

# Value-Based Health Care Delivery

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Harvard Business School

*Introduction to Global Health Delivery*  
*July 6, 2009*

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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>.

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# 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

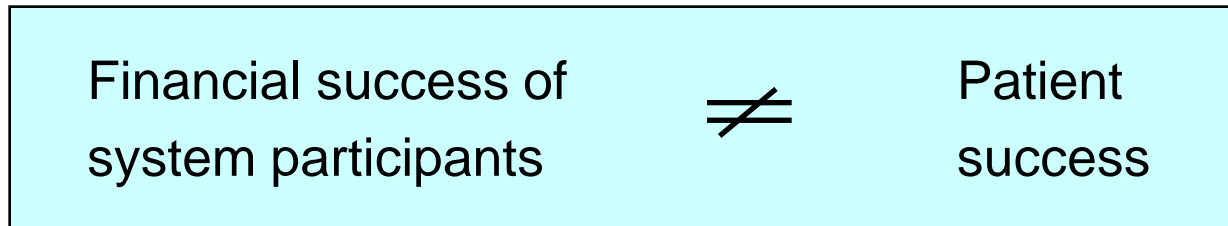
- Significant improvement in value will require **fundamental restructuring of health care delivery**, not incremental improvements

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

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



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

# 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 volume of care or containing costs

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



- 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. Use **quality improvement** to drive cost containment and value improvement, 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

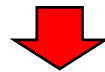


- **Better health** is the goal, not more treatment
- Better health is **inherently less expensive** than poor health

# Principles of Value-Based Health Care Delivery

1. Set the goal as **value for patients**, not containing costs
2. Use **quality improvement** to drive cost containment and value improvement, where quality is **health outcomes**
3. Reorganize health care delivery 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

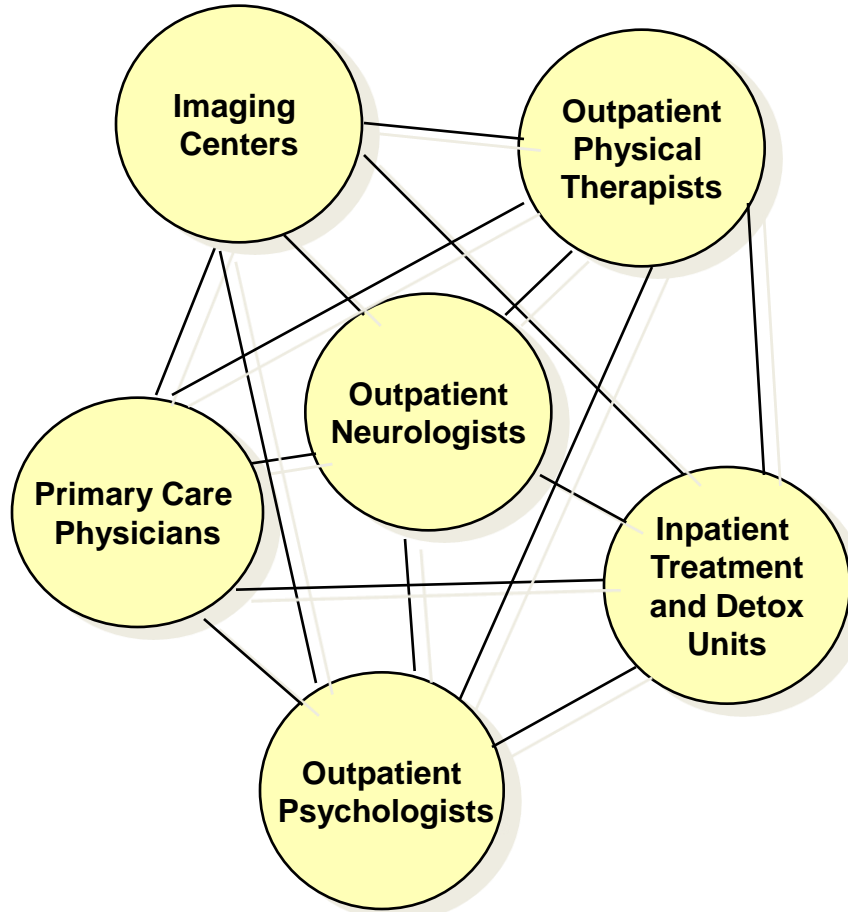


# Restructuring Care Delivery

## Migraine Care in Germany

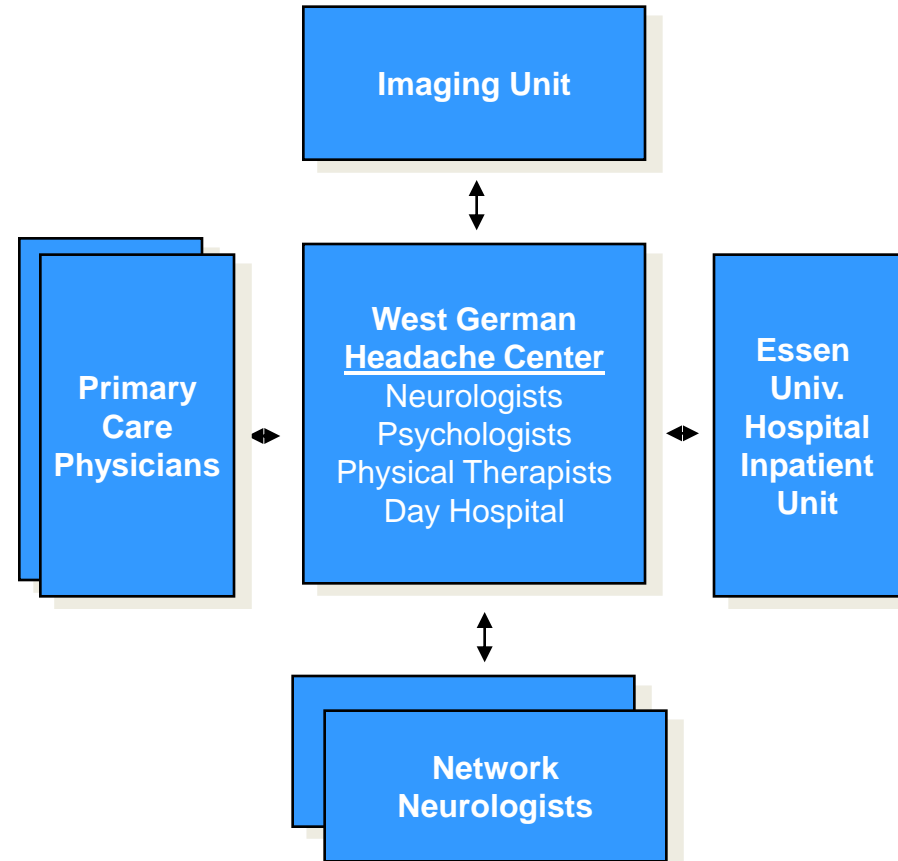
### Existing Model:

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

# The Cycle of Care

## Breast Cancer

<b>ENGAGING</b>	<ul style="list-style-type: none"> <li>▪ Advice on Self screening</li> <li>▪ Consultations on risk factors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Counseling patient and family on the diagnostic process and the diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Explaining patient choices of treatment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Counseling on the treatment process</li> <li>▪ Achieving compliance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Counseling on rehabilitation options, process</li> <li>▪ Achieving compliance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Counseling on long term risk management</li> <li>▪ Achieving Compliance</li> </ul>
			<ul style="list-style-type: none"> <li>▪ Patient and family psychological counseling</li> </ul>		<ul style="list-style-type: none"> <li>▪ Psychological counseling</li> </ul>	
<b>MEASURING</b>	<ul style="list-style-type: none"> <li>▪ Self exams</li> <li>▪ Mammograms</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mammograms</li> <li>▪ Ultrasound</li> <li>▪ MRI</li> </ul>		<ul style="list-style-type: none"> <li>▪ Procedure-specific measurements</li> </ul>	<ul style="list-style-type: none"> <li>▪ Range of movement</li> <li>▪ Side effects measurement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Recurring mammograms (every six months for the first 3 years)</li> </ul>
		<ul style="list-style-type: none"> <li>▪ Biopsy</li> <li>▪ BRACA 1, 2...</li> </ul>				
<b>ACCESSING</b>	<ul style="list-style-type: none"> <li>▪ Office visits</li> <li>▪ Mammography lab visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Office visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Office visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hospital stays</li> </ul>	<ul style="list-style-type: none"> <li>▪ Office visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Office visits</li> </ul>
		<ul style="list-style-type: none"> <li>▪ Lab visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hospital visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Visits to outpatient or radiation chemotherapy units</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rehabilitation facility visits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lab visits</li> <li>▪ Mammographic labs and imaging center visits</li> </ul>
		<ul style="list-style-type: none"> <li>▪ High risk clinic visits</li> </ul>				
	<b>MONITORING/ PREVENTING</b>	<b>DIAGNOSING</b>	<b>PREPARING</b>	<b>INTERVENING</b>	<b>RECOVERING/ REHABING</b>	<b>MONITORING/ MANAGING</b>
	<ul style="list-style-type: none"> <li>▪ Medical history</li> <li>▪ Control of risk factors (obesity, high fat diet)</li> <li>▪ Genetic screening</li> <li>▪ Clinical exams</li> <li>▪ Monitoring for lumps</li> </ul>	<ul style="list-style-type: none"> <li>▪ Medical history</li> <li>▪ Determining the specific nature of the disease</li> <li>▪ Genetic evaluation</li> <li>▪ Choosing a treatment plan</li> </ul>	<ul style="list-style-type: none"> <li>▪ Surgery prep (anesthetic risk assessment, EKG)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Surgery (breast preservation or mastectomy, oncoplastic alternative)</li> </ul>	<ul style="list-style-type: none"> <li>▪ In-hospital and outpatient wound healing</li> <li>▪ Treatment of side effects (e.g. skin damage, cardiac complications, nausea, lymphodema and chronic fatigue)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Periodic mammography</li> <li>▪ Other imaging</li> </ul>
			<ul style="list-style-type: none"> <li>▪ Plastic or onco-plastic surgery evaluation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adjuvant therapies (hormonal medication, radiation, and/or chemotherapy)</li> </ul>		<ul style="list-style-type: none"> <li>▪ Follow-up clinical exams</li> <li>▪ Treatment for any continued side effects</li> </ul>
					<ul style="list-style-type: none"> <li>▪ Physical therapy</li> </ul>	

**PROVIDER MARGIN**

Breast Cancer Specialist  
 Other Provider Entities

# 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
- Simply forcing consumers to pay more is a **false solution**



- **IPUs** will improve patient engagement

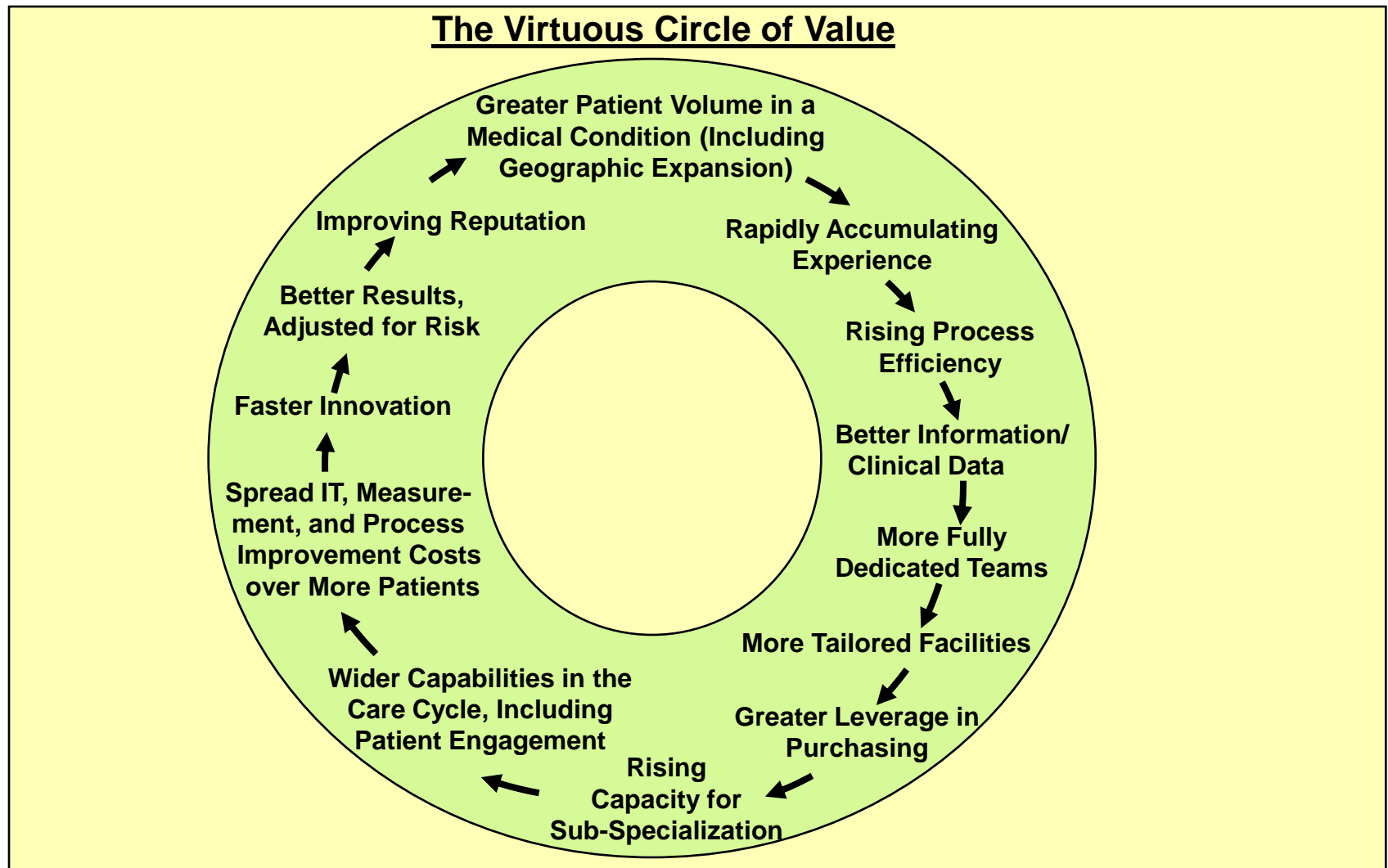
# Primary Care as a Medical Condition

## Prevention, Screening, Wellness, and Health Maintenance

- Today's primary care structures are **fragmented** and attempt to address **overly broad** needs with limited resources
  - Primary care should involve **defined sets of prevention, screening, wellness, and health maintenance (PSH) services** in organizations with sufficient expertise and support staff to achieve high value
- 
- PSH IPU should combine the **range of expertise, support staff and facilities** needed to deliver high value
  - PSH care delivery organizations should focus on **specific patient populations** (e.g. healthy adults, frail elderly, type II diabetes) rather than attempt to be all things to all patients
  - Primary care delivery structures should involve the **workplace, community organizations, and other non traditional settings** to leverage the efficiency and effectiveness of regular patient contact and the ability to develop a group culture of wellness

# Principles of Value-Based Health Care Delivery

4. **Increase** provider **experience**, **scale**, and **learning** to drive value 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 / year nationwide	Number of admitting providers	Average admissions/ provider/ year	Average admissions/ provider/ week	Average percent of total national admissions/ 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

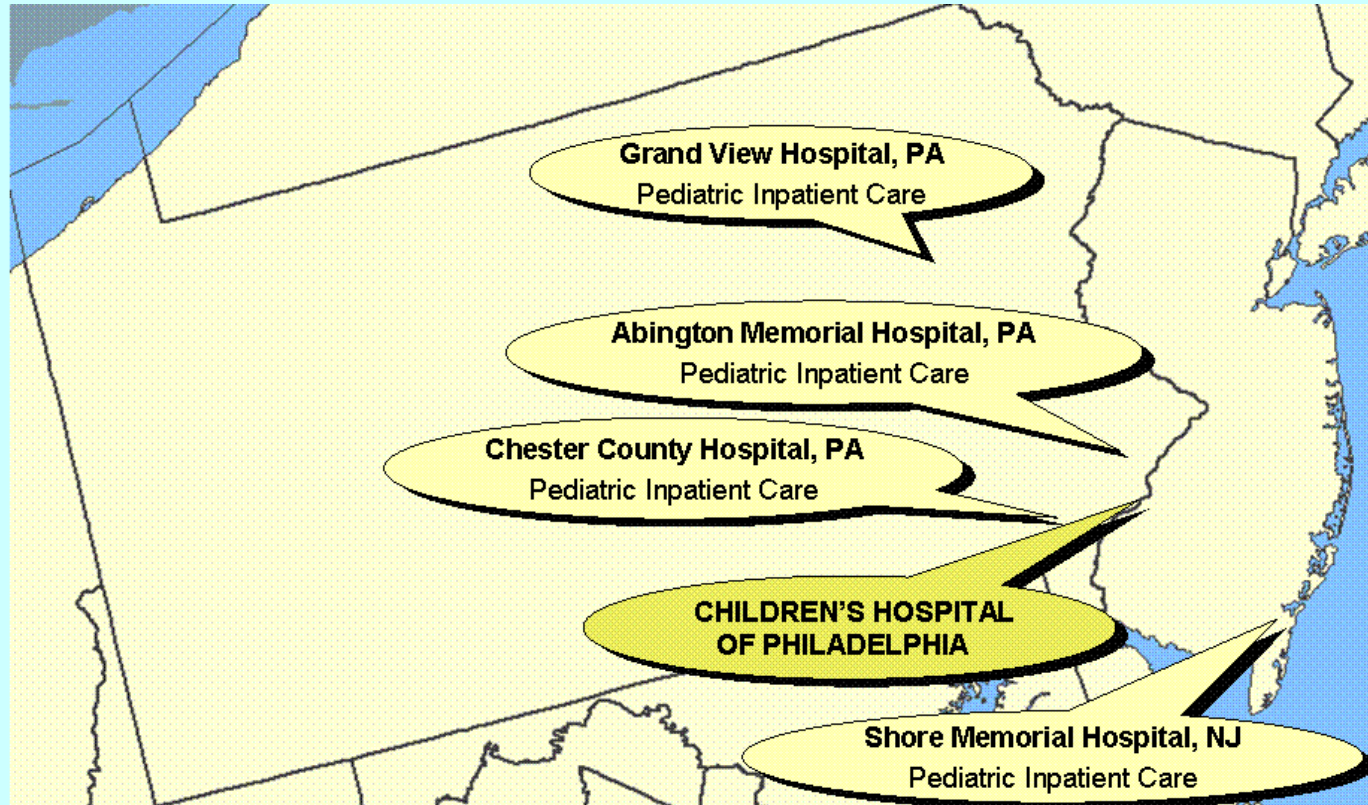
<b>Procedure</b>	<b>Number of hospitals performing the procedure</b>	<b>Average number of procedures per provider per year</b>	<b>Average number of procedures per provider per week</b>
Craniotomy	1,098	71	0.5
Operation for gastric cancer	2,336	72	0.5
Operation for lung cancer	710	46	0.3
Joint replacement	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

# Principles of Value-Based Health Care Delivery

5. **Integrate care 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**



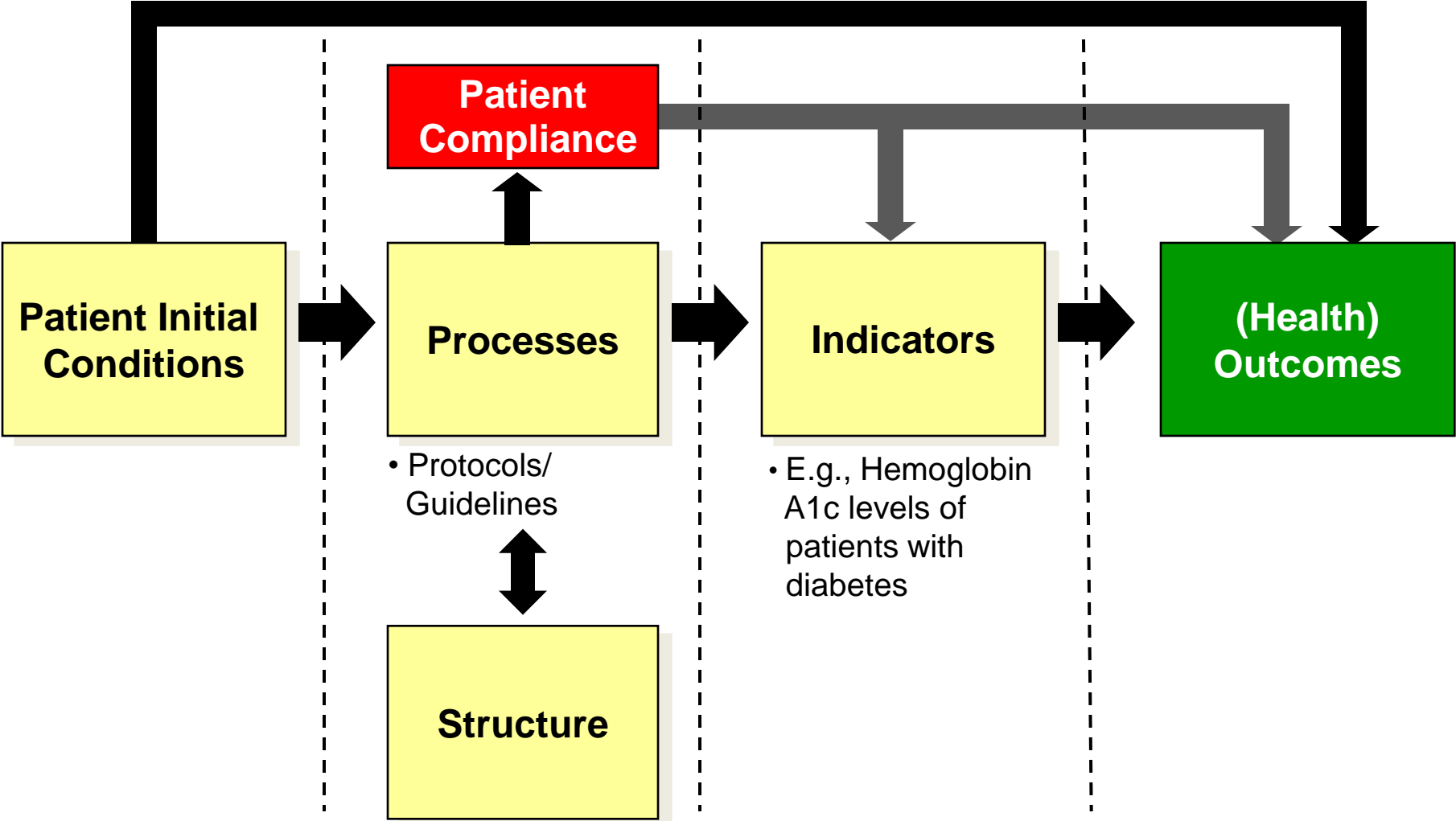
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2. Use **quality improvement** to drive cost containment (and value improvement), where quality is health **outcomes**
3. Reorganize health care delivery around **medical conditions** over the **full cycle of care**
4. **Increase** provider **experience**, **scale**, and **learning** to drive value at the **medical condition level**
5. **Integrate care across facilities** and **across regions**, rather than duplicate services in stand-alone units
6. **Measure** and ultimately **report** value for every provider for every medical condition

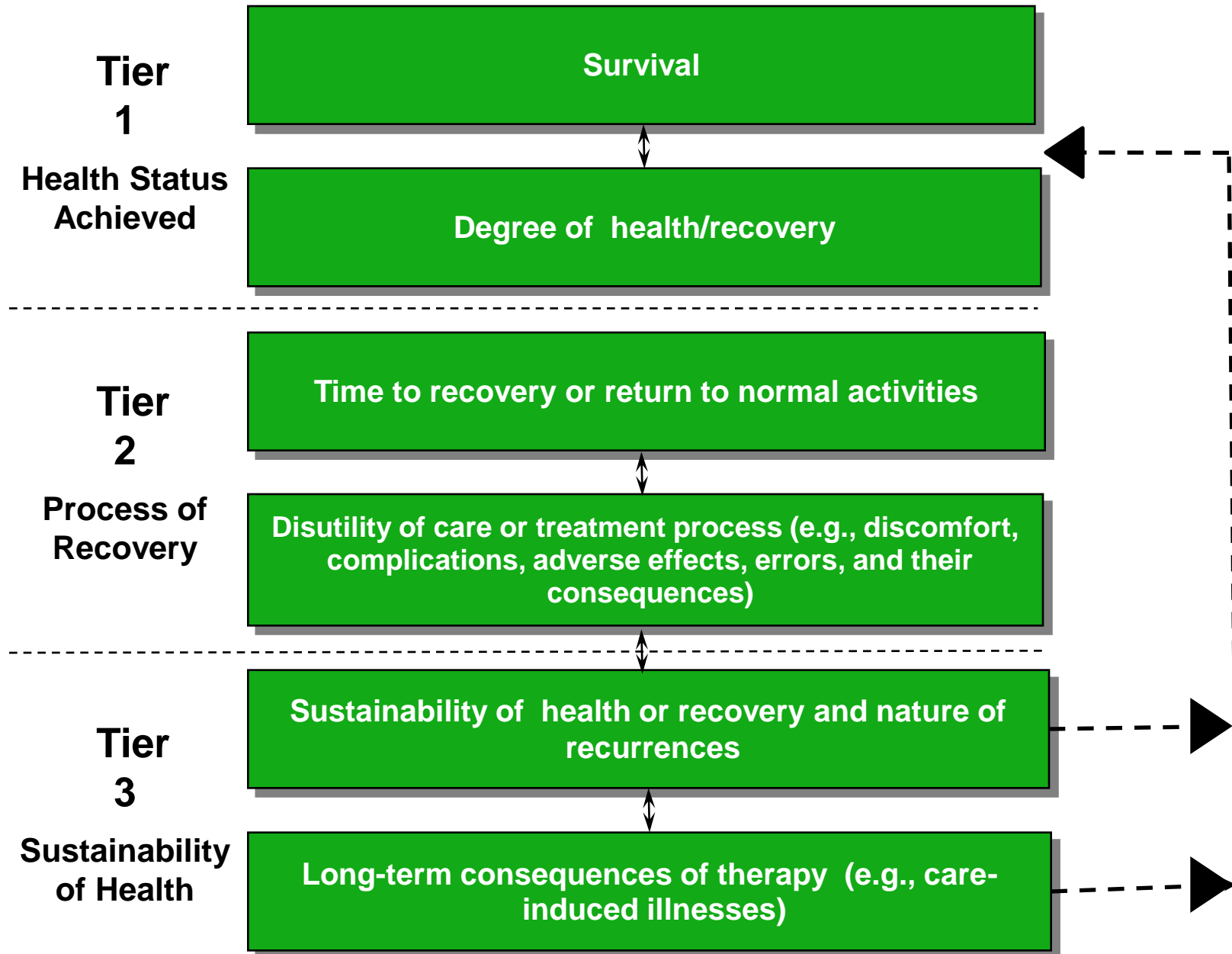


- Outcomes should be measured for each **medical condition** over the **cycle of care**
  - Not for interventions or short episodes
  - Not for practices, departments, clinics, or hospitals
  - Not separately for types of service (e.g. inpatient, outpatient, tests, rehabilitation)
- Results must be measured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

# Measuring Value in Health Care



# The Outcome Measures Hierarchy



# 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)
- Background (Previous surgeries, anesthesia risk class)

## Surgery

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

Source: SOReg: Swedish National Obesity Registry

## **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)

## **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)

Source: SOReg: Swedish National Obesity Registry

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6. **Measure** and ultimately **report** 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
- Time-base bundled reimbursement for **managing chronic conditions**
- Reimbursement for defined **prevention, wellness, screening, and health maintenance** service bundles



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

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6. **Measure** and ultimately **report** 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

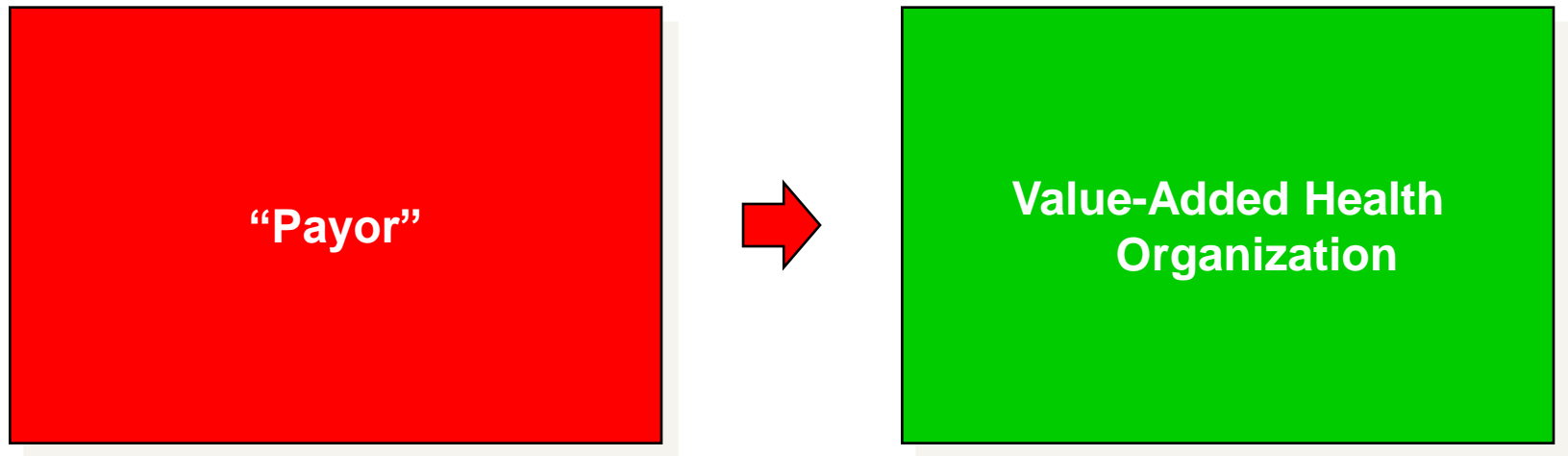
- Common data definitions
- Precise interoperability standards
- Architecture to combine all types of data (e.g. notes, images) for each patient
- Encompass the full care cycle, including referring entities
- Templates for medical conditions to enhance the user interface
- Accessible to all involved 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**
- **Specialize** and **integrate** services across facilities
  - **Rationalize service lines/ IPUs** across facilities to improve volume, avoid duplication, and enable excellence
  - Offer specific services at the **appropriate facility**
    - e.g. acuity level, cost level, benefits of convenience
  - Clinically integrate care **across facilities** within an IPU structure
    - Common organizational unit across facilities
  - Link **preventative/primary care** units to 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



# The Developed World and Resource-Poor Settings Suffer from Similar Delivery Problems

## Current Model

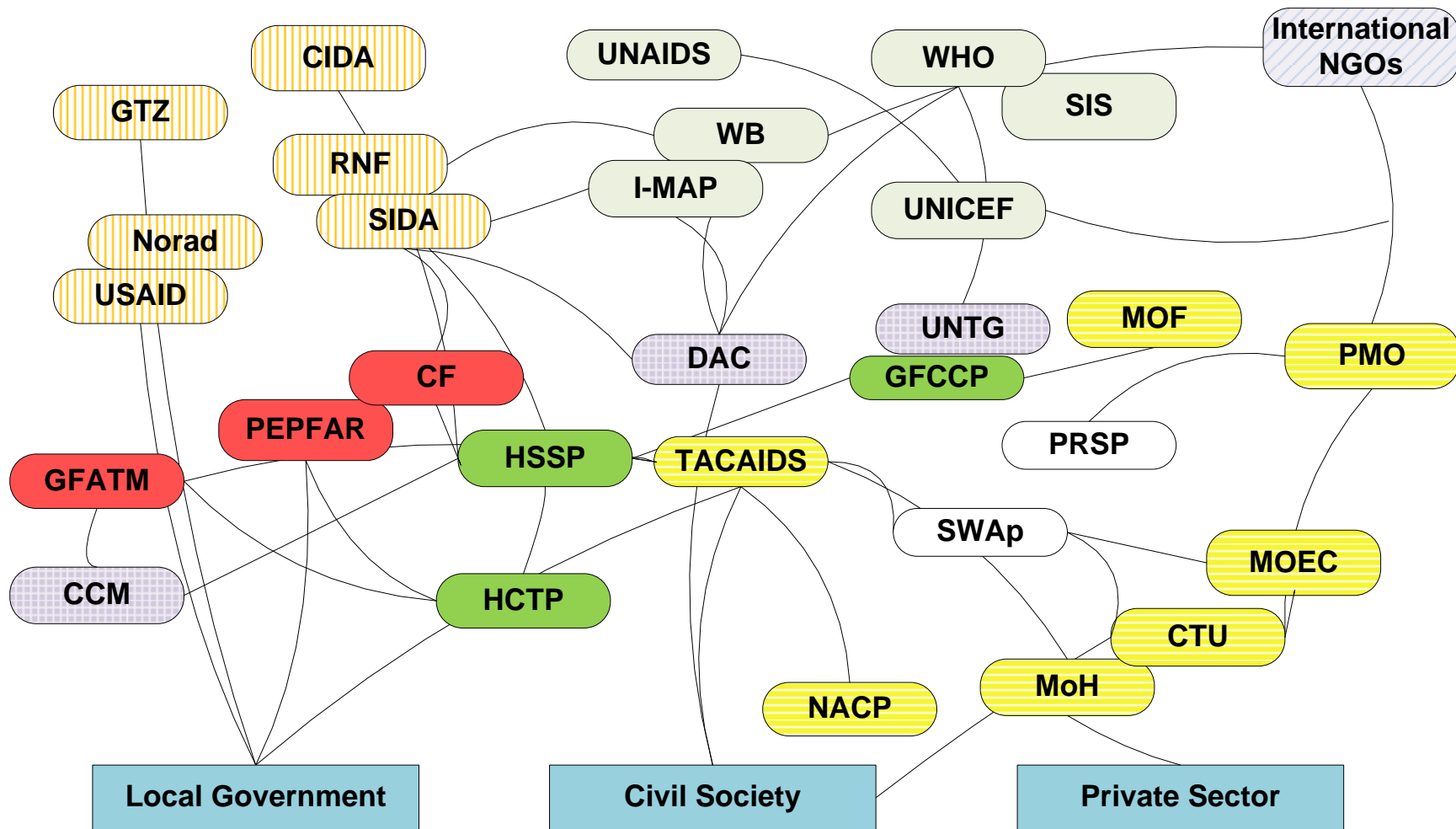
- The product is **treatment**
- Measure **volume** of services (# tests, treatments)
- Focus on overall facilities, **specialties** or **types** of practitioners
- Discrete **interventions**
- **Individual** diseases or overall facilities
- **Fragmented, localized,** pilots. programs and entities



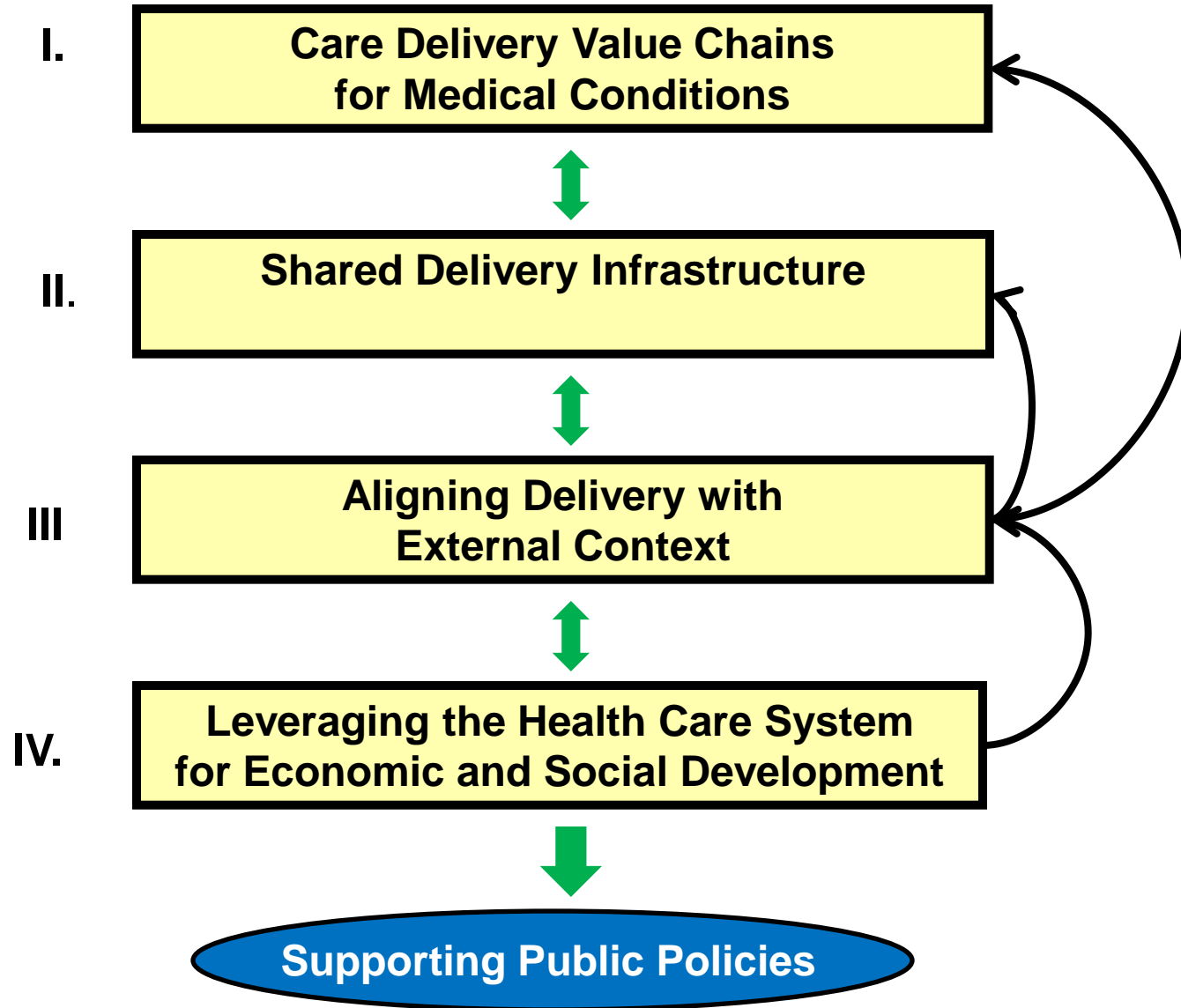
## New Model

- The product is **health**
- Measure **value** of services (health outcomes per unit of cost)
- **Coordinated** and **integrated** care delivery
- **Care cycles**
- Sets of prevalent **co-occurrences**
- **Integrated** care delivery systems

# Relationships Between Various Stakeholders in Tanzania

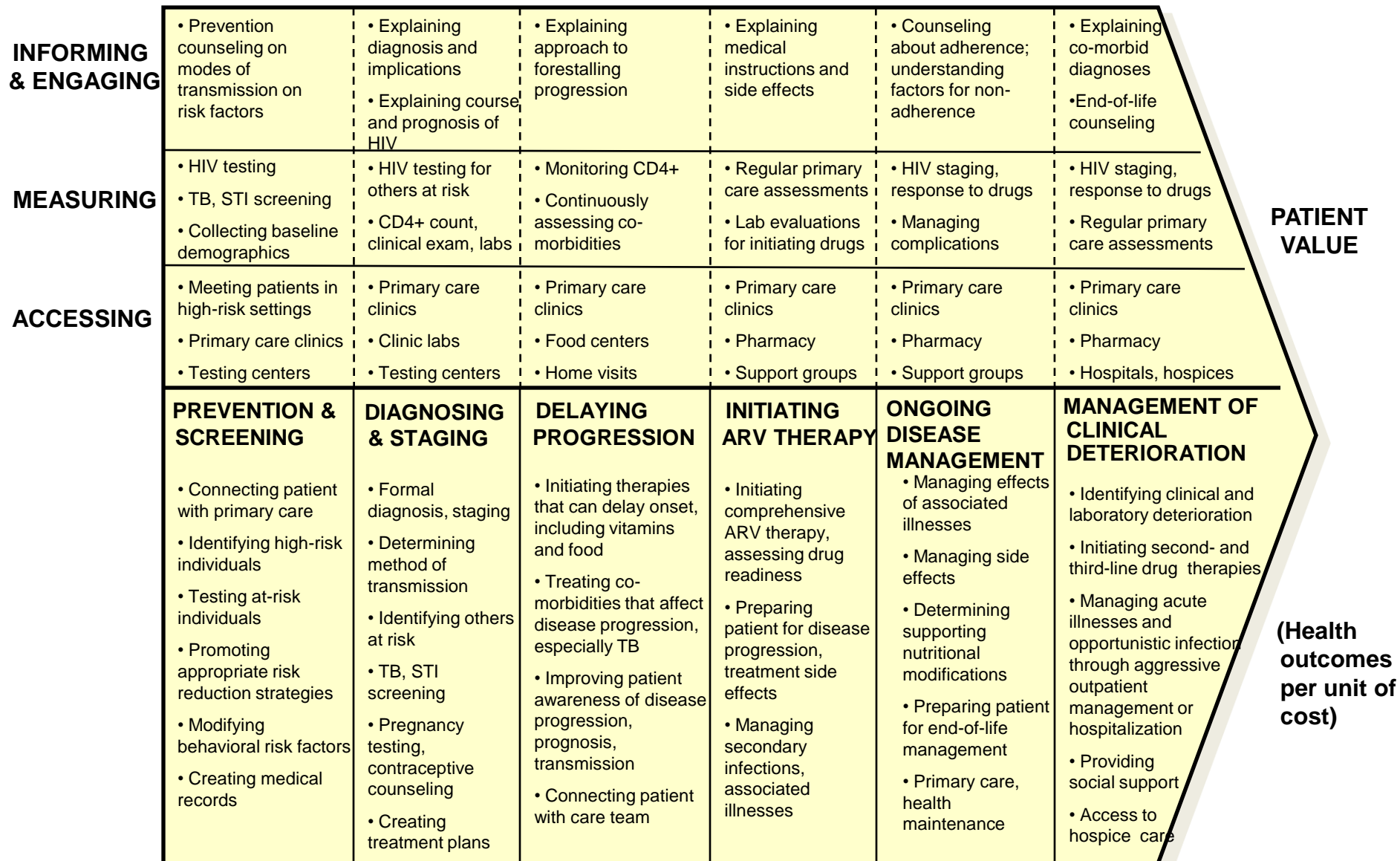


# A Framework for Global Health Delivery



# The Care Delivery Value Chain

## HIV/AIDS



**PATIENT VALUE**

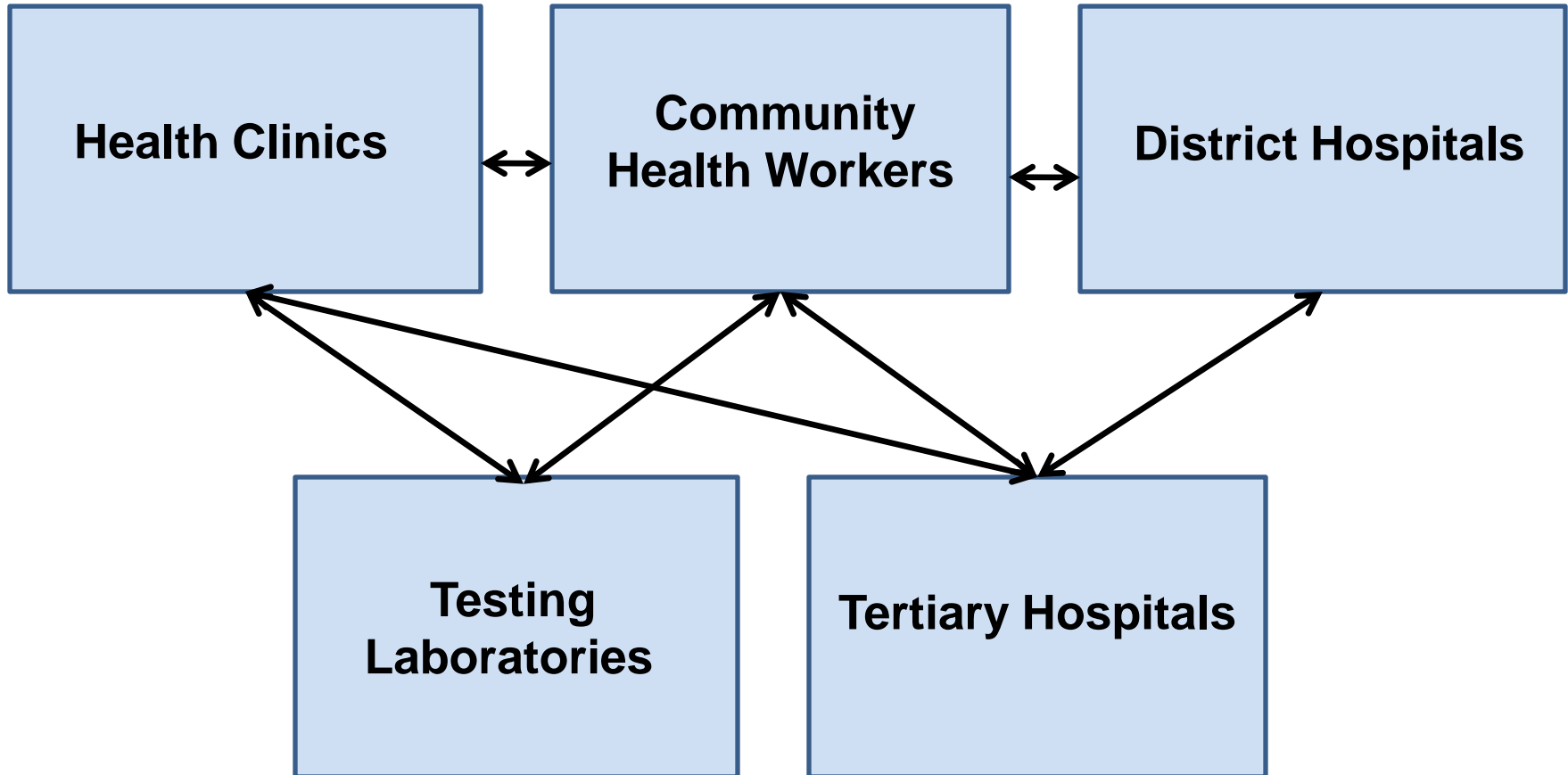
**(Health outcomes per unit of cost)**

# Care Delivery Value Chain

## Implications for HIV/AIDS Care

- **Early diagnosis** helps in forestalling disease progression
- **Intensive evaluation and treatment at the time of the diagnosis** can forestall disease progression
- **Improving compliance with first stage drug therapy** lowers drug resistance and the need to move to more costly second line therapies

# Shared Delivery Infrastructure

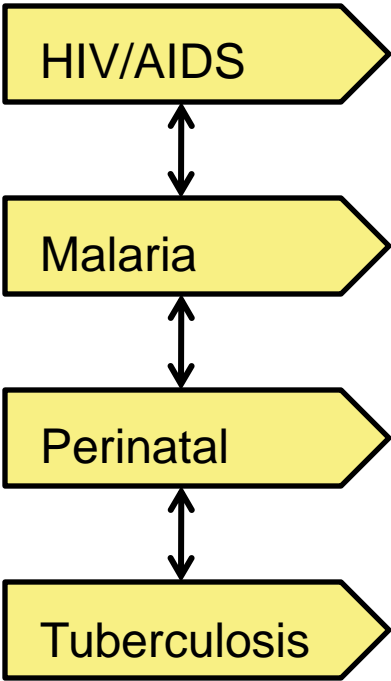


## Cross Cutting Issues

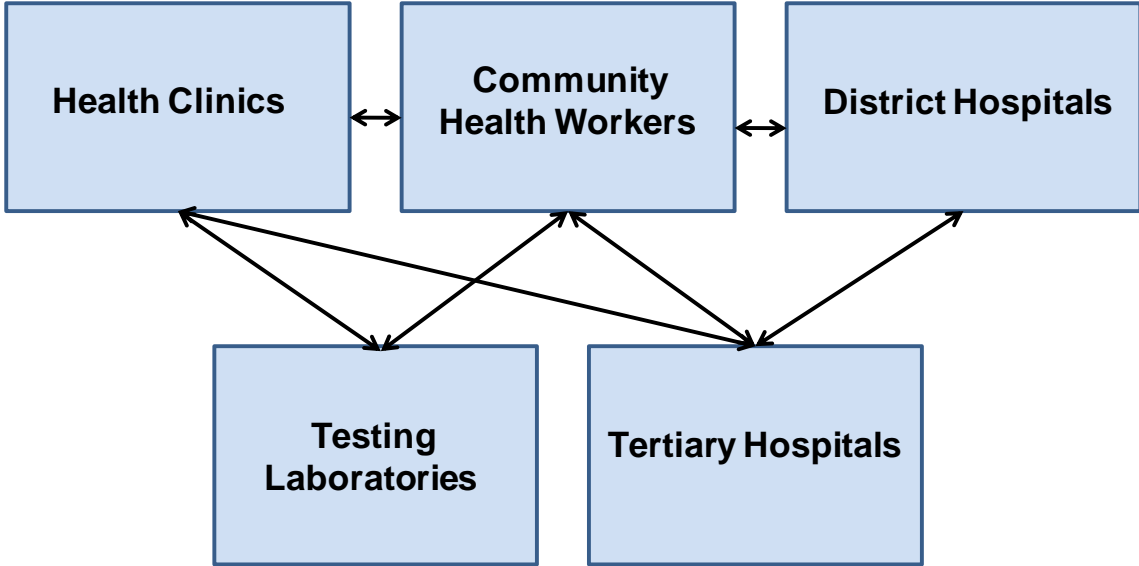
- Supply Chain Management
- Human Resource Development
- Insurance and Financing

# Integrating “Vertical” and “Horizontal”

## Care Delivery Value Chains



## Shared Delivery Infrastructure



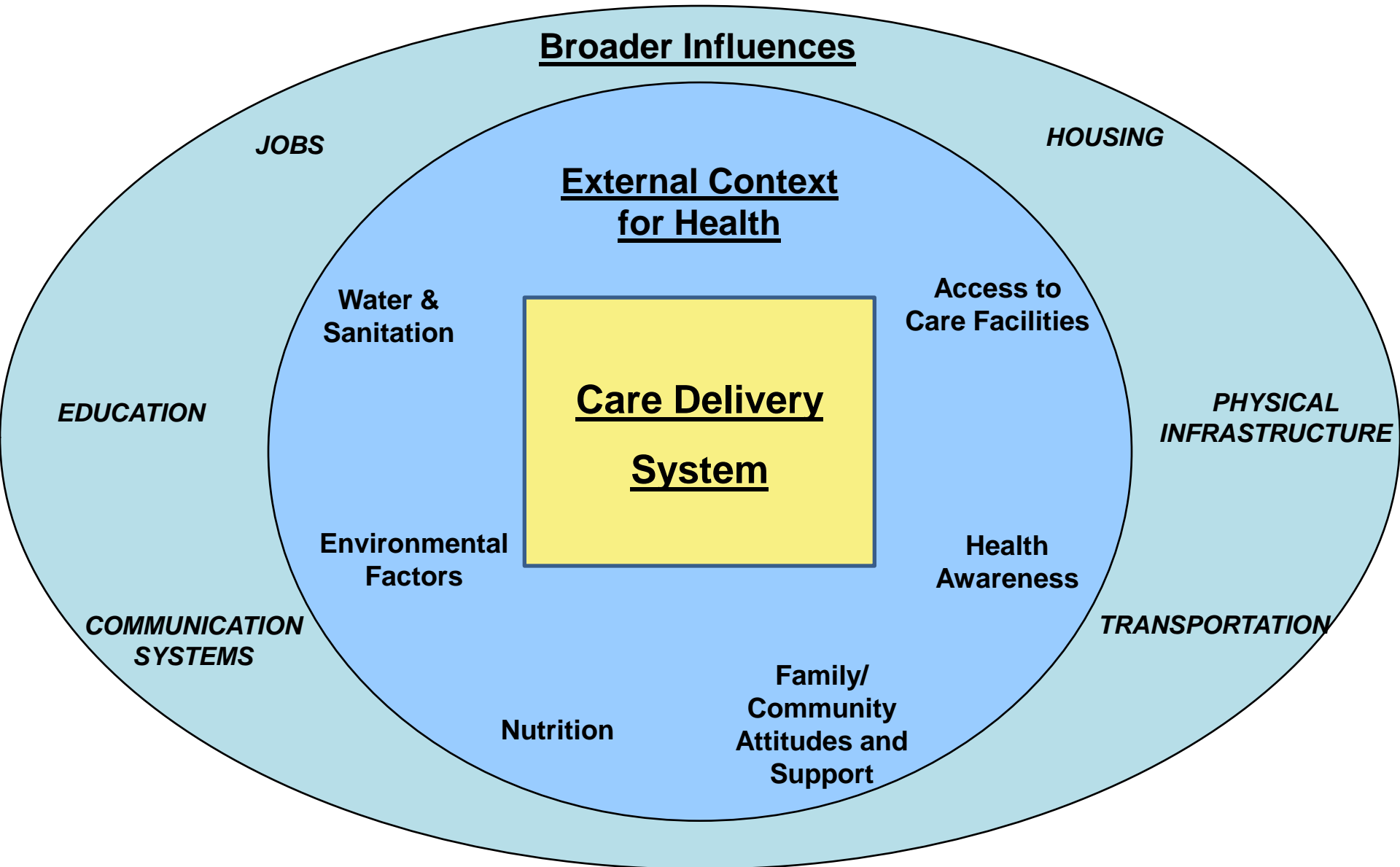


# Shared Delivery Infrastructure

## Implications for HIV/AIDS Care


- Screening is most effective when **integrated into a primary health care system**
- Providing **maternal and child health** care services is integral to the HIV/AIDS care cycle by substantially **reducing the incidence of new cases of HIV**
- Community health workers not only improve compliance with ARV therapy but can **simultaneously address other conditions**

# Integrating Delivery and Context



# Integrating Care Delivery and Social/Economic Context

## Implications for HIV/AIDS Care

- Community health workers can have a major role in **overcoming transportation and other barriers to access and compliance** with care
  - Providing nutrition support can be important to **success in ARV therapy**
  - Integrating HIV screening and treatment into routine primary care facilities can help address the **social stigma** of seeking care for HIV/AIDS
  - Gender dynamics **limit the use of prevention options** in some settings
- 
- Management of **social** and **economic barriers** is critical to the treatment and prevention of HIV/AIDS

# The Relationship Between Health Systems and Economic Development

## Better Health Enables Economic Development

- Enables people to work
- Raises productivity

## Health System Development **Fosters** Economic Development

- Direct employment (health sector jobs)
- Local procurement
- Catalyst for infrastructure (e.g. cell towers, internet, and electrification)

# A New Field in Global Health

