

Redefining Global Health Care

Narrowing the Gap Between Aspiration and Action

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Global Health Delivery Case Discussion

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Gaps in health financing, human resources, and access to care have **fatal consequences** for millions in developing countries

- **Millions of deaths from preventable & treatable causes**

- 6.3 million preventable childhood deaths
- ½ million maternal deaths
- 3 million HIV deaths – less than 1-in-8 on treatment
- 2 million tuberculosis deaths
- 1 million malaria deaths - mostly children

→ **Over 10 million needless deaths each year**

...from conditions for which safe, effective, affordable prevention & treatment exist



the implementation bottleneck

- Vaccines
- Primary Health Care
- Drug Therapies
- Maternal and Child Health Care
- Basic Surgery





investment

Bill and Melinda Gates Foundation **\$6.5 B**

The Global Fund **\$8.6 B**

President's Emergency Plan for AIDS **\$15 B**

International Finance Facility **\$4 B**

Multi-Country HIV/AIDS Program **\$1.1 B**

Global Alliance **\$3 B**

Public-private partnerships **\$1.2 B**

Anti-Malaria Initiative in Africa (proposed) **\$1.2 B**

United Nations Fund **\$360 M**

Warren Buffet **\$37 B**

TOTAL \$77.7 B

*Funds pledged, committed, or spent. Overlap exists between organizations (e.g., PEPFAR money supports the Global Fund).

Adapted from Jon Cohen, The new world of global health. *Science* 2006;311(5758):162-167.



the implementation bottleneck

- Vaccines
- Primary Health Care
- Drug therapies
- Maternal Child Health Care
- Basic Surgery

New Developments:

- Microbicides and other preventive tools
- New malaria and TB drugs, diagnostics
- New combination therapies
- Drugs for neglected diseases
- >10 new vaccines



Global Health Delivery Failures



Intervention

ARVs for PMTCT

Reduce HIV transmission by 40%

Implementation

9% coverage of women overall and **50%** of women who test positive in a clinic are given ARVs for PMTCT



ITNs for Malaria Prevention

Reduce infant mortality by 23%

Only **3%** of children in endemic areas sleep under nets

Source: WHO



Global Health “Strategy” to Date

- Countries and even districts working in isolation
- Intervention-based
- Project-based
 - Donor preference driven
 - Experimental pilots that never scale
- Resources often diverted for overhead and consultants
- Broad policy guidelines and plans for investment in facilities, equipment, and human resources
- Competition among implementers
- Parallel systems
- Cottage industry approach to care delivery
- Fragmentation of services
- Absence of results and measurement

Antiretroviral
Therapy

Condom
Distribution

HIV/AIDS
Fieldworkers

Corporate
Involvement

Clinic
Construction

Educational
Campaigns

- **Clear need for a better approach**

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

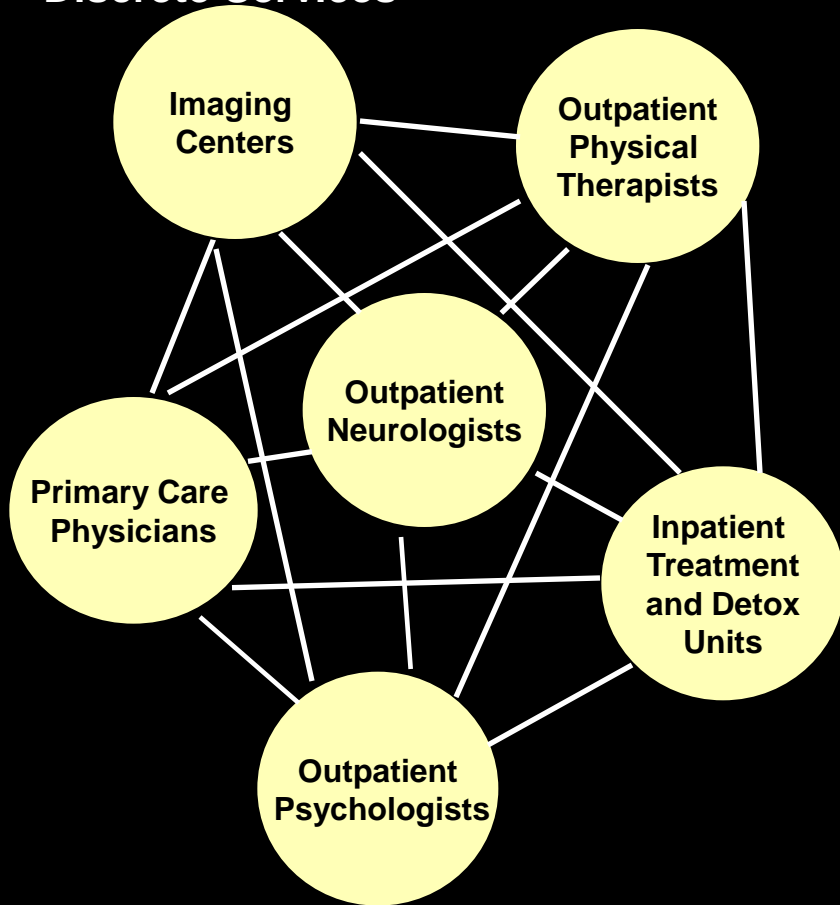


Restructuring Care Delivery

Migraine Care in Germany

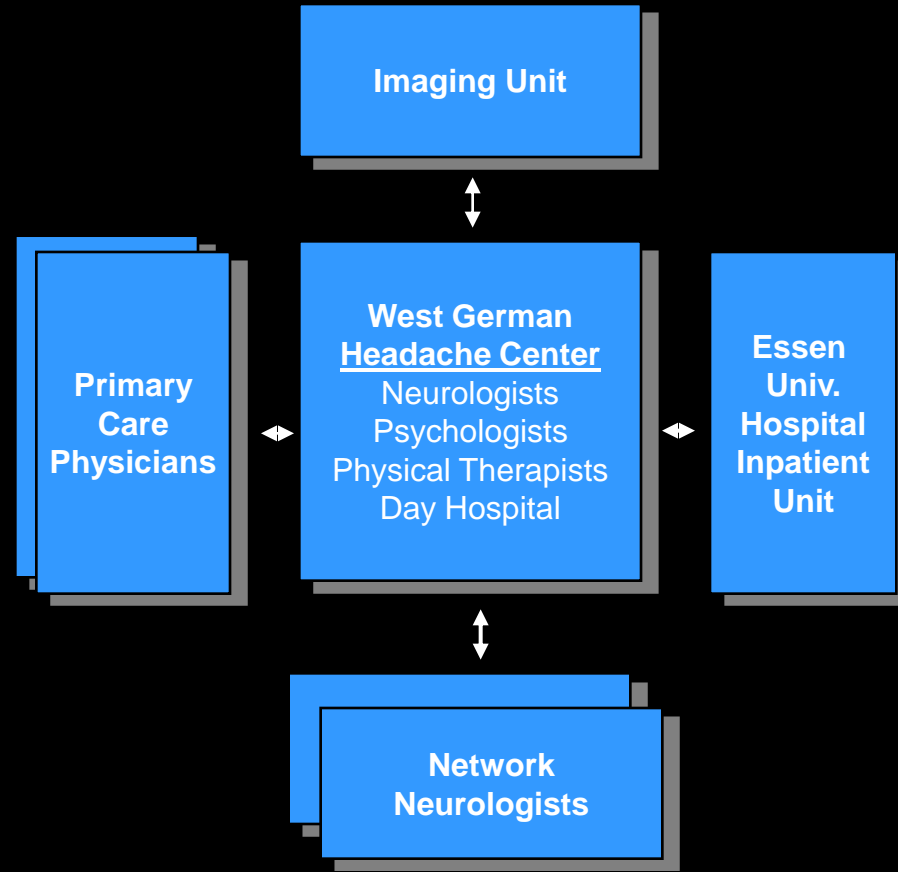
Existing Model:

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 • Consultation 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 	
	MEASURING	<ul style="list-style-type: none"> • Self exams • Mammograms 	<ul style="list-style-type: none"> • Mammograms • Ultrasound • MRI • Biopsy • BRACA 1, 2... 	<ul style="list-style-type: none"> • Patient and family psychological counseling 	<ul style="list-style-type: none"> • Procedure-specific measurements 	<ul style="list-style-type: none"> • Psychological counseling 	<ul style="list-style-type: none"> • Range of movement • Side effects measurement
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 	<ul style="list-style-type: none"> • Hospital stay • Visits to outpatient or radiation chemotherapy units 	<ul style="list-style-type: none"> • Office visits • Rehabilitation facility visits 	<ul style="list-style-type: none"> • Office visits • Lab visits • Mammographic labs and imaging center visits 	
	MONITORING/PREVENTING	<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) • Plastic or oncologic surgery evaluation 	<ul style="list-style-type: none"> • Surgery (breast preservation or mastectomy, oncologic 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, lymphedema and chronic fatigue) • Physical therapy 	<ul style="list-style-type: none"> • Periodic mammography • Other imaging • Follow-up clinical exams • Treatment for any continued side effects

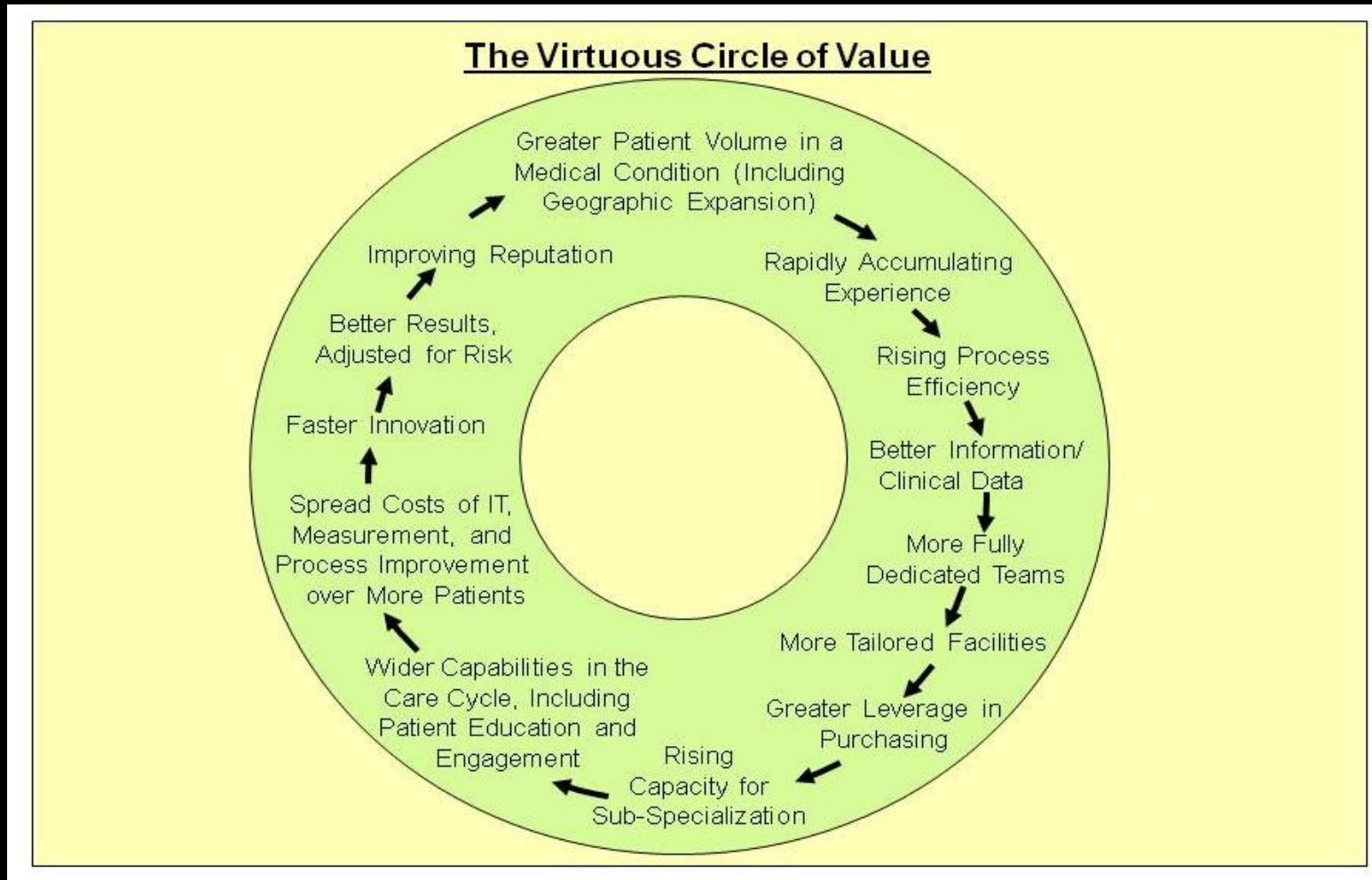
PROVIDER

MARGIN

- Breast Cancer Specialist
- Other Provider Entities

Principles of Value-Based Health Care Delivery

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

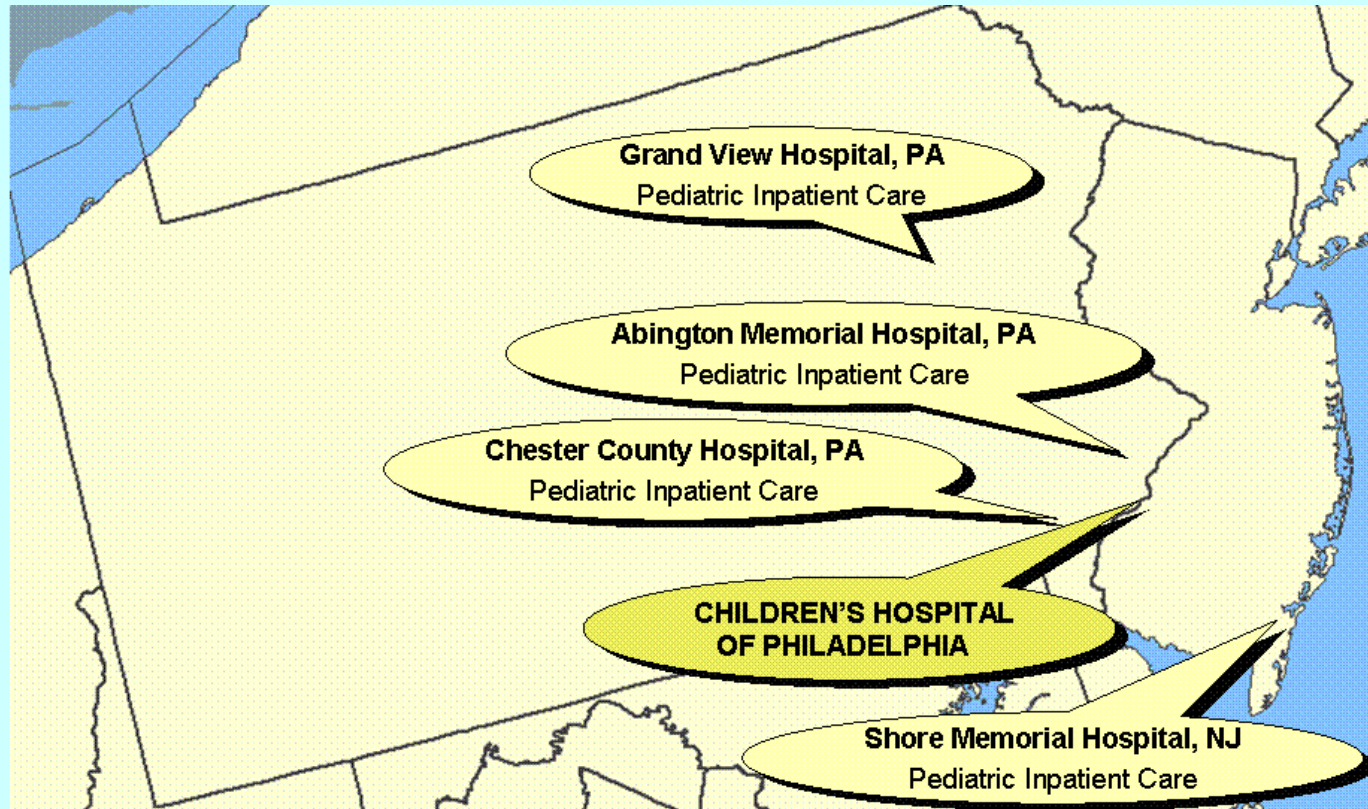
DRG	Total admissions per year nationwide	Number of admitting providers	Average admissions/ provider / year	Average admissions/ provider / week	Average percent of total national admissions per provider
Diabetes age > 35	7,649	80	96	2	1.3%
Kidney failure	7,742	80	97	1	1.3%
Multiple sclerosis and cerebellar 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.

Principles of Value-Based Health Care Delivery

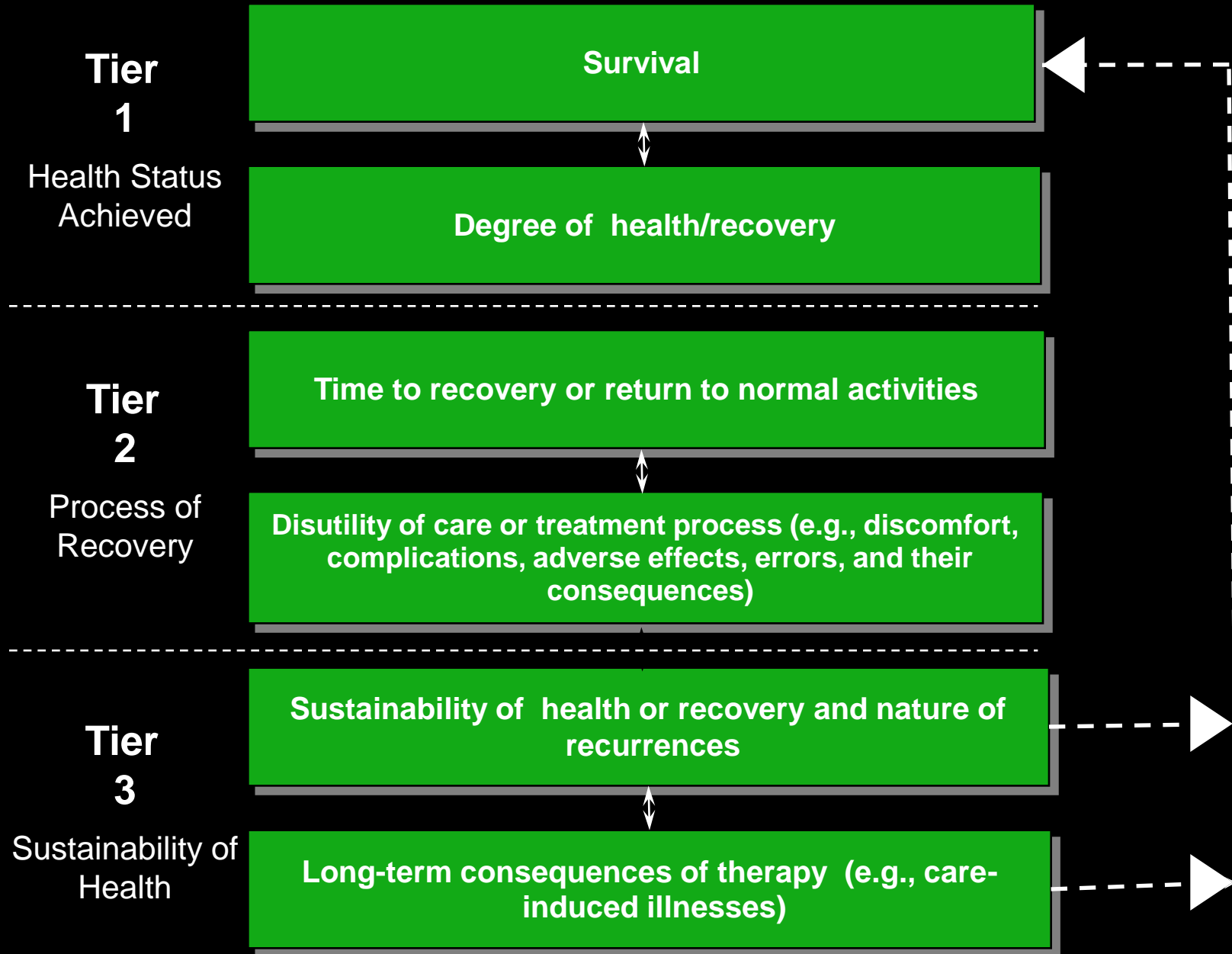
Care should be **integrated across facilities** and **across regions**, rather than duplicate services in stand-alone units

Children's Hospital of Philadelphia (CHOP) Affiliations



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

The Outcome Measures Hierarchy



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 facilities, **specialties** or **types** of practitioners
- Discrete **interventions**
- Individual diseases
- **Fragmented** programs and entities
- **Localized** pilots and demonstration projects

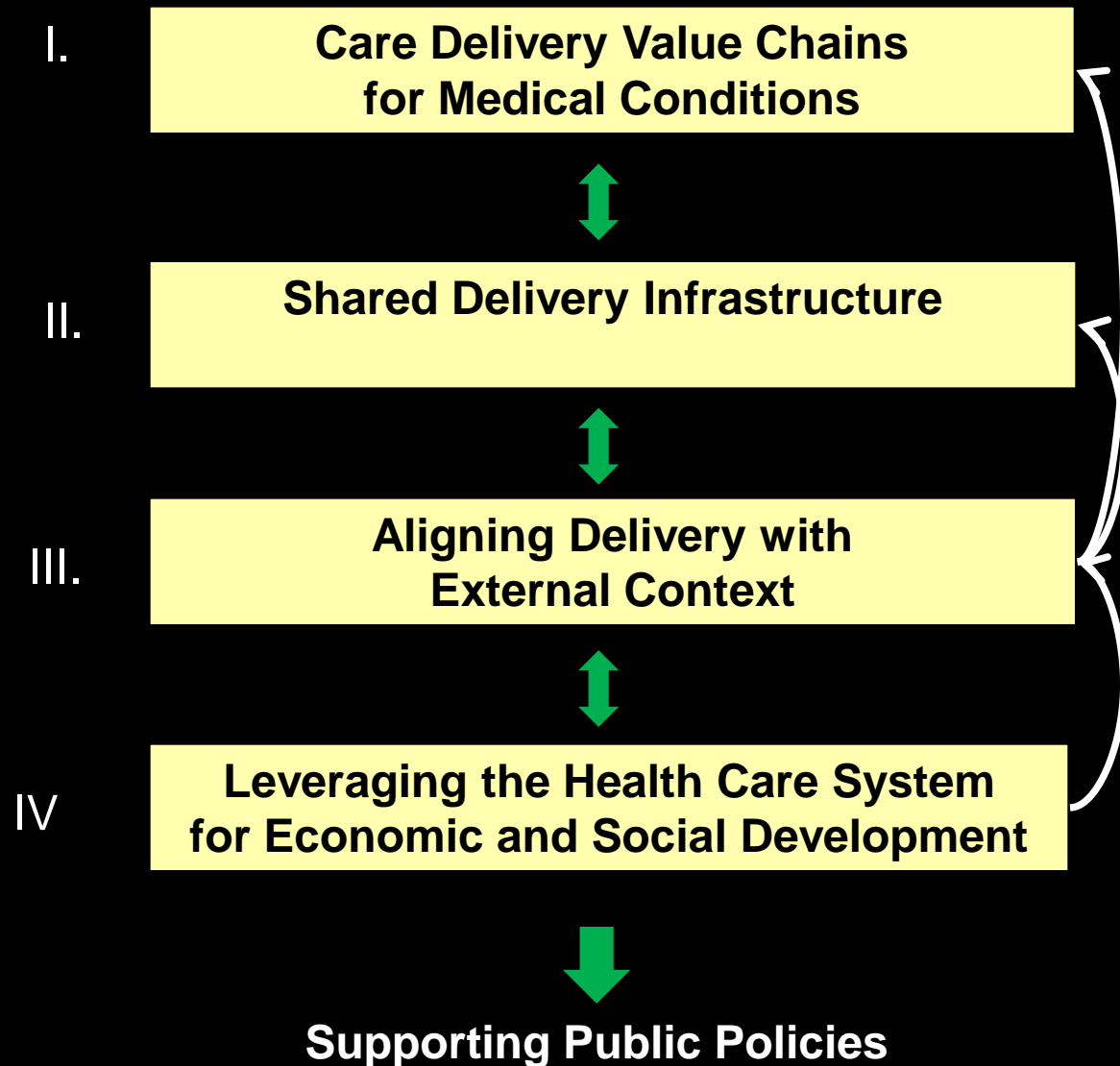


New Model

- 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
- Integrated **systems across communities** and **regions**



A Framework for Global Health Delivery



The Care Delivery Value Chain

HIV/AIDS

INFORMING & ENGAGING

MEASURING

ACCESSING

<ul style="list-style-type: none"> • Prevention counseling on modes of transmission on risk factors 	<ul style="list-style-type: none"> • Explaining diagnosis and implications • Explaining course and prognosis of HIV 	<ul style="list-style-type: none"> • Explaining approach to forestalling progression 	<ul style="list-style-type: none"> • Explaining medical instructions and side effects 	<ul style="list-style-type: none"> • Counseling about adherence; understanding factors for non-adherence 	<ul style="list-style-type: none"> • Explaining co-morbid diagnoses • End-of-life counseling
<ul style="list-style-type: none"> • HIV testing • TB, STI screening • Collecting baseline demographics 	<ul style="list-style-type: none"> • HIV testing for others at risk • CD4+ count, clinical exam, labs 	<ul style="list-style-type: none"> • Monitoring CD4+ • Continuously assessing co-morbidities 	<ul style="list-style-type: none"> • Regular primary care assessments • Lab evaluations for initiating drugs 	<ul style="list-style-type: none"> • HIV staging, response to drugs • Managing complications 	<ul style="list-style-type: none"> • HIV staging, response to drugs • Regular primary care assessments
<ul style="list-style-type: none"> • Meeting patients in high-risk settings • Primary care clinics • Testing centers 	<ul style="list-style-type: none"> • Primary care clinics • Clinic labs • Testing centers 	<ul style="list-style-type: none"> • Primary care clinics • Food centers • Home visits 	<ul style="list-style-type: none"> • Primary care clinics • Pharmacy • Support groups 	<ul style="list-style-type: none"> • Primary care clinics • Pharmacy • Support groups 	<ul style="list-style-type: none"> • Primary care clinics • Pharmacy • Hospitals, hospices
<p>PREVENTION & SCREENING</p> <ul style="list-style-type: none"> • Connecting patient with primary care • Identifying high-risk individuals • Testing at-risk individuals • Promoting appropriate risk reduction strategies • Modifying behavioral risk factors • Creating medical records 	<p>DIAGNOSING & STAGING</p> <ul style="list-style-type: none"> • Formal diagnosis, staging • Determining method of transmission • Identifying others at risk • TB, STI screening • Pregnancy testing, contraceptive counseling • Creating treatment plans 	<p>DELAYING PROGRESSION</p> <ul style="list-style-type: none"> • Initiating therapies that can delay onset, including vitamins and food • Treating co-morbidities that affect disease progression, especially TB • Improving patient awareness of disease progression, prognosis, transmission • Connecting patient with care team 	<p>INITIATING ARV THERAPY</p> <ul style="list-style-type: none"> • Initiating comprehensive ARV therapy, assessing drug readiness • Preparing patient for disease progression, treatment side effects • Managing secondary infections, associated illnesses 	<p>ONGOING DISEASE MANAGEMENT</p> <ul style="list-style-type: none"> • Managing effects of associated illnesses • Managing side effects • Determining supporting nutritional modifications • Preparing patient for end-of-life management • Primary care, health maintenance 	<p>MANAGEMENT OF CLINICAL DETERIORATION</p> <ul style="list-style-type: none"> • Identifying clinical and laboratory deterioration • Initiating second- and third-line drug therapies • Managing acute illnesses and opportunistic infection through aggressive outpatient management or hospitalization • Providing social support • Access to hospice care

PATIENT VALUE

(Health outcomes per unit of cost)

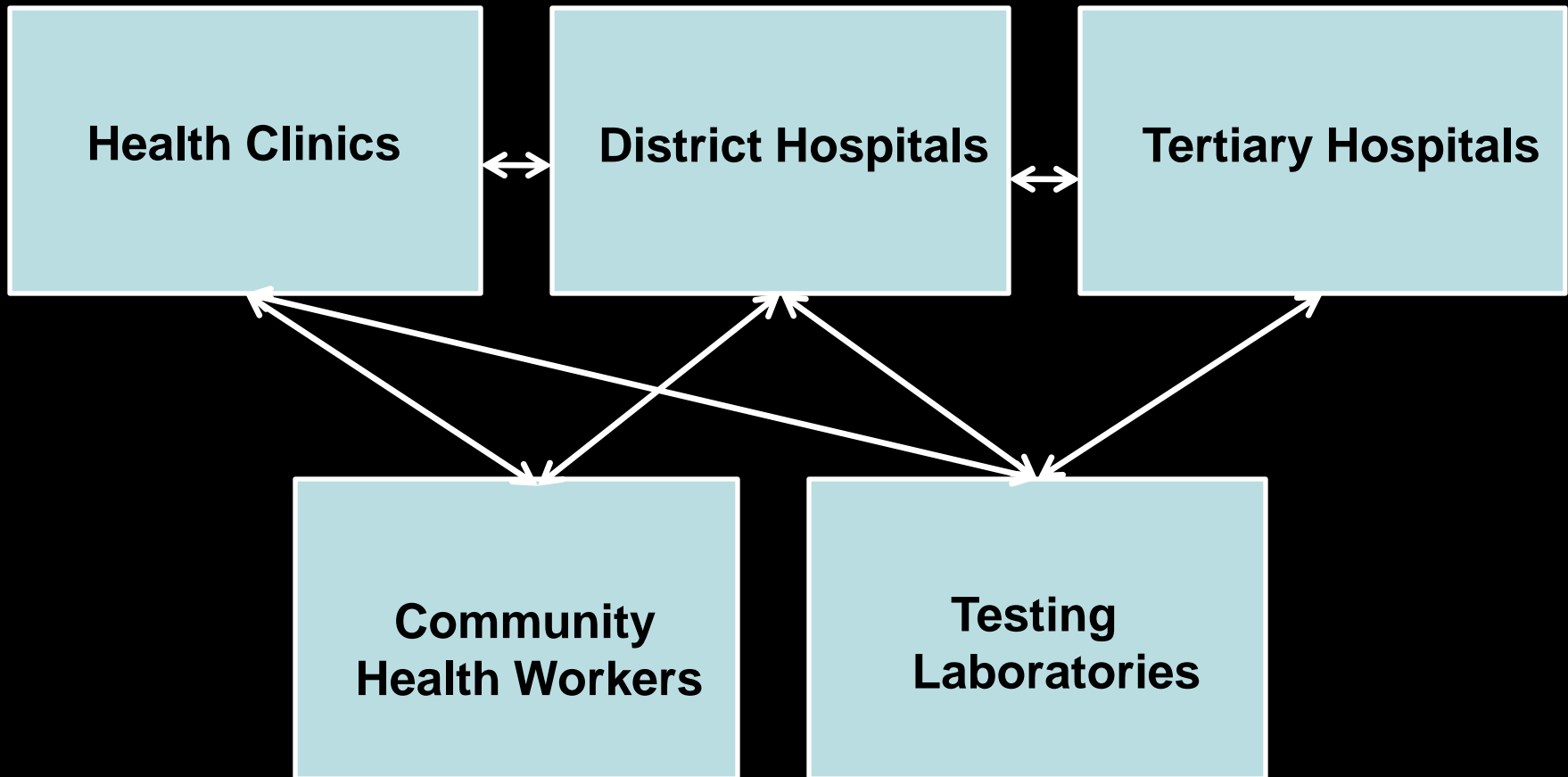
Care Delivery Value Chain

Implications for HIV/AIDS Care

- **Early diagnosis** helps in forestalling disease progression
- Intensive evaluation and treatment at 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

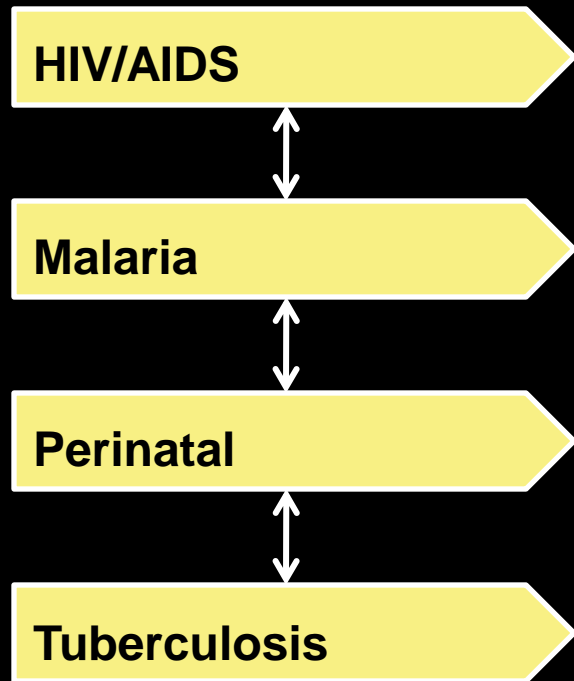


Cross Cutting Issues

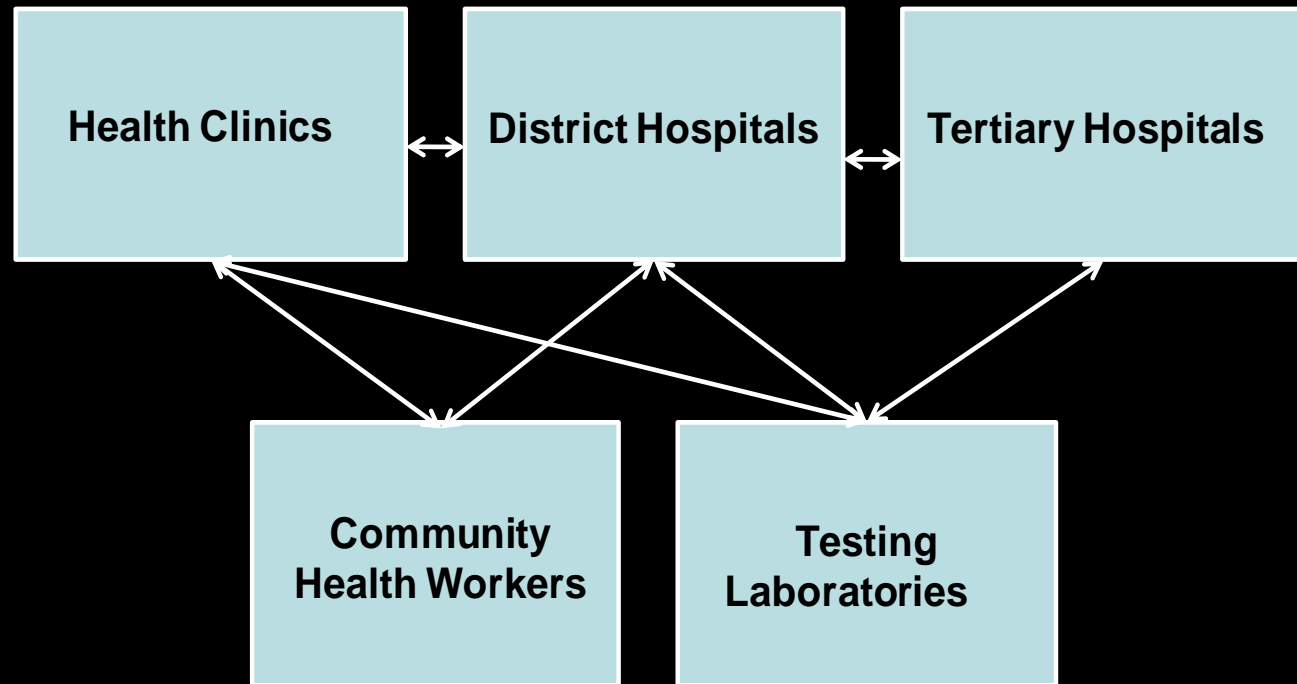
- Supply Chain Management
- Human Resource Development
- Insurance and Financing

Integrating “Vertical” and “Horizontal”

Care Delivery Value Chains



Shared Delivery Infrastructure



Shared Delivery Infrastructure

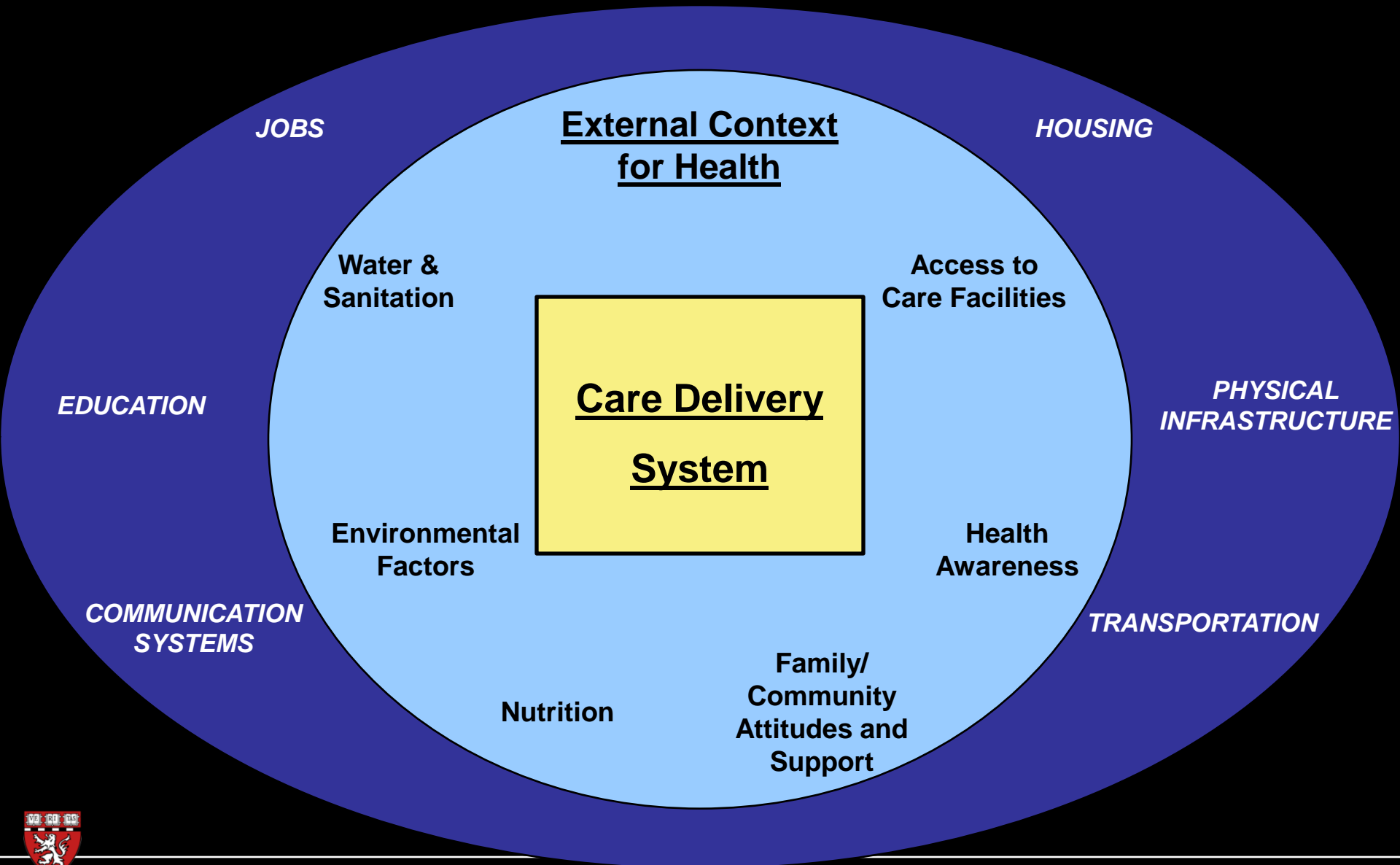
Implications for HIV/AIDS Care

- 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

Broader Influences



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)



Is there a place for a new field in global health?



- What is the patho-physiology?
- What is the diagnosis and appropriate intervention?
- Does the intervention work?



Is there a place for a new field in global health?

