Redefining Global Health Care
Narrowing the Gap Between Aspiration and Action

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WHO: COMMISSION ON MACROECONOMICS AND HEALTH

8 Million deaths per year could be averted with programs for which we have effective interventions to prevent and treat several diseases

- HIV/AIDS
- TB
- Malaria
- Childhood Infectious Disease
- Maternal and Perinatal Conditions
- Tobacco-related Illness
- Micronutrient Deficiencies

Source: Table 2, Commission Report 2003
the implementation bottleneck

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

- Key leaders and institutions have recognized the gravity
- Since 2001, over $85B in new funding for development
- 28x HIV/AIDS spending increase from $300M in 1996 to $8.5B
- Dramatic decline in treatment costs
- A golden era of funding for global health programs
GATES GRANTS

$448M - new health technologies
$413M - HIV/AIDS vaccine
$258M - malaria vaccine
$165M - new malaria drugs
$124M - anti-HIV microbicides
$115M - diarrhea/nutrition
$106M - TB vaccines/diagnostics
the implementation bottleneck

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

Gates Foundation develops:

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

<table>
<thead>
<tr>
<th></th>
<th>Aspiration</th>
<th>Action</th>
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<tbody>
<tr>
<td>Beta blockers within 24 hours of admission with chest pain</td>
<td>100%</td>
<td>69%</td>
</tr>
<tr>
<td>Antibiotic administered within 8 hours of admission with pneumonia</td>
<td>100%</td>
<td>87%</td>
</tr>
<tr>
<td>Mammography at least every 2 years</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Fundoscopic examination for diabetic retinopathy</td>
<td>100%</td>
<td>70%</td>
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</tbody>
</table>

**Source**: Jencks et al analysis of Medicare data, *JAMA*, 2003
NEW CHALLENGES

Increasing funding will allow…

• program innovation

• A move from small projects to large scale implementation

• greater impact on the health of populations

• a focus on a wider range of diseases

…but requires thoughtful new leadership to

• manage resources effectively

• close the “know-do” gap

• create administrative efficiencies, reduce resource consumption, reduce supply costs, and improve quality

• Create high value delivery models
GLOBAL HEALTH “STRATEGY” TO DATE

- Countries working in isolation of each other

- Project-based
  - Donor preferences
  - Scarcity of resources
  - Experimental pilots

- Ineffective and Non-results oriented
  - Absence of technology and measurement orientation

- Clear need for a better approach
• The need for holistic framework that incorporates all activities and actors contributing to global health outcomes at a medical condition level

• Value = Health outcomes per dollar spent

• Porter and Teisberg’s concept of a “care delivery value chain”

  - Allows careful examination of all activities of care delivery system and more thoughtful deployment of resources
DEVELOPED WORLD AND RESOURCE-POOR SETTINGS SUFFER FROM SIMILAR DELIVERY PROBLEMS

<table>
<thead>
<tr>
<th>Developed World</th>
<th>Resource-Poor Settings</th>
</tr>
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<tbody>
<tr>
<td>The product is treatment</td>
<td>The product is health</td>
</tr>
<tr>
<td>Volume of services (# tests, treatments)</td>
<td>Value of services (health outcomes per unit of cost)</td>
</tr>
<tr>
<td>Specialties</td>
<td>Integrated care</td>
</tr>
<tr>
<td>Discrete interventions</td>
<td>Care cycles</td>
</tr>
<tr>
<td>Individual disease stages</td>
<td>Sets of prevalent co-occurrences</td>
</tr>
<tr>
<td>Fragmentation of entities and programs</td>
<td>Integrated care delivery organizations</td>
</tr>
<tr>
<td>Stand alone facilities</td>
<td>Facilities networks</td>
</tr>
</tbody>
</table>
THE CARE DELIVERY VALUE CHAIN

**PATIENT VALUE**

- **PREPARING**
- **DIAGNOSING**
- **PREPARING**
- **INTERVENING**
- **RECOVERING/REHABING**
- **MONITORING/MANAGING**

**INFORMING & ENGAGING**
- (e.g. Patient education, patient counseling, pre-intervention educational programs, patient compliance monitoring and counseling)

**MEASURING**
- (e.g. Tests, imaging, patient records management)

**ACCESSING**
- (e.g. Office visits, lab visits, hospital sites of care, patient transport, visiting nurses or health workers, remote consultation)

**MONITORING/ PREVENTING**
- e.g. Medical history
- Screening
- Identifying risk factors
- Prevention programs

**DIAGNOSING**
- e.g. Medical history
- Specifying, organizing tests
- Interpreting data
- Consultation with experts
- Determining the treatment plan

**PREPARING**
- e.g., Choosing the team
- Pre-intervention preparations - pre-treatment

**INTERVENING**
- e.g., Ordering and administering drug therapy
- Performing procedures
- Performing counseling therapy

**RECOVERING/REHABING**
- e.g., In-patient recovery
- In-patient and outpatient rehab
- Therapy fine-tuning
- Developing a discharge plan

**MONITORING/ MANAGING**
- e.g., Monitoring and managing the patient’s condition
- Monitoring compliance with therapy
- Monitoring lifestyle modifications

(Health outcomes per unit of cost)
ANALYZING THE CARE DELIVERY VALUE CHAIN

1. Are the set of activities and the sequence of activities in the CDVC aligned with value?
2. Is the appropriate mix of skills brought to bear on each activity and across activities, and do individuals work as a team?
3. Is there appropriate coordination across the discrete activities in the care cycle, and are handoffs seamless?
4. Is care structured to harness linkages (optimize overall allocation of effort) across different parts of the care cycle?
5. Is the right information collected, integrated, and utilized across the care cycle?
6. Are the activities in the CDVC performed in appropriate facilities and locations?
7. What provider departments, units and groups are involved in the care cycle? Is the provider’s organizational structure aligned with value?
8. What are the independent entities involved in the care cycle, and what are the relationships among them? Should a provider’s scope of services in the care cycle be expanded or contracted?
HIV/AIDS CARE DELIVERY VALUE CHAIN

INFORMING & ENGAGING

MEASURING

ACCESSING

PREVENTION & SCREENING
DIAGNOSING & STAGING
DELAYING PROGRESSION
INITIATING ARV THERAPY
ONGOING DISEASE MANAGEMENT
MANAGEMENT OF CLINICAL DETERIORATION

PATIENT VALUE

(Health outcomes per unit of cost)
### HIV/AIDS Care Delivery Value Chain

#### INFORMING & ENGAGING
- Prevention counseling on modes of transmission on risk factors
- Explaining diagnosis and implications
- Explaining course and prognosis of HIV

#### MEASURING
- HIV testing
- TB, STI screening
- Collecting baseline demographics
- HIV testing for others at risk
- CD4+ count, clinical exam, labs
- Monitoring CD4+
- Continuously assessing co-morbidities
- Regular primary care assessments
- Lab evaluations for initiating drugs
- HIV staging, response to drugs
- Managing complications
- HIV staging, response to drugs
- Regular primary care assessments

#### ACCESSING
- Meeting patients in high-risk settings
- Primary care clinics
- Testing centers
- Primary care clinics
- Clinic labs
- Food centers
- Home visits
- Primary care clinics
- Pharmacy
- Support groups
- Primary care clinics
- Pharmacy
- Support groups
- Primary care clinics
- Food centers
- Home visits
- Primary care clinics
- Pharmacy
- Support groups
- Primary care clinics
- Hospitals, hospices

#### PREVENTION & SCREENING
- 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

#### DIAGNOSING & STAGING
- Formal diagnosis, staging
- Determining method of transmission
- Identifying others at risk
- TB, STI screening
- Pregnancy testing, contraceptive counseling
- Creating treatment plans

#### DELAYING PROGRESSION
- 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

#### INITIATING ARV THERAPY
- Initiating comprehensive ARV therapy, assessing drug readiness
- Preparing patient for disease progression, treatment side effects
- Managing secondary infections, associated illnesses

#### ONGOING DISEASE MANAGEMENT
- Managing effects of associated illnesses
- Managing side effects
- Determining supporting nutritional modifications
- Preparing patient for end-of-life management
- Primary care, health maintenance

#### MANAGEMENT OF CLINICAL DETERIORATION
- Identifying clinical and laboratory deterioration
- Initiating second- and third-line drug therapies
- Managing acute illnesses and opportunistic infections through aggressive outpatient management or hospitalization
- Providing social support
- Access to hospice care

#### PATIENT VALUE
- Formal diagnosis, staging
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(Health outcomes per unit of cost)
DESIGNING THE HEALTH CARE SYSTEM

HIV/AIDS

↑  ↑

Tuberculosis

↓  ↓

Maternal and Peri-natal Care

↓  ↓
IMPLICATIONS FOR HIV/AIDS CARE

• Management of social and economic barriers is critical to the treatment and prevention of HIV/AIDS

• Screening is most effective when integrated into a primary health care system

• Early diagnosis helps in forestalling disease progression

• Improving maternal and child health care services is integral to the HIV/AIDS care cycle through substantially reducing the incidence of new cases of HIV

• Intensive evaluation and treatment at time of 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

• Coordinated development of primary care infrastructure can improve the value of the HIV/AIDS care cycle while simultaneously improving value in the care of other diseases
• Health care delivery must incorporate the **realities of patient circumstances**
• Health care system development should maximize the leverage of the health system to **positively impact the broader context**
HOW DO WE STUDY COMPLEX STRATEGY PROBLEMS?

• Develop theoretical principles about the underlying phenomenon

• Employ a mix of quantitative and qualitative analysis

• Conduct in-depth field research focused on the role of organizational leaders and their choices, studied in context

• Careful study of numerous case studies spanning multiple settings and encompassing both success and failure

• Develop frameworks that can be applied prospectively to guide practice

• Encompass the complexity of the whole problem

• Intensive interaction with practitioners to disseminate concepts and refine implementation in specific country settings
CASE EXAMPLE: RWANDA
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- Prevention Testing
- Diagnosis Staging
- Delaying progression
- Initiating ART
- Managing Deterioration
- Disease Management
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Prevention Testing

Diagnosis Staging

Delaying progression

Initiating ART

Disease Management

Managing Deterioration
CASE EXAMPLE: RWANDA
EVALUATE HOW THE SEQUENCE OF ACTIVITIES IS ALIGNED WITH VALUE

- Are there coordination and linkages across activities?
- How are human resources deployed?
- How are facilities and organizational structures arranged to create value?
- How is information shared across activities?
COORDINATION AND LINKAGES ACROSS ACTIVITIES

Prevention Testing

Disease Management
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HOW ARE HUMAN RESOURCES DEPLOYED?

Health Centre
Twice monthly for meds + training. 0-4 hours walk away

Accompagnateur Leader
• Average 20 – 30 accompagnateurs seeks help if necessary

Patient Accompagnateur
• Average 4 to 5 households daily accompaniment (1 to 2 hours/day)

Average visit time per house 15-20 minutes

Patient
63% of patient encounters and 75% of time spent with patients, makes up just 9% of the labor costs
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FACILITIES ARRANGED TO CREATE VALUE

• Governments in Africa and especially Rwanda must be engaged.

• Building the public health infrastructure and education system will best serve the public and allow the right to health care and education in Rwanda.

• Integrated HIV programs can increase uptake of vaccinations, family planning, and improve primary health care in the public sector.
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Communities of Practice: Progress to Date

Community of Practice among Partners in Health Network

Guides and materials shared with community of health practitioners

Interactive site invites feedback from users

PIH Guides in use at FACES clinics in Western Kenya
Submitted by Rachel True (not verified) on Thu, 2007-05-03 15:54.

Family AIDS Care and Education Services (FACES) is an HIV care and treatment program. It is a collaboration between KEMRI and the University of California in San Francisco (UCSF) and is funded through the US President's Emergency Plan for AIDS Relief (PEPFAR). FACES' activities are in the western part of Kenya, in Nyamira province. FACES started in March 2005 with the program in Kisumu city. It has since expanded to work in two other districts, namely Suba and Migori. FACES is committed to providing high quality HIV care, treatment and support to HIV infected persons and their families.
add specifics
Facilities were rehabilitated…
Summary of detailed unit costing, extrapolated to a full district

100% = US$ 4.7 million in ‘steady state’ (2011)

Estimated ‘catchment’ area of unit

100% = 265,000

Methodology:
Theoretical catchment area
+ Patients coming from other areas (based on survey) - Overlaps between centres

= Actual population served

~6000 US$/Capita

~25 US$/Capita
PARTNERS IN HEALTH: RESULTS

• **Haiti**
  – Over 1 million patient visits in clinics in 2005
  – More than 9500 HIV patients monitored with over 2200 on ART
  – Inspired President Bush’s Emergency Plan for AIDS Relief

• **Peru**
  – More than 2000 people treated for MDR-TB
  – Trained over 4000 healthcare workers in MDR-TB management in 2005
  – Changed Global Policy

• **Rwanda**
  – Projects sites serve over 350,000 people
  – Over 1800 on ART, 100 more each month
  – Commitment to first ever national primary health care scale-up
AN OPPORTUNITY FOR HARVARD TO LEAD

• There is a deadly gap between what we know and what we do

• Millions of lives can be saved even without new technology, but simply by doing what we know better

• There is an urgent need for a new science of healthcare delivery that transforms the way global health practitioners implement effective solutions

• Harvard University is uniquely positioned and qualified to promote this new discipline
OUR NEXT STEPS

Create a University-wide initiative on Global Health Delivery that accelerates innovation in global health delivery

This initiative will:

– Study the most striking successes and failures in global health care delivery

– Support the creation of an international electronic medical record and launch web-based communities of practice

– Launch two care delivery innovation centers to accelerate the creation of new care delivery models

– Create training programs and materials to support the diffusion of innovation
OUR SPECIFIC NEAR-TERM NEEDS

People

• Assemble a staff of case researchers (10-12)

• Build scale-up team to survey all 30 districts in Rwanda and develop a plan to launch a national care delivery program throughout the country.

• Recruit 5-7 engineers to build the user interface for open MRS and communities of practice

• Recruit staff to lead and engage communities of practice

• Endow professorships in global health delivery sciences
YOUR SUPPORT

• Your expertise from leading/analyzing successful delivery and implementation efforts

• Your assessment of our plan and approach

• Your support
“To create and nurture a community of the best people committed to leadership in alleviating human suffering caused by disease.”