

Value-Based Health Care Delivery

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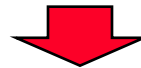
Medical Technology Leadership Forum
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This presentation draws on Michael E. Porter and Elizabeth Olmsted Teisberg: [Redefining Health Care: Creating Value-Based Competition on Results](#), Harvard Business School Press, May 2006, and “How Physicians 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 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

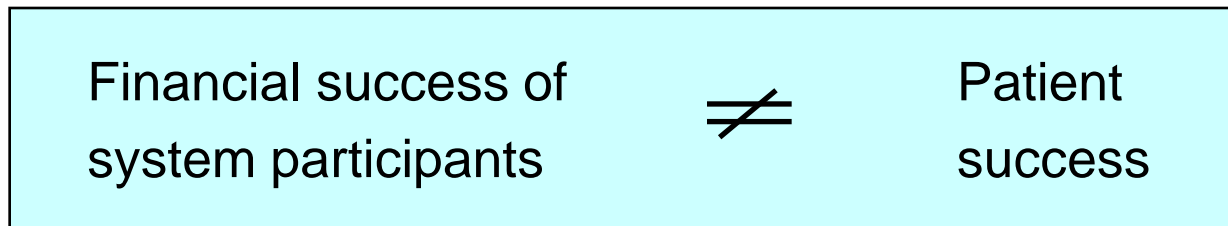
- Significant improvement in value will require **fundamental restructuring of health care delivery**, not incremental improvements

Today, 21st century medical technology is delivered with 19th century organization structures, management practices, and pricing models

- TQM, process improvements, safety initiatives, pharmacy management, and disease management overlays are beneficial but **not sufficient** to substantially improve value
- Consumers **cannot fix the dysfunctional structure** of the current system

Harnessing Competition on Value

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



- Creating **competition to improve value** is a central challenge in health care reform

Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**

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



- Outcomes are the **full set of health outcomes** achieved by the patient
- Costs are the **total costs for the care of the patient's condition**, including costs not borne by any single provider or even within the health care system

Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**
2. The best way to improve value and contain cost is to **improve quality**, where quality is health **outcomes**

- Prevention of disease
- Early detection
- Right diagnosis
- Early and timely treatment
- Right treatment to the right patients
- Treatment earlier in the causal chain of disease
- Rapid care delivery process with fewer delays
- 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**
2. The best way to improve value and contain cost is to **improve quality**, where quality is health **outcomes**
3. To maximize value, health care delivery must 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
 - **Includes** the most common co-occurring conditions
 - Involving **multiple** specialties and services

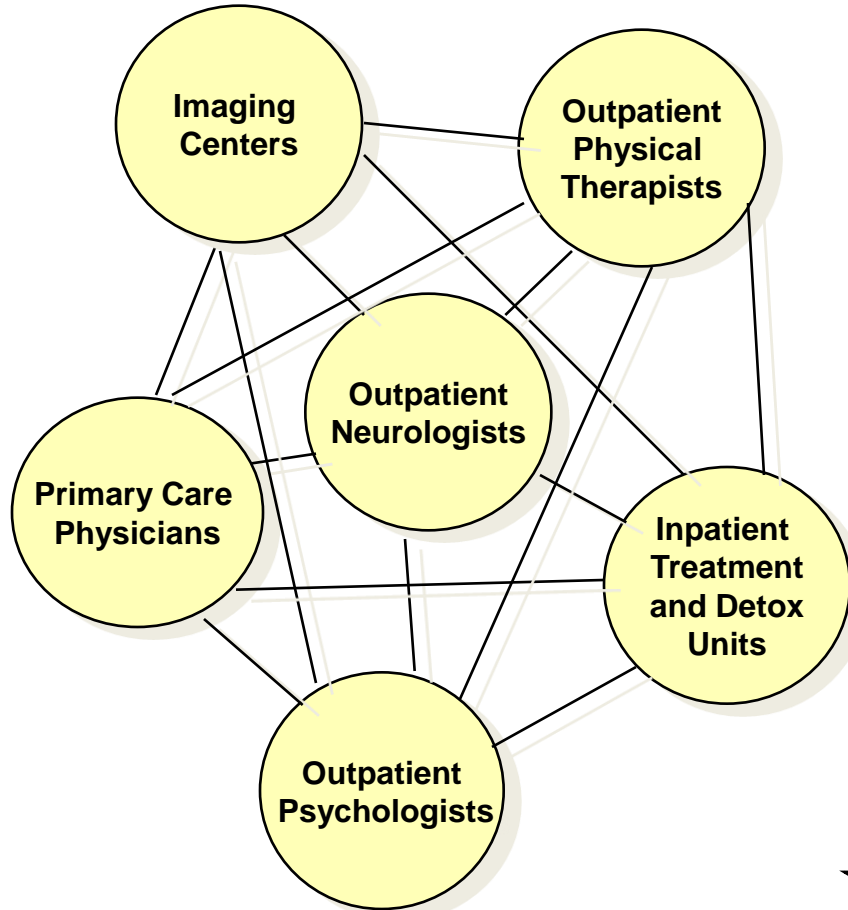


- The medical condition is the **unit of value creation** in health care delivery

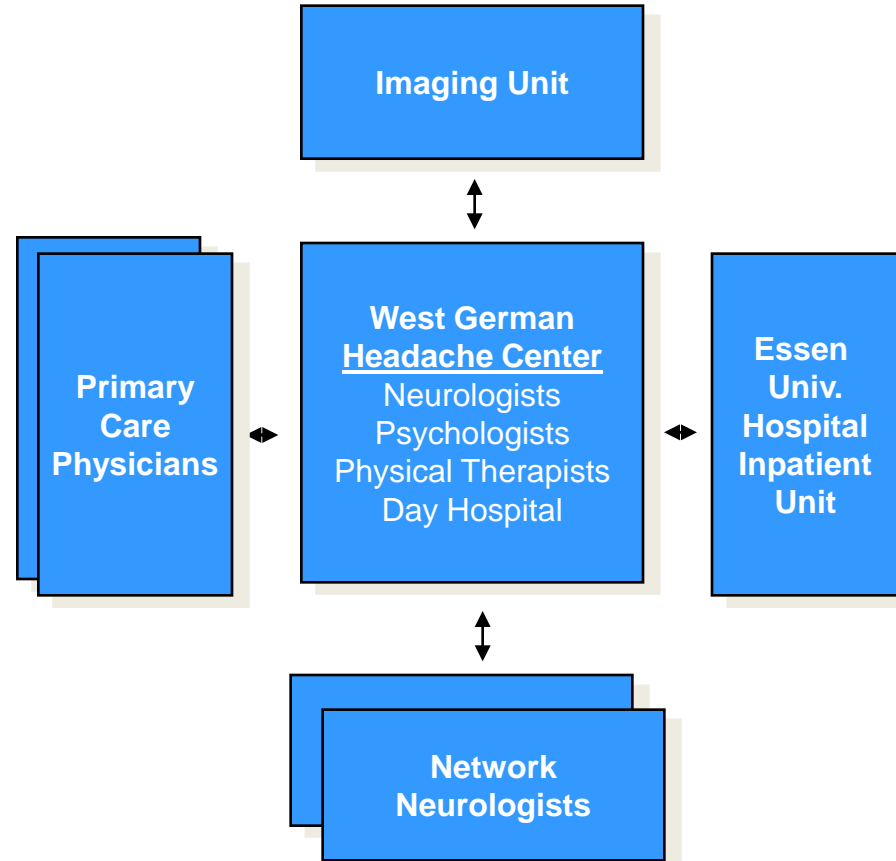
Restructuring Care Delivery

Migraine Care in Germany

Existing Model:
Organize by Specialty and
Discrete Services



New Model:
Organize into Integrated
Practice Units (IPUs)



- The health plan was crucial to this transformation

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 choices of treatment 	<ul style="list-style-type: none"> ▪ Counseling on the treatment process ▪ Achieving compliance 	<ul style="list-style-type: none"> ▪ Counseling on rehabilitation options, process ▪ Achieving compliance 	<ul style="list-style-type: none"> ▪ Counseling on long term risk management ▪ Achieving Compliance
			<ul style="list-style-type: none"> ▪ Patient and family psychological counseling 		<ul style="list-style-type: none"> ▪ Psychological counseling 	
MEASURING	<ul style="list-style-type: none"> ▪ Self exams ▪ Mammograms 	<ul style="list-style-type: none"> ▪ Mammograms ▪ Ultrasound ▪ MRI 		<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"> ▪ Recurring mammograms (every six months for the first 3 years)
		<ul style="list-style-type: none"> ▪ Biopsy ▪ BRACA 1, 2... 				
ACCESSING	<ul style="list-style-type: none"> ▪ Office visits ▪ Mammography lab visits 	<ul style="list-style-type: none"> ▪ Office visits 	<ul style="list-style-type: none"> ▪ Office visits 	<ul style="list-style-type: none"> ▪ Hospital stays 	<ul style="list-style-type: none"> ▪ Office visits 	<ul style="list-style-type: none"> ▪ Office visits
		<ul style="list-style-type: none"> ▪ Lab visits 	<ul style="list-style-type: none"> ▪ Hospital visits 	<ul style="list-style-type: none"> ▪ Visits to outpatient or radiation chemotherapy units 	<ul style="list-style-type: none"> ▪ Rehabilitation facility visits 	<ul style="list-style-type: none"> ▪ Lab visits ▪ Mammographic labs and imaging center visits
		<ul style="list-style-type: none"> ▪ High risk clinic 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 ▪ Genetic evaluation ▪ Choosing a treatment plan 	<ul style="list-style-type: none"> ▪ Surgery prep (anesthetic risk assessment, EKG) 	<ul style="list-style-type: none"> ▪ Surgery (breast preservation or mastectomy, oncoplastic alternative) 	<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) 	<ul style="list-style-type: none"> ▪ Periodic mammography ▪ Other imaging
			<ul style="list-style-type: none"> ▪ Plastic or onco-plastic surgery evaluation 	<ul style="list-style-type: none"> ▪ Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy) 		<ul style="list-style-type: none"> ▪ Follow-up clinical exams ▪ Treatment for any continued side effects
					<ul style="list-style-type: none"> ▪ Physical therapy 	

PROVIDER MARGIN

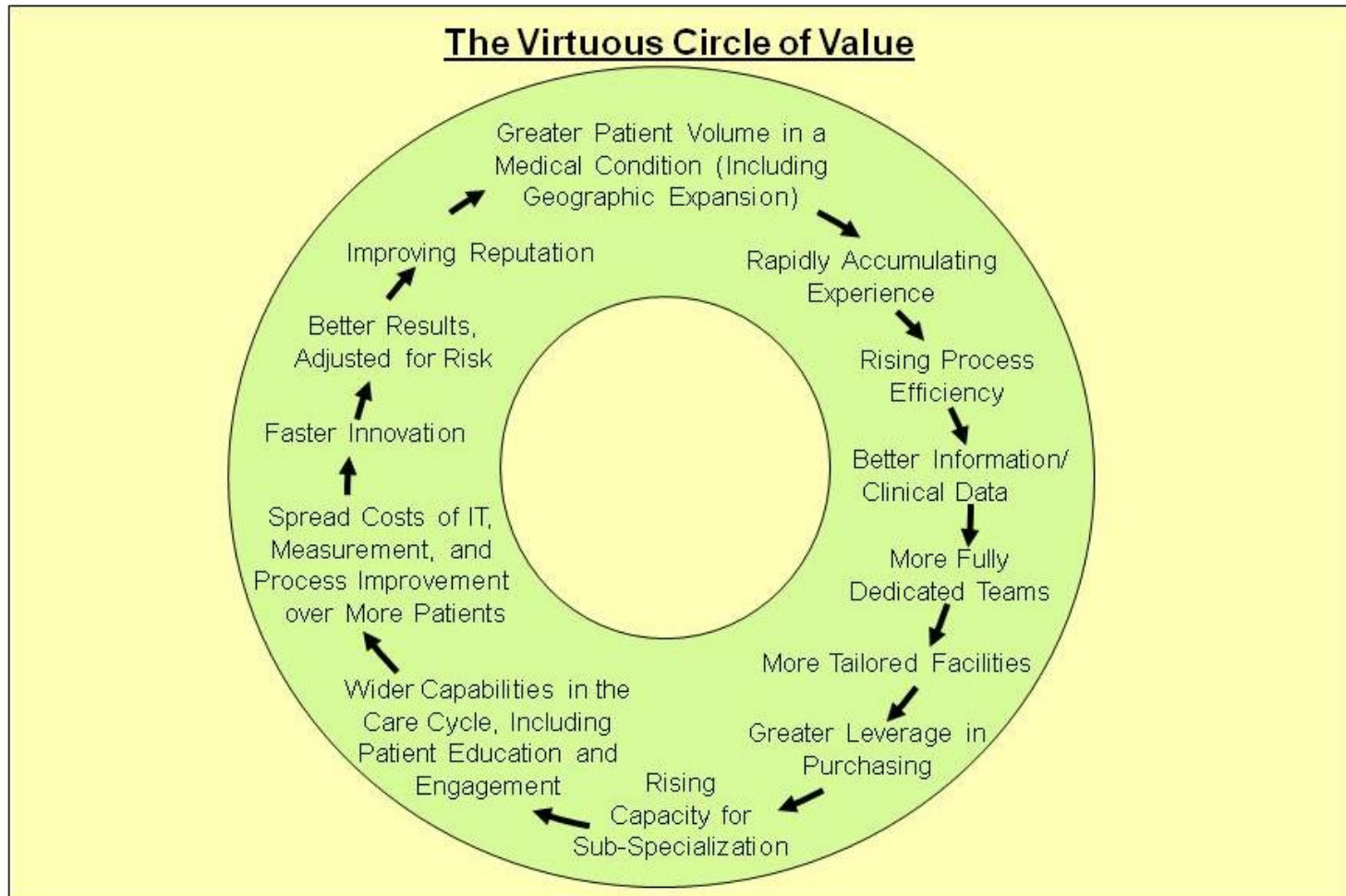
Breast Cancer Specialist
 Other Provider Entities

Prevention, Wellness, Screening, and Health Maintenance (PWSM) as a Medical Condition

- An integrated care delivery structure for **prevention, wellness, screening** and **health maintenance** (PWSM) is needed, not today's fragmented structure
- PWSM care delivery should **target specific patient populations** (e.g. elderly, healthy children) rather than attempt to be all things to all patients
 - Solo private practices are not the right organization structures to best deliver integrated primary and preventative care
- Care delivery models should involve the **workplace, community organizations** and **other non traditional settings** to leverage regular patient contact and the ability to develop a group culture of wellness
- New **reimbursement models** will be required to facilitate this reorganization

Principles of Value-Based Health Care Delivery

4. Value is enhanced by increasing provider **experience**, **scale**, and **learning** at the **medical condition level**



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

Fragmentation of Hospital Services

Sweden

DRG	Total admissions per year nationwide	Number of admitting providers	Average admissions/provider/year	Average admissions/provider/week	Average percent of total national admissions per provider
Diabetes age > 35	7,649	80	96	2	1.3%
Kidney failure	7,742	80	97	1	1.3%
Multiple sclerosis and cerebellar ataxia	2,218	78	28	1	1.3%
Inflammatory bowel disease	4,816	73	66	1	1.4%
Implantation of cardiac pacemaker	6,324	51	124	2	2.0%
Splenectomy age > 17	129	37	3	<1	2.6%
Cleft lip & palate repair	583	7	83	2	14.2%
Heart transplant	74	6	12	<1	16.6%

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

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 draft, September 1, 2007

Integrated Care Delivery Includes the Patient

- Value in health care is **co-produced** by patients and clinicians
- 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
- Simply forcing consumers to pay more is a **false solution**

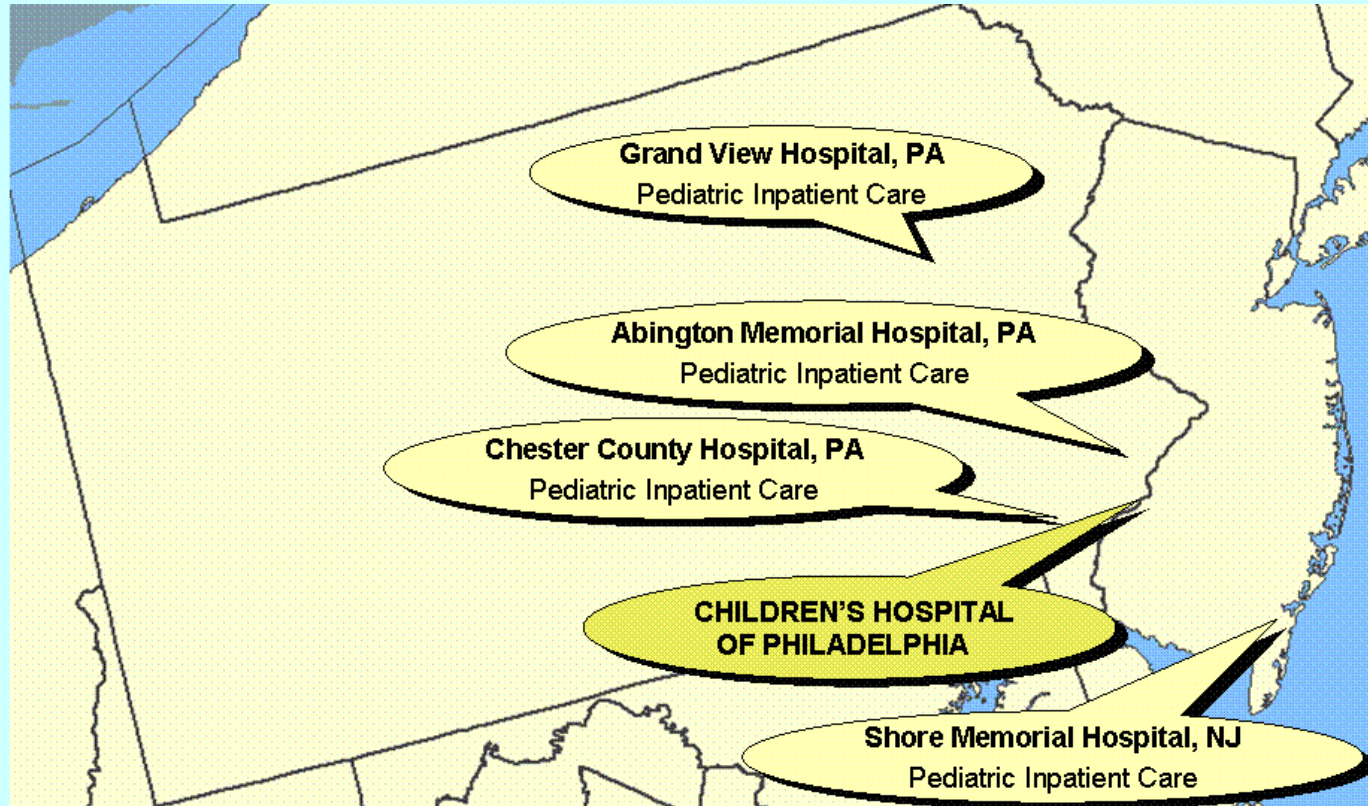


- **IPUs** will improve patient engagement

Principles of Value-Based Health Care Delivery

- Care should be **integrated across facilities** and **across regions**, rather than duplicate services in stand-alone units

Children's Hospital of Philadelphia (CHOP) Affiliations



- Excellent providers can manage care delivery **across multiple geographies**

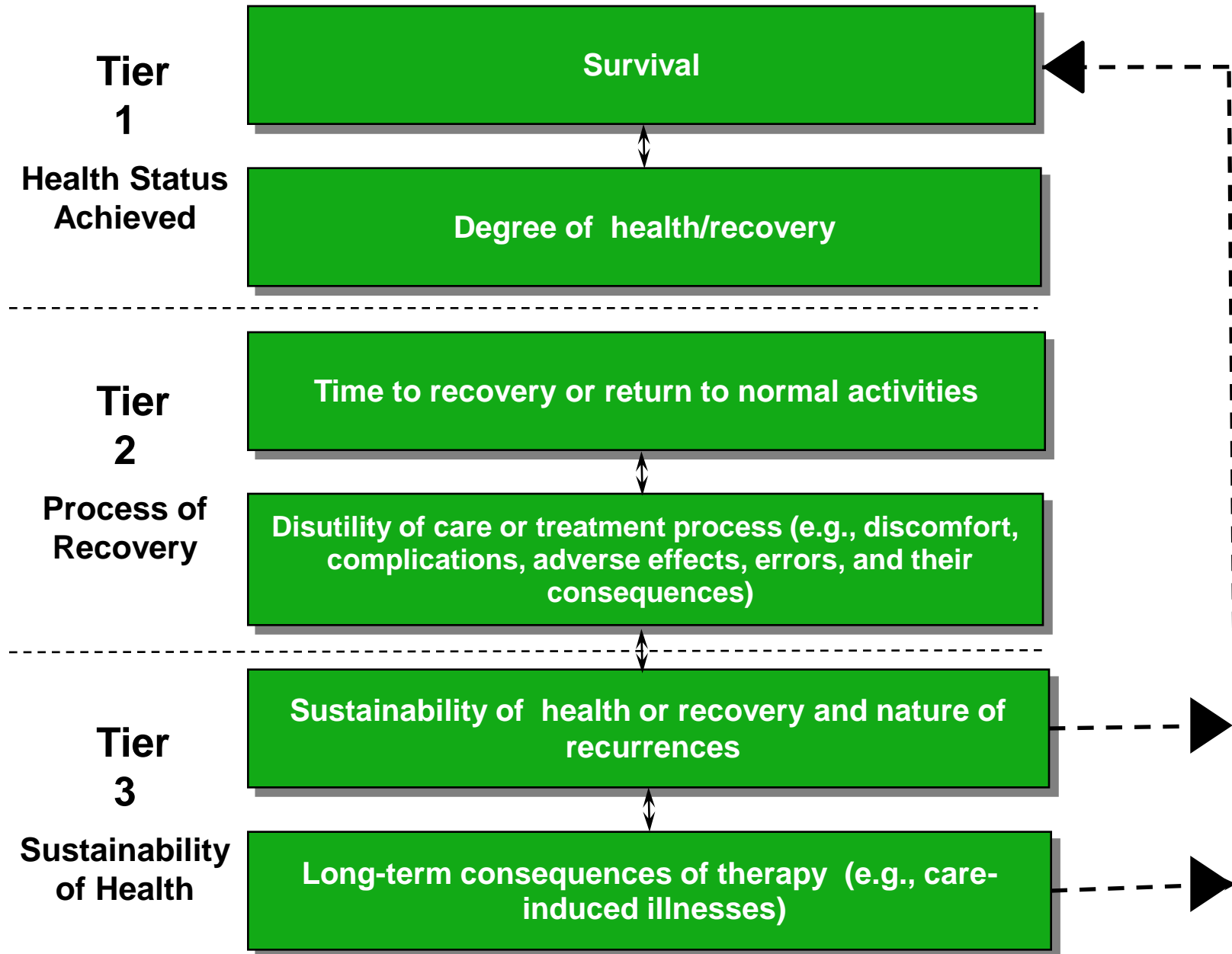
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4. Drive value improvement by increasing provider **experience, scale,** and **learning** at the **medical condition level**
5. Care should be **integrated across facilities** and **across regions**, rather than duplicate services in stand-alone units
6. **Measure** and **report** outcomes for every provider for every medical condition



- For **medical conditions** over the **cycle of care**
 - Not for interventions or short episodes
 - Not for practices, departments, clinics, or hospitals
 - Not separately for types of service (e.g. inpatient, outpatient, tests, rehabilitation)
- Results should be measured at **the level at which value is created**

The Outcome Measures Hierarchy



Swedish Obesity Registry Indicators

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)

Surgery

- Background (Previous surgeries, anesthesia risk class)
- Operation type and concurrent operations (gall bladder removal, appendix removal, etc)
- Perioperative complications
- Surgery data (surgery/anesthesia times, blood loss, etc)
- 6 week follow-up

Source: SOReg: Swedish National Obesity Registry

6-week follow-up

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

1,2 & 5-year follow-up

- Anthropometrics and change from initial
- Labs (diabetes, triglycerides & cholesterol)
- 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)

Source: SOReg: Swedish National Obesity Registry

Principles of Value-Based Health Care Delivery

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4. Drive value improvement by **increasing** provider **experience, scale**, and **learning** at the **medical condition level**
5. Care should be **integrated across facilities** and **across regions**, rather than duplicate services in stand-alone units
6. Value must be **measured** and ultimately **reported** by every provider for each medical condition
7. Reimbursement must be aligned with **value** and reward **innovation**

- **Bundled reimbursement** for **care cycles**, not payment for discrete treatments or services
 - Adjusted for **patient complexity**
 - Most DRG systems are **too narrow**
- Time base bundled reimbursement for **managing chronic conditions**
- Reimbursement for **prevention, wellness, screening**, and **health maintenance** service bundles, not just treatment



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

Principles of Value-Based Health Care Delivery

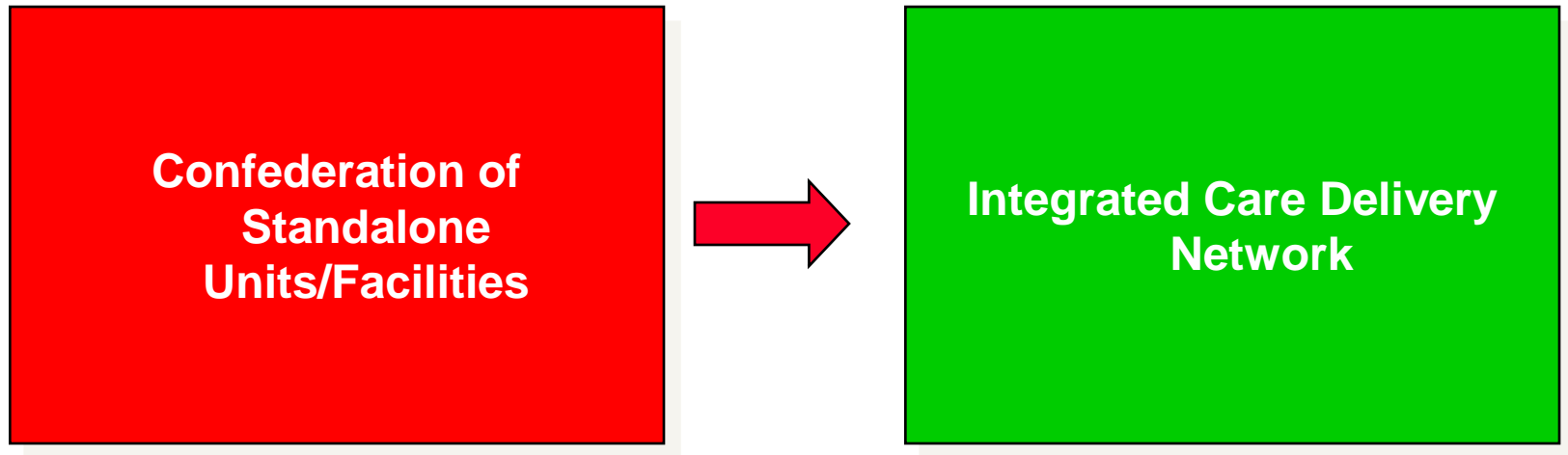
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8. Information technology can enable **restructuring of care delivery** and **measuring results**, but is not a solution by itself

- Common data definitions
- Precise interoperability standards
- Patient-centered data warehouse
- Include all types of data (e.g. notes, images)
- Cover the full care cycle, including referring entities
- Accessible to all involved parties
- Templates for medical conditions which enhance the user interface

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
- Lead the development of **new IPU reimbursement models**
- **Specialize** and **integrate** health systems

System Integration

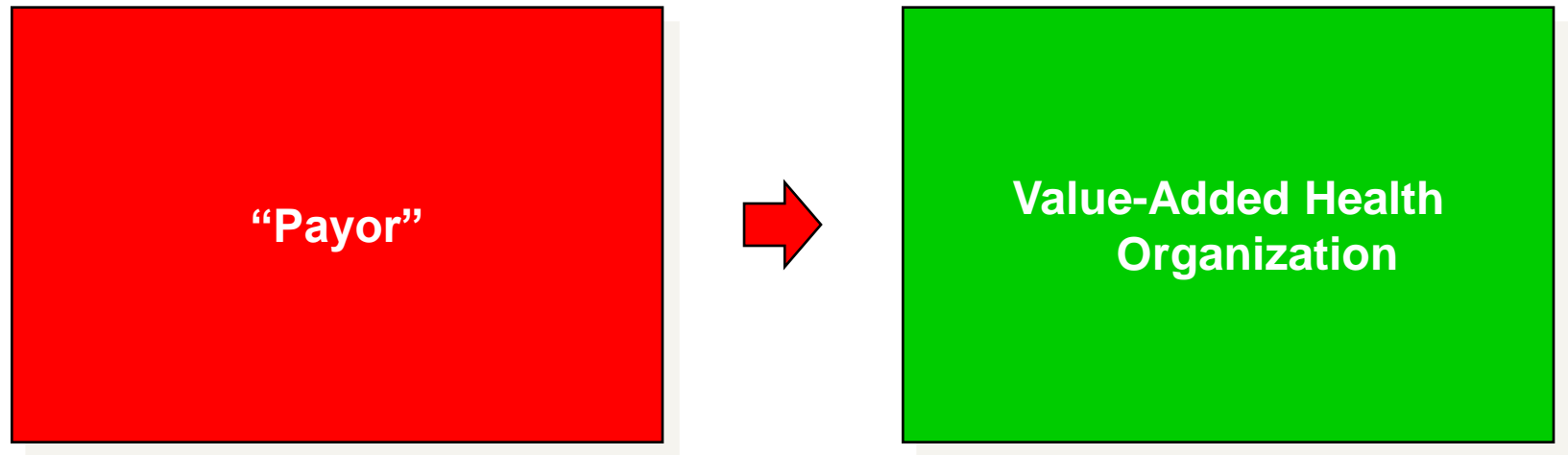


- **Rationalize service lines/ IPU**s across facilities to improve volume, avoid duplication, and achieve excellence
- Offer specific services at the **appropriate facility**
 - e.g. acuity level, cost level, importance of convenience
- Clinically integrate care **across facilities**, but within IPUs
 - Clinical coordination
 - Common organizational unit across facilities
- Link **primary care** to IPUs


Value-Based Health Care Delivery: Implications for Providers

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- Measure **outcomes** and **costs** for every patient
- Lead the development of **new IPU reimbursement models**
- **Specialize** and **integrate** health systems
- Grow high-performance practices **across regions**
- Develop an integrated **electronic medical record** system to support these functions

Value-Based Healthcare Delivery: Implications for Health Plans



Value-Adding Roles of Health Plans

- Measure and report **overall health results** for members by medical condition versus other 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
- 
- Health plans will require **new capabilities** and **new types of staff** to play these roles

Value-Based Health Care Delivery: Implications for Suppliers

- Compete on delivering **unique value** measured over the **full care cycle**
- **Demonstrate value** based on careful study of long term outcomes and costs versus alternative approaches
- Ensure that the products are **used by the right patients**
- Ensure that drugs/devices are embedded in the **right care delivery processes**
- Market based on **value, information, and customer support**
- Offer support services that **contribute to value** rather than reinforce cost shifting
- Move to **value-based pricing**

Value-Based Health Care: Implications for Government

Achieving Universal Insurance

- **Maintain competition** between private and public plans
- Shift insurance competition to **value-based competition for subscribers**
- Build upon the current **employer based system**
- While also creating a viable insurance option for **individuals and small groups**
- Establish large statewide or multi-state **insurance pools**, coupled with a **reinsurance system** for high cost individuals
- Establish **income-based subsidies** on a sliding scale to for lower income individuals
- Once viable insurance options are established, **mandate the purchase of health insurance** by all Americans

Value-Based Health Care: Implications for Government

Restructuring Delivery

- Establish universal and mandatory measurement and reporting of provider **health outcomes**
 - **Experience** reporting as an interim step
- Creation of new integrated delivery models for **prevention, wellness, screening** and **health maintenance**
- Drive **restructuring of health care delivery** around the integrated care of medical conditions
 - Eliminate obstacles such as Stark Laws
- Shift reimbursement systems to **bundled prices for cycles of care** instead of payments for discrete treatments or services
- **Open up value-based competition** for patients within and across state boundaries
- Mandate **HIT** that enables integrated care and supports outcome measurement
 - National standards for data, communication, and aggregation
- Establish greater **responsibility of individuals** for their health and health care

How Will Redefining Health Care Begin?

- It is **already happening** in the U.S. and other countries
- Steps by pioneering institutions will be **mutually reinforcing**
- Once competition begins working, value improvement will **no longer be discretionary**
- Those organizations that **move early** will gain major benefits



- **Providers** can and should take the lead