARGIN

Breast Cancer Specialist
 Other Provider Entities

Integrated Cancer Care

MD Anderson Head and Neck Center

Dedicated	Shared
<p>Dedicated MDs</p> <ul style="list-style-type: none"> - 8 Medical Oncologists - 12 Surgical Oncologists - 8 Radiation Oncologists - 5 Dentists - 1 Diagnostic Radiologist - 1 Pathologist - 4 Opthamologists 	<p>Shared MDs</p> <ul style="list-style-type: none"> - Endocrinologists - Other specialists as needed (cardiologists, plastic surgeons, etc.)
<p>Dedicated Skilled Staff</p> <ul style="list-style-type: none"> - 22 Nurses - 3 Social Workers - 4 Speech Pathologists - 1 Nutritionist - 1 Patient Advocate 	<p>Shared Skilled Staff</p> <ul style="list-style-type: none"> - Dietician - Inpatient Nutritionist - Radiation Nutritionists - Smoking Cessation Counselors
<p>Dedicated Patient Access Center</p>	
<p>Dedicated Facilities</p> <ul style="list-style-type: none"> - Dedicated Outpatient Unit 	<p>Shared Facilities (located nearby)</p> <ul style="list-style-type: none"> - Radiation Therapy - Pathology Laboratory - Ambulatory Chemotherapy - ORs (grouped by common needs) - Inpatient Wards <ul style="list-style-type: none"> - Surgical Wards - Medical Wards

What is Integrated Care?

Key Elements of Integrated Care:

- Care for the full care cycle of a **medical condition**
- Encompassing **inpatient/outpatient/rehabilitation** care
- By **dedicated teams** focused around the patient
- **Co-located** in **dedicated facilities**
- In which providers are all part of the **same organizational entity**
- Utilizing a **single administrative and scheduling structure**
- With **joint accountability** for outcomes and overall costs



Integrated care is **not** the same as:

- Co-location
- Care delivered by the same organization
- A multispecialty group practice
- Freestanding focused factories
- An Institute or Center
- A Center of Excellence
- A health plan/provider system (e.g. Kaiser Permanente)

Integrated Care Delivery Includes the Patient

- Value in health care is **co-produced** by clinicians and the patient
- Unless patients **comply** with care and treatment plans and take steps to improve their health, even the best delivery team will fail
- For chronic care, patients **are often the best experts** on their own health and personal barriers to compliance
- Today's fragmented system creates **obstacles** to patient education, involvement, and adherence to care



- **IPUs** dramatically improve patient engagement
 - Focus, resources, sustained patient access and accountability
 - Education and support services
- Simply forcing consumers to pay more is a **false solution**

Primary Care as Medical Condition

- Today's primary care structures are often **fragmented** and attempt to address **overly broad** needs with limited resources



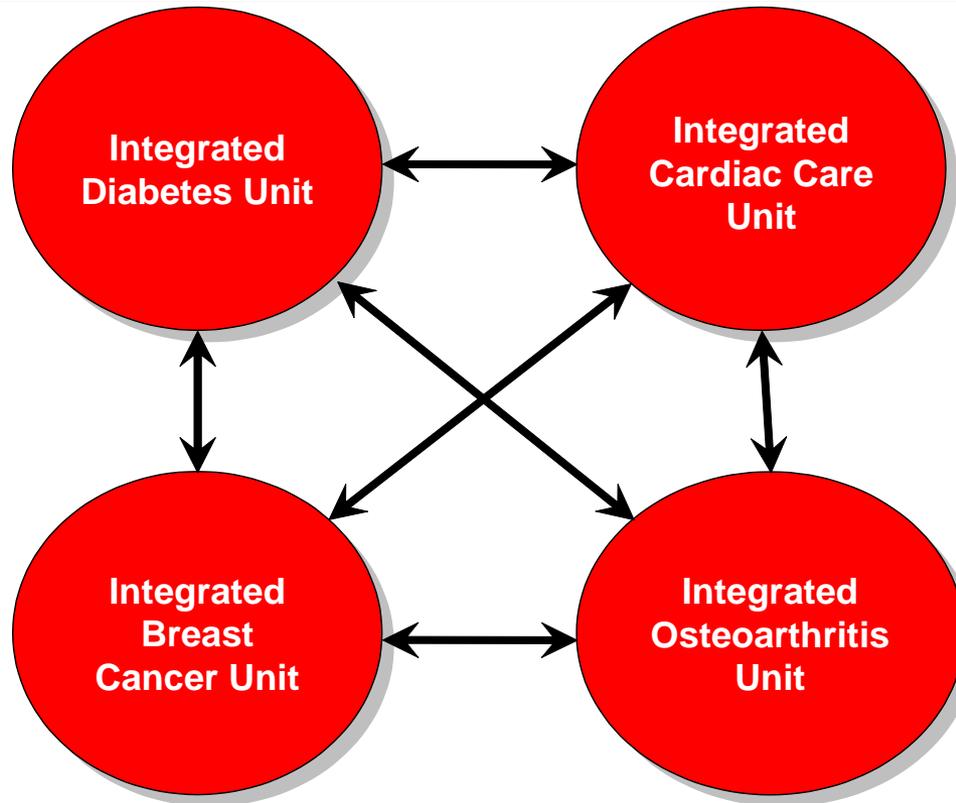
- Define **prevention, screening, diagnosis, and wellness/health maintenance services** for specific sets of patient groups as a **medical condition**



- Deliver defined primary care service bundles using the **range of expertise, support staff, and facilities** needed to deliver value
- Segment primary care practice around **specific patient populations** (e.g. healthy adults, frail elderly, type II diabetics) rather than attempt to be all things to all patients
- Create **formal linkages** between primary care and specialty IPUs
- Primary care delivery locations should involve the **workplace, community organizations, and other non traditional settings** that offer regular patient contact and the ability to develop a group culture of wellness

Coordinating Care Across IPUs

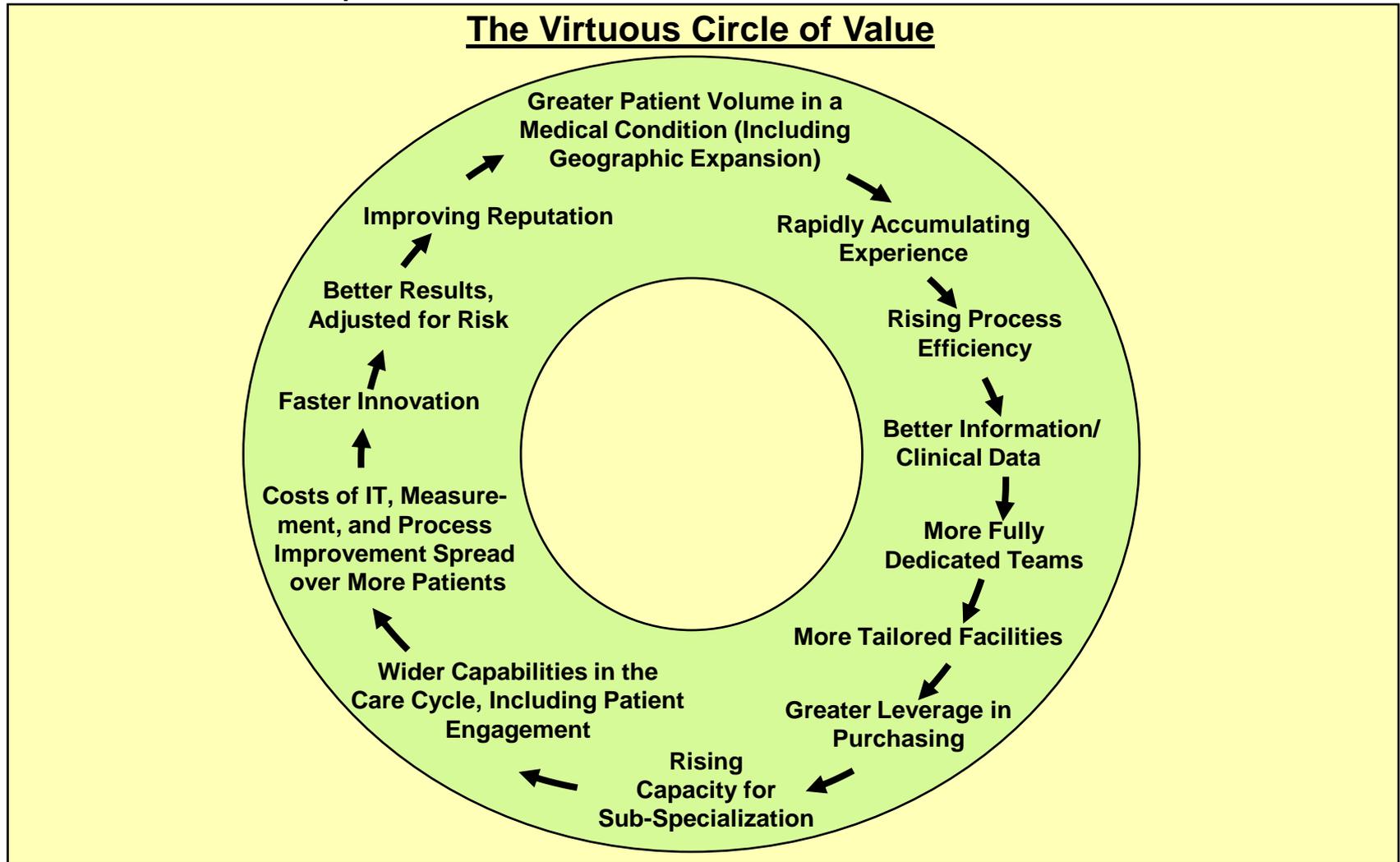
Patients with Multiple Medical Conditions



- The **primary** organizational structure for care delivery should be around the forms of integration required for **every patient**
 - The current system is organized around the **exception**, not the rule
- **Supplementary mechanisms** should be utilized to manage coordination across primary units
- IPUs will **greatly simplify** coordination of care for patients with multiple medical conditions

Principles of Value-Based Health Care Delivery

4. Provider **experience**, **scale**, and **learning** at the medical condition level drive value improvement



- The virtuous circle **extends across geography** when care for a medical condition is integrated across locations

Fragmentation of Hospital Services

Japan

Procedure	Number of hospitals performing the procedure	Average number of procedures per provider per year	Average number of procedures per provider per week
Craniotomy	1,098	71	0.5
Operation for gastric cancer	2,336	72	0.5
Operation for lung cancer	710	46	0.3
Joint replacement	1,680	50	0.3
Pacemaker implantation	1,248	40	0.3
Laparoscopic procedure	2,004	72	0.5
Endoscopic procedure	2,482	202	1.4
Percutaneous transluminal coronary angioplasty	1,013	133	0.9

Source: Porter, Michael E. and Yuji Yamamoto, *The Japanese Health Care System: A Value-Based Competition Perspective*, Unpublished White Paper, September 1, 2007

IPUs and Value

Outcomes

Cost

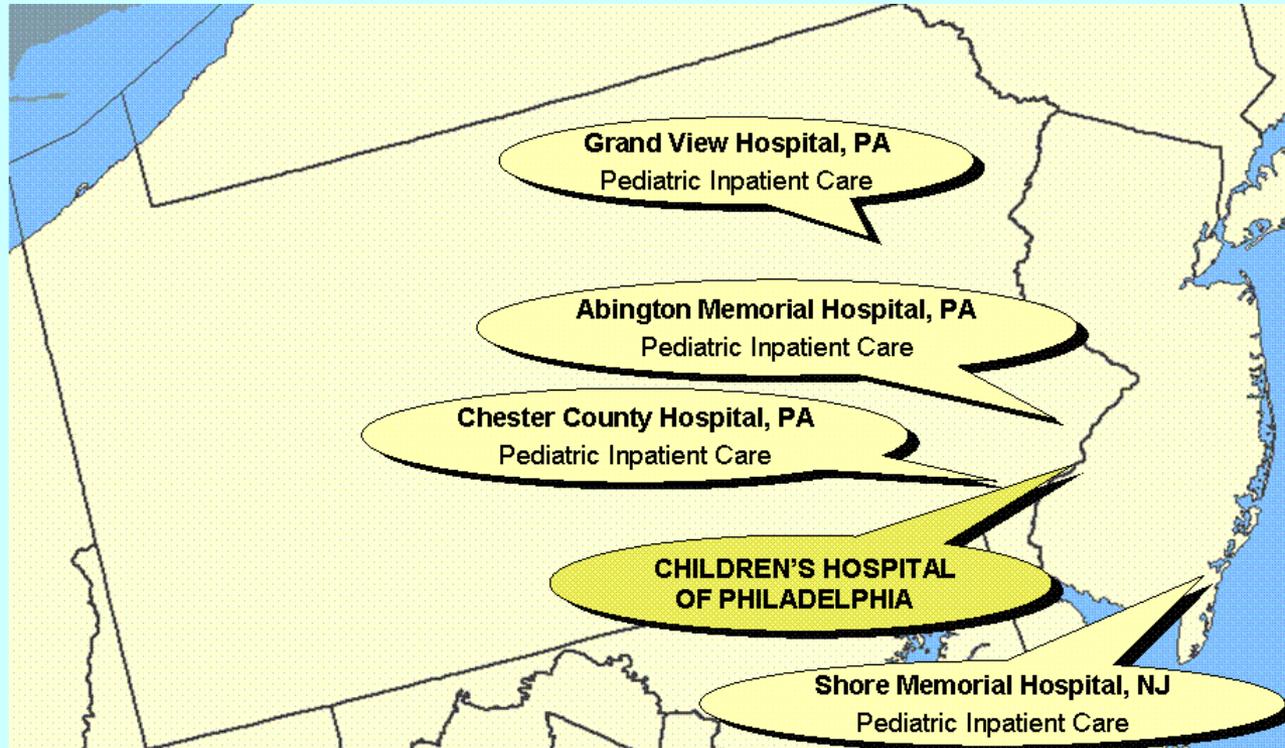
- **Better decisions** in terms of diagnosis and treatment
 - Specialized experience and expertise
 - Better coordination/peer review
 - Better integration of co-occurrences
- **Better execution** of treatment
 - Specialized experience and expertise
 - Tailored facilities
 - Seamless management of common co-occurrences
- **Faster** cycle time
- Improved **patient compliance and engagement** with care
- Full range of **support services** needed to achieve success for the patient (e.g. nutrition, rehabilitation, counseling, psychological support)
- Vastly greater patient **convenience**

- **Greater provider efficiency**
- **Better utilization of facilities**
- **Streamlined administrative costs**

Principles of Value-Based Health Care Delivery

5. **Integrate care across facilities** and **regions**, rather than duplicating services in stand-alone units

Children's Hospital of Philadelphia (CHOP) Affiliations



- Deliver services in the **appropriate** facility, not every facility
- Excellent providers can manage care delivery **across multiple geographies**

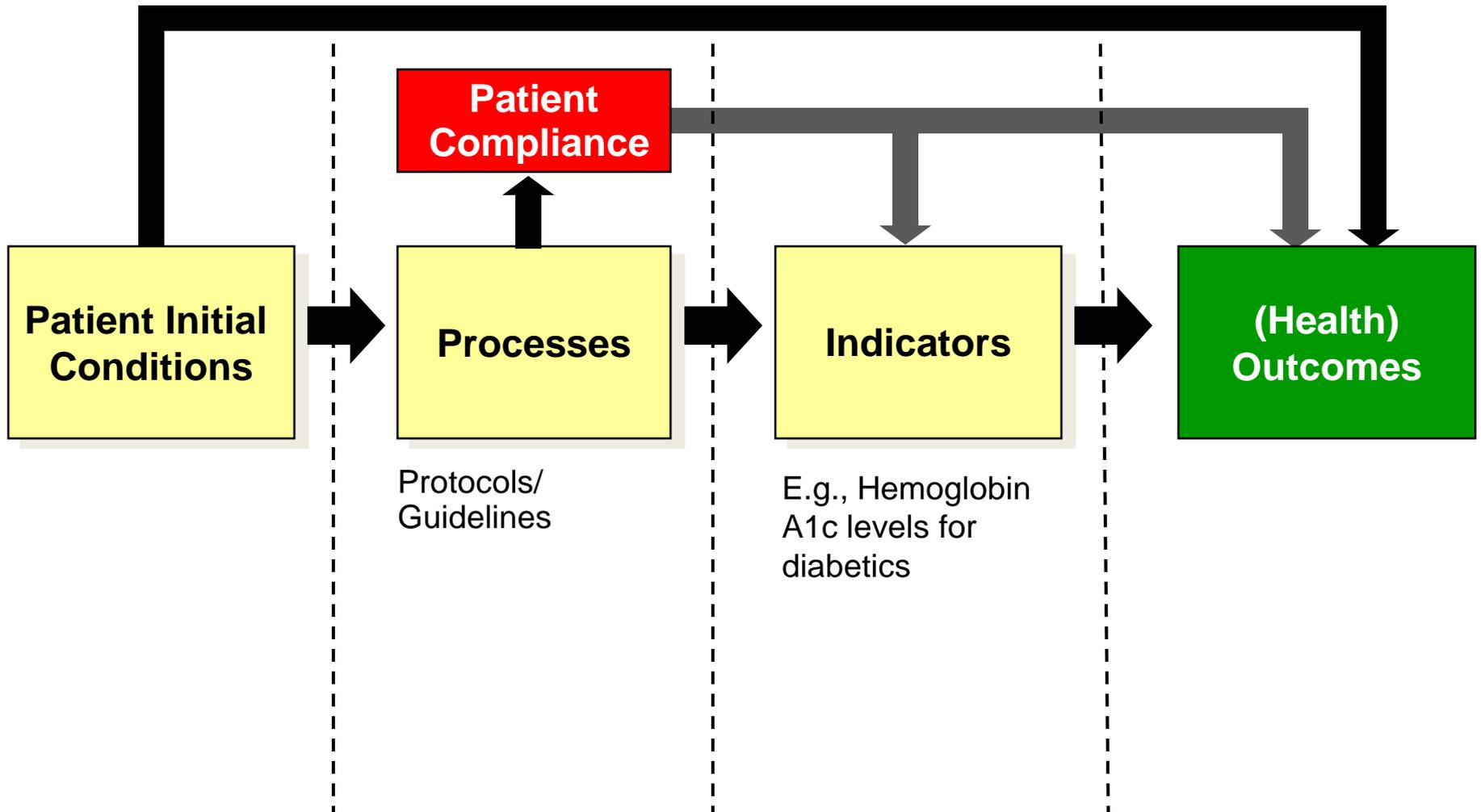
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3. Care delivery should be organized around **medical conditions** over the **full cycle of care**
4. Provider **experience**, **scale**, and **learning** at the medical condition level drive value improvement
5. **Integrate care across facilities** and **across regions**, rather than duplicating services in stand-alone units
6. **Measure** and **report** outcomes and ultimately value for every provider for every medical condition

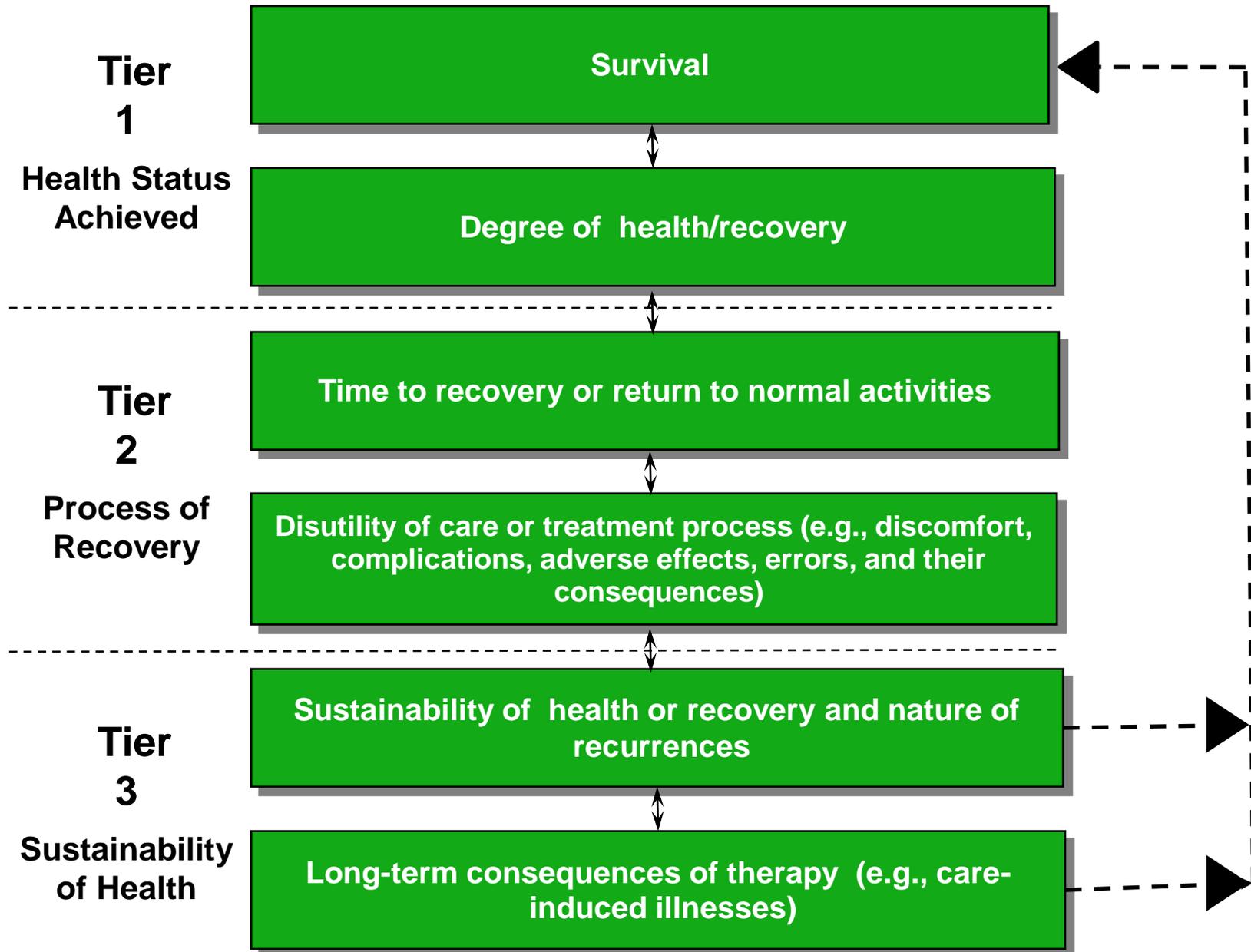


- Outcomes should be measured for **each medical condition** over the **cycle of care**
 - Not for interventions or short episodes
 - Not for practices, departments, clinics, or entire hospitals
 - Not separately for types of service (e.g. inpatient, outpatient, tests, rehabilitation)
- Results must be measured at **the level at which value is created** not traditional organizational units

Measuring Value in Health Care



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 outcome**

Time to recovery or return to normal activities

- **Time to remission**
- **Time to achieve 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**
- **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**
- **Premature osteoporosis**

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5. **Integrate care across facilities** and **across regions**, rather than duplicate services in stand-alone units
6. **Measure** and **report** outcomes and ultimately value for every provider for every medical condition
7. **Align reimbursement** with value and reward innovation

- **Bundled reimbursement** for **cycles of care**, not payment for discrete treatments or services, short episodes, global budgets, or capitation
- Time-base bundled reimbursement for **managing chronic conditions**
- Reimbursement for defined **prevention, screening, wellness/health maintenance** service bundles



- **Providers** and **health plans** should be proactive in driving new reimbursement models, not wait for government

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5. **Integrate care across facilities** and **across regions**, rather than duplicating services in stand-alone units
6. **Measure** and **report** outcomes and ultimately value for every provider for every medical condition
7. **Align reimbursement** with value and reward innovation
8. Utilize information technology to enable **restructuring of care delivery** and **measuring results**, rather than treat it as a solution itself

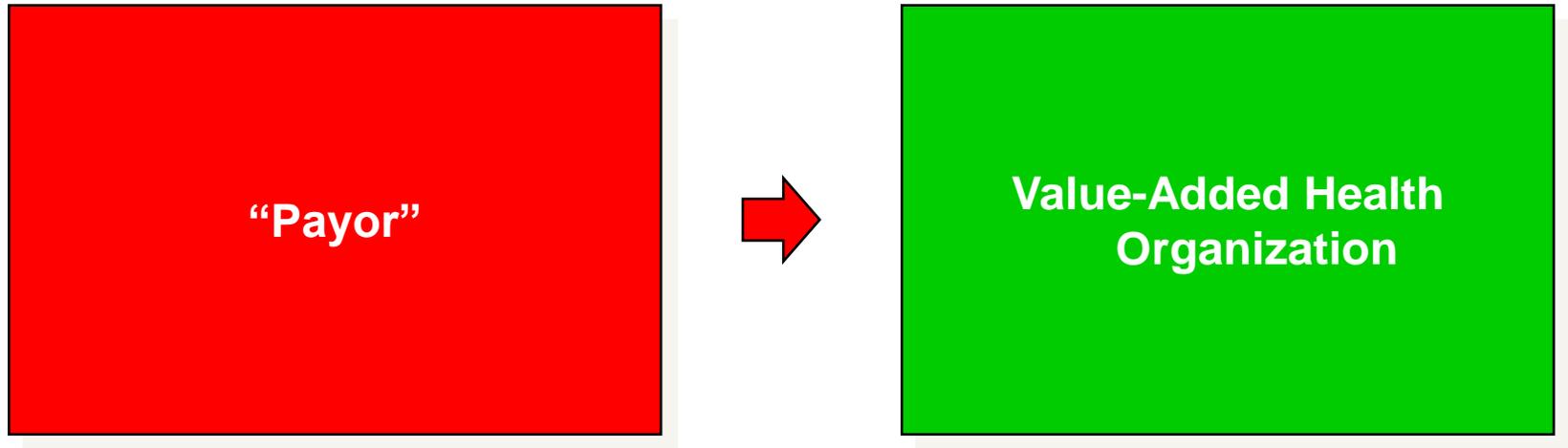
- Common data definitions
- Precise interoperability standards
- Architecture for combining all types of data (e.g. notes, images) for each patient over time
- Encompass the full care cycle, including referring entities
- Templates for medical conditions to enhance the user interface
- Accessible to all involved parties

Value-Based Health Care Delivery: Implications for Providers

- Organize around **integrated practice units** (IPUs)
 - Employ formal **partnerships** and **alliances** with other organizations involved in the care cycle
- Measure **outcomes** and **costs** for every patient by medical condition
- Lead the development of **new bundled reimbursement models**
- System Integration: **specialize** and **integrate** services across facilities
 - **Rationalize service lines/ IPUs** across facilities to improve volume, avoid duplication, and enable excellence
 - Clinically integrate care **across facilities** within an IPU structure
 - Common organizational unit across facilities
 - Offer specific services at the **appropriate facility**
 - e.g. acuity level, cost level, benefits of convenience
 - Formally link **primary care** IPUs to specialty IPUs
- Grow high-performing practices **across regions**

- Implement an integrated **electronic medical record** system to support these functions

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



Structure of the Swedish System

- **Universal access** to care through a decentralized, government-administered system
 - Financed largely by county and municipal **taxes**
 - No formal premiums for public coverage
 - **Partial risk pooling** via national grants to address demographic differences across geography
 - **Mix of public and private providers** contracting with county councils to deliver care
 - Small number of private providers treat private pay patients
 - **Well trained and hardworking** physicians and other medical personnel
 - Advanced measurement via the **quality registry system**
 - **HIT adoption** by almost all primary care and most specialty care providers
 - E-health strategy underway to achieve universal HIT adoption and interoperability
 - Swedish citizens follow **healthy living practices** in important areas
 - E.g. low smoking prevalence, moderate obesity levels relative to other OECD countries
- 
- **Health expenditures are moderate** relative to other OECD countries
 - Aggregate health **outcomes are favorable** relative to other OECD countries

Swedish Obesity Registry Indicators

Surgery

- Operation type and concurrent operations (gall bladder removal, appendix removal, etc)
- Surgery data (surgery/anesthesia times, blood loss, etc)
- Perioperative complications

6-week follow-up

- Length of stay
- Post operative but <30d surgical complications (bleeding, leakage, infection, technical complications, etc)
- Post operative but <30d general complications (blood clot, urinary infection, etc)
- Other operations required (gall bladder, plastic surgery, etc)
- Diabetes compliance (HbA1c)
- Repetition of anthropometric measurements (height, weight, waist, BMI, and change from initial)

Source: SOReg: Swedish National Obesity Registry

1,2 & 5-year follow-up

- Anthropometrics and change from initial
- Diabetes, triglycerides, cholesterol indicators
- Comorbidities, and ongoing treatments
- Delayed complications of operation (hernia, ulcer, treatment related malnutrition or anemia, etc)
- Other surgeries since registration
- SF-36/OP-9 (validated quality of life measures)

Initial Conditions

- Demographics (age, sex, height, weight, BMI, waist circumference etc)
- Baseline labs – HbA1c (a measure of long-term blood glucose control), Triglycerides, Low Density Lipoprotein (bad cholesterol), High Density Lipoprotein (good cholesterol) Comorbidities (sleep apnea, diabetes, depression, etc)
- SF-36/OP-9 (validated quality of life measures)
- Background (Previous surgeries, anesthesia risk class)

Moving to a High-Value Swedish Health Care System: Recommendations

Goals

- Shift the focus from cost containment and reducing wait times to **patient value**
- Pursue universal access and equity not only in terms of services offered, but also **outcomes** and **value** of care

Insurance

- **Improve risk pooling** to neutralize differences in complex patients
 - Major issue as patient choice expands

Measurement

- Standardize and expand quality registries to measure **multi-dimensional health outcomes** for **all medical conditions**
 - Outcome hierarchy for the full care cycle
 - Develop registries for additional non-acute conditions and chronic care (e.g. primary care, mental health conditions)
- Expand the timeframe of registries to **include results of long-term follow-up care**

Recommendations for Sweden, cont'd

Measurement, cont'd.

- Create **risk adjustment** and **patient stratification** methodologies to avoid bias against complex patients and enable better understanding of provider results, including which patients benefit from various types of care
- Move to collect **cost data for each patient**, linked to individual treatments and outcomes

Information Technology

- Set **mandatory HIT standards** via the national e-Health strategy, and require **universal adoption** of **interoperable HIT systems**
 - E.g. data definitions, interoperability and communication, architecture to aggregate data

Provider Choice and Competition

- Enable **national free choice of providers** based on **value**, not only under the wait time guarantee

Recommendations for Sweden, cont'd

Provider Choice and Competition, cont'd.

- Increase **provider experience and scale** at the medical condition level
 - Shift from many low-volume centers to fewer high-volume providers able to develop deep expertise caring for a medical condition or patient population
 - Minimum volume requirements by medical condition as an interim step

Fragmentation of Hospital Services

Sweden

DRG	Number of admitting providers	Average admissions/ provider/ year	Average admissions/ provider/ week	Average percent of total national admissions per provider
Knee Procedure	68	55	1	1.5%
Diabetes age > 35	80	96	2	1.3%
Kidney failure	80	97	1	1.3%
Multiple sclerosis and cerebellar ataxia	78	28	1	1.3%
Inflammatory bowel disease	73	66	1	1.4%
Implantation of cardiac pacemaker	51	124	2	2.0%
Splenectomy age > 17	37	3	<1	2.6%
Cleft lip & palate repair	7	83	2	14.2%
Heart transplant	6	12	<1	16.6%

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

Recommendations for Sweden, cont'd

Provider Choice and Competition, cont'd.

- Increase **provider experience and scale**, e.g. via minimum volume requirements by medical condition
 - Shift from many low-volume centers to fewer high-volume providers able to develop deep expertise caring for a medical condition or patient population
- Encourage **rationalization of service lines** within and across county councils, reducing excess and duplicative capacity while widening choice to maintain competition
- Enable expansion of excellent providers **across multiple locations/counties**

Integrated Care Delivery

- Encourage and support **integrated care delivery structures** for medical conditions in both public and private provider settings
- Continue the trend toward **larger, team-based primary care centers** rather than small practices or solo practitioners
 - Encourage **patient segmentation** around particular patient populations or sets of medical conditions
- Remove barriers to **integration and coordination of elderly care**

Recommendations for Sweden, cont'd

Bundled Reimbursement

- Shift reimbursement to **bundled prices for cycles of care** instead of global budgets or payment for discrete services
 - Avoid per visit, productivity-based reimbursement, which encourages focus on volume rather than value and can result in skimping on high-value care (e.g. consultations, patient education)

Role of County Councils/Municipalities

- Shift role of county councils and municipalities from “payers” to **health advisors** working with patients and clinician teams to select excellent providers