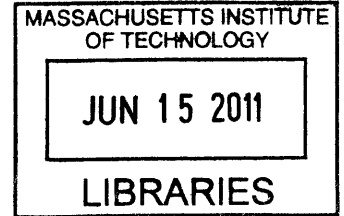


MONITORING SUCCESS OF HIV/AIDS HEALTH CARE DELIVERY: BALANCING DONOR
REQUIREMENTS WITH INTERNAL MANAGEMENT NEEDS

By

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B.A. Molecular Cell Biology
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By

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Submitted to the MIT Sloan School of Management on May 6, 2011 in partial fulfillment of the requirements for the degree of Master of Science in Management Studies

ABSTRACT

Health care delivery organizations bear the burden of meeting monitoring and evaluation requirements set by numerous external organizations often at the cost of implementing internally defined management needs. Monitoring and evaluation in global health delivery has received increasing attention over the last few years. For instance, the World Health Organization and UNAIDS have published guidelines and provided technical assistance for HIV/AIDS monitoring and evaluation programs. In doing so, they establish international standards for performance measures, defining success metrics and related data indicators. Donor organizations, such as the President's Emergency Plan For AIDS Relief (PEPFAR), the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM), and the World Bank's Multi-Country AIDS Program (MAP), have also contributed to defining HIV/AIDS success measures and data indicators in the way that they require funding recipients to report on performance. The multitude of players at the global level has made monitoring and evaluation in HIV/AIDS management confusing with regards to coordination, priority-setting, authority, and information clarification.

Health care delivery organizations that act as local service providers must balance fulfilling donor requirements with addressing internal management priorities, which considers beneficiary needs, internal strategy, and available resources. This thesis discusses the challenge of obtaining this balance by comparing data indicators set at the global level with data monitoring priorities at the enterprise level. A case study of Kyetume Community Based Health Care Programme, a health care delivery organization in Mukono, Uganda, is presented to illustrate management complexity of data monitoring at the enterprise level. The application of basic data management solutions at a local service provider shows how business management practices can be applied towards improving health care delivery processes. Drawing upon the case study as well as the concepts presented about global and enterprise level contributions to monitoring and evaluation, this paper discusses stakeholder incentives and the implications on monitoring HIV/AIDS care delivery.

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Second, I must thank the Kyetume Community Based Health Care Programme (KCBHCP) staff for agreeing to participate in this thesis. The GHD Lab team found KCBHCP to be extraordinarily welcoming in sharing with us. I encourage researchers and academics to seek out this organization for future research purposes. I was impressed by the vision, ambition, and immense amount of valuable information available through Kyetume.

Field experts who have participated in interviews and responded to information requests have been extremely helpful in guiding my research process. Their hours of contribution have been crucial to the content presented here. The substance of this thesis draws upon their insights, recommended publications, and enthusiasm. I am grateful, in particular, to my thesis advisor, Anjali Sastry, who brought this topic to my attention and, in doing so, set me on an educational adventure that has shaped my academic career at MIT Sloan.

Finally, I am indebted to my friends and family who have supported me through this process. In particular, to my Master of Science in Management Studies (MSMS) program colleagues and administrators, thank you.

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Table of Contents

ABSTRACT	3
ACKNOWLEDGEMENTS	5
LIST OF FIGURES	9
CHAPTER 1 : INTRODUCTION	10
1.1 MONITORING AND EVALUATION – FOCUS ON MONITORING	11
1.2 APPLICATION OF M&E	13
1.3 KEY ISSUES AND STRUCTURE	17
1.4 METHODOLOGY	19
CHAPTER 2 : GLOBAL LEVEL – INTERNATIONAL STANDARDS AND DONOR REQUIREMENTS	20
2.1 PEPFAR	20
2.2 THE GLOBAL FUND	21
2.3 THE WORLD BANK: MAP	24
2.4 UNAIDS	26
2.5 WORLD HEALTH ORGANIZATION	28
2.6 COLLABORATION AMONG THE GLOBAL PLAYERS	32
CHAPTER 3 : ENTERPRISE LEVEL – STRATEGIC APPROACH TO INTERNAL M&E	33
3.1 CARE DELIVERY VALUE CHAIN	35
3.2 CDVC FOR HIV/AIDS	38
3.3 COMPREHENSIVE APPROACH TO HIV/AIDS CARE DELIVERY	42
CHAPTER 4 : KYETUME COMMUNITY BASED HEALTH CARE PROGRAMME: CASE STUDY	44
4.1 INTEGRATIVE HEALTH STRATEGY	44
4.2 DATA MONITORING	47
4.3 HIV/AIDS PROGRAM DATA COLLECTION AND REPORTING	48
4.4 UNEVEN M&E DEVELOPMENT	49
4.5 LESSONS DRAWN FROM KCBHCP	50
4.6 BROADER IMPLICATIONS OF THE KCBHCP EXPERIENCE	51
4.6.1 <i>Balancing Stakeholders</i>	52
4.6.2 <i>Resource Limitations</i>	54
4.6.3 <i>Internal Data Management</i>	55
4.6.4 <i>Dashboard</i>	56
CHAPTER 5 : CONCLUSION	59
5.1 COST OF MULTIPLICITY AND THE NEED FOR BETTER COORDINATION	59
5.2 STRUCTURAL WEAKNESS	61
5.3 ROLE OF MANAGEMENT EXPERTISE AT THE LOCAL LEVEL	64
BIBLIOGRAPHY	65
APPENDIX A – PEPFAR NEXT GENERATION INDICATORS	67
APPENDIX B – PEPFAR UGANDA PROGRAM RESULTS	78
APPENDIX C – THE GLOBAL FUND TOP TEN INDICATORS	79
APPENDIX D – MAP SCORECARD	80
APPENDIX E - UNGASS CORE INDICATORS FOR THE IMPLEMENTATION OF THE DECLARATION OF COMMITMENT ON HIV/AIDS	83

APPENDIX F – WHO CORE NATIONAL M&E INDICATORS85
APPENDIX G – KCBHCP, IRCU INDICATORS.....87
APPENDIX H – KCBHCP FULL LIST OF INDICATORS.....91
APPENDIX I – LIST OF CONDUCTED INTERVIEWS.....98

List of Figures

Figure	Title	Source	Page
1	Number of People Living With HIV, Number of People Newly Infected with HIV, and Number of AIDS Deaths in the World, 1990-2008	WHO, 2010	11
2	HIV/AIDS Monitoring Versus Evaluation	WHO, 2004	13
3	Public Health Questions Approach to M&E in HIV	Rugg, 2004; UNAIDS, 2008; Global Fund, 2009	14
4	Potential Program Outcome/Impact Measures	FHI, 2006	15
5	Organization of Flow of M&E Data in Kenya	UNAIDS, 2010	16
6	World Bank's Pillars of the Agenda for Action	World Bank, 2008	24
7	New Indicator Review Process	UNAIDS, 2010	27
8	Percentage of pregnant women living with HIV receiving ARVs to prevent mother-to-child transmission of HIV in 20 high-burden countries, 2008	WHO, 2010	29
9	Monitoring and Evaluation Roles and Activities at Program, National, and Global Levels	WHO, 2004	30
10	Four Main Domains of HIV/AIDS Comprehensive Care	WHO, 2004	31
11	Information Needs and Tools at Different Levels of Data Collection	WHO Health Metrics Network, 2008	33
12	The Care Delivery Value Chain	Porter and Teisberg, 2008	36
13	Knowledge Management Along the CDVC	Porter and Teisberg, 2008	37
14	CDVC for HIV/AIDS Part 1	Porter, 2010	39
15	CDVC for HIV/AIDS Part 2	Porter, 2010	41
16	HIV/AIDS Continuum of Care	FHI, 2006	43
17	Kyetume Community Based Health Care Programme Annual Budget	KCBHCP, acquired on site, accessed March 2011	46
18	Kyetume Community Based Health Care Programme Reports	KCBHCP, acquired on site, accessed March 2011	48-49
19	Kyetume Community Based Health Care Programme HIV/AIDS Program Monitoring Dashboard – Sample	GHD Lab, created on site, March 2011	57
20	Incentive Structure when Patient is Payer		62
21	Incentive Structure when Patient is not Payer		62

Chapter 1 : Introduction

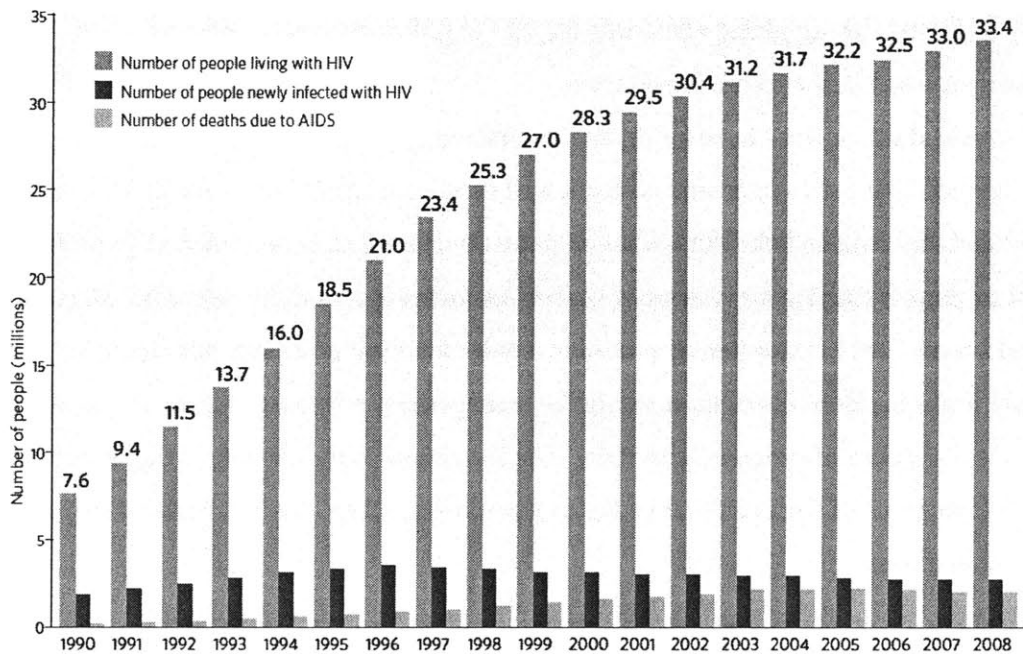
Despite years of foreign aid and assistance, the HIV/AIDS epidemic in sub-Saharan Africa remains a challenge that lacks a sustainable solution. The last three decades have seen countless initiatives to reduce the burden of HIV/AIDS through scientific research and health care delivery in the form of efforts involving academia, international agencies, NGOs, and governments designed to tackle AIDS. Regulatory measures and institutional innovations, such as the World Trade Organization's Doha Declaration on TRIPS and Public Health¹ as well as public-private partnerships like the International AIDS Vaccine Initiative (IAVI)², have decreased the price of drugs, increased access to treatment, and accelerated AIDS research. Today, there are 33.3 million people living with HIV. Of the 15 million HIV positive people who live in low- and middle- income countries, 5.2 million people have access to necessary drugs (UNAIDS, 2010). In addition, new challenges have arisen as a consequence of the multitude of players in the fight against AIDS.

The following diagram shows that while the number of people living with HIV is still increasing, the rate of that growth is slowing down. Related to this is the decreasing number of people newly infected with HIV and the increase of AIDS deaths worldwide. These trends suggest that efforts towards reducing the spread of HIV have seen some success, though the overall epidemic is still significant and growing.

¹ WTO's Doha Declaration on TRIPS and Public Health increased access to essential medicines by reaffirming member states' rights to circumvent drug patents to protect public health.

² The International AIDS Vaccine Initiative, known as IAVI, is a not-for-profit public-private partnership that researches and develops potential HIV vaccines. Contributing donors include national governments as well as private foundations and individuals.

Figure 1. Number of People Living With HIV, Number of People Newly Infected with HIV, and Number of AIDS deaths in the world, 1990-2008



Source: WHO, HIV/AIDS Program Highlights 2008-09 (WHO, May 2010)

In spite of the common goal to reduce the burden of AIDS, demands made by the parties that hold resources have often, inadvertently, hindered innovation of the organizations that they fund. In particular, by adding contingencies to needed capital, donors consequently dictate the actions taken by health delivery organizations and government groups. This paper focuses on data monitoring within an HIV/AIDS health care delivery organization. Specifically, the paper aims to address the struggle between a health care delivery organization’s internal strategy and requirements set by external parties, particularly those of donor organizations. In doing so, I will examine the current framework for defining, attaining, and measuring success for an HIV/AIDS health care delivery program.

1.1 Monitoring and Evaluation – Focus on Monitoring

Monitoring and evaluation in health care delivery organizations has been receiving increasing attention in the last decade. In January 2007, WHO Director-General Dr. Margaret Chan stated in her inaugural address, “What gets measured gets done” (Chan, 2007). This sentiment is not new, but it is relevant to the status of public health today. Global health and management experts recognize the need to collect and analyze data, but the details regarding

what to collect and how the information can be used are less concrete at this point in time. Still, global health players such as the WHO and UNAIDS have taken great strides in starting the conversation and establishing global standards for HIV/AIDS monitoring and evaluation, which will be further explored in the following chapter.

The World Bank defines monitoring and evaluation as follows. Monitoring is “a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds” (World Bank, 2011). Monitoring provides regular tracking of inputs, activities, outputs, outcomes and impacts. Benefits of monitoring for management purposes include structured and data-driven measurement of program activities. The limitation of monitoring is that it covers only certain dimensions of a project’s or program’s activities, where each indicator measures one isolated aspect at a time.

Evaluation, on the other hand, is defined as “the process of determining the worth or significance of a development activity, policy or program...to determine the relevance of objectives, the efficacy of design and implementation, the efficiency or resource use, and the sustainability of results” (World Bank, 2011). Lessons learned from evaluation can be incorporated into the decision-making processes at the enterprise, donor, government, and international levels. Moreover, evaluation provides a more balanced interpretation of performance relative to monitoring indicators. However, conducting evaluations are time-consuming and costly. Therefore, evaluations are done less frequently than monitoring.

The following table from Family Health International (FHI) provides examples of monitoring versus evaluation for HIV/AIDS programs. Monitoring focuses on inputs, process, and outputs, whereas evaluation focuses on outcome and impact. However, monitoring and evaluation overlap in that they both consider outcomes, though from different angles.

Figure 2. HIV/AIDS Monitoring Versus Evaluation

MONITORING "Process Evaluation"			EVALUATION "Effectiveness Evaluation"	
Inputs	Process	Outputs	Outcome	Impact
<ul style="list-style-type: none"> • Funds • Supplies/drugs • Equipment • Policies, guidelines & procedures 	<ul style="list-style-type: none"> • Training • HIV Testing • Treatment services HAART 	<ul style="list-style-type: none"> • # Trained staff • # Clients receiving VCT; care; referred • # Clients receiving PLHA • # receiving HBC • # receiving PMTCT prescription 	<ul style="list-style-type: none"> • Improved provider attitudes • Improved community attitudes towards • Decreased discrimination • Restored productivity • Appropriate care delivery; referral; • Enhanced quality of life 	<ul style="list-style-type: none"> • HIV - related morbidity • Mortality rate/life expectancy

Levels of Evaluation Efforts

Source: WHO, A Guide to Monitoring and Evaluating HIV/AIDS Care and Support (WHO, March 2004)

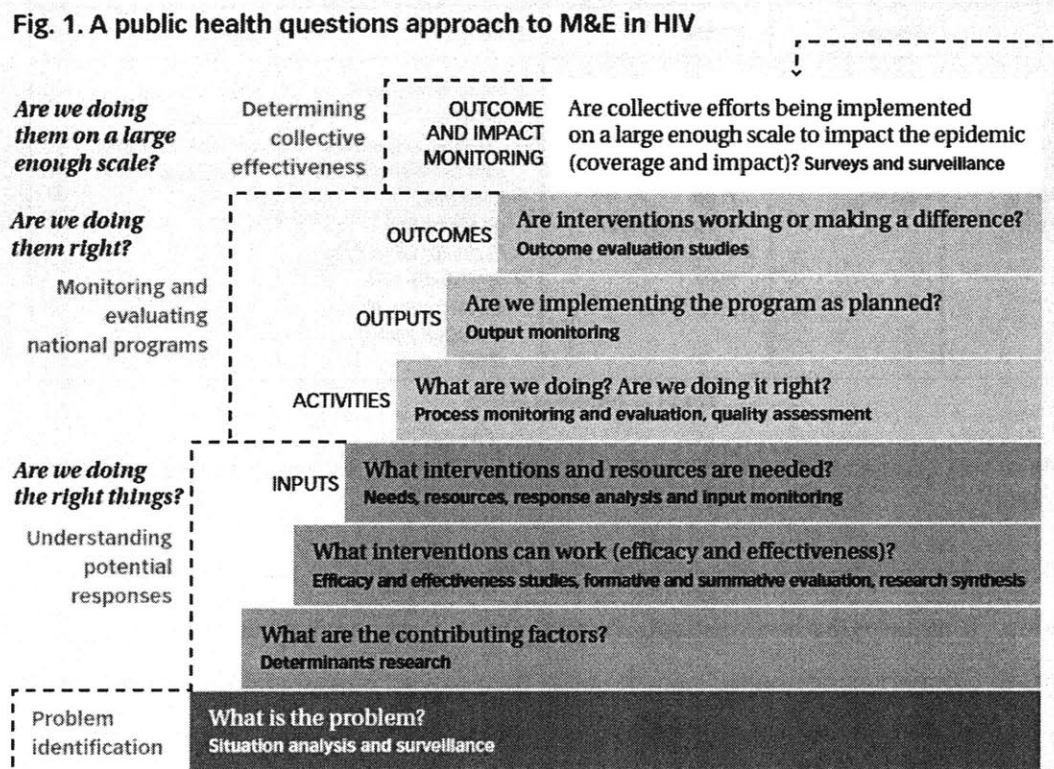
Evaluation requires in depth analysis of actions, strategies, and policies of an organization. It requires the involvement of management, community stakeholders, supervisors, and donors to compare performance against goals, focusing on impact and the organization's model of change. While evaluation is extremely important in measuring performance of an organization, the focus of this paper will be on monitoring. Monitoring tends to focus more on the output and outcome aspects of implemented activities, requiring regular data tracking that is part of daily activities in an organization. Monitoring provides opportunity for the early detection of problems so that corrective action can be taken. It also creates a foundation from which an organization can measure progress towards its goals (UNFPA, Aug 2004).

1.2 Application of M&E

The design of a national monitoring and evaluation system for HIV can be guided by an international standard such as the following approach, which appears in documents published by the Global Fund and UNAIDS. The framework looks at M&E from the lens of answering public health questions. The logic behind M&E begins with the identification of a problem, followed by an analysis of contributing factors and the interventions and inputs needed. Monitoring and evaluation is introduced to assess the efficacy of the interventions by looking at process measures and how well the interventions are implemented. Outcome measurement looks at the

difference achieved by the interventions. Further impact studies survey the scale and influence on the epidemic at large (World Bank, 2004).

Figure 3. A Public Health Questions Approach to M&E in HIV



Source: Rugg et al., Global Advances in HIV/AIDS M&E (Rugg, Peersman, & Carael, 2004). UNAIDS, Organizing Framework for a Functional National HIV Monitoring and Evaluation System (UNAIDS, April 2008). GFATM, Monitoring and Evaluation Toolkit (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, Feb 2009).

Using this framework, national level indicators can be extracted to evaluate the state of the HIV epidemic and the performance of initiatives that have been meant to fight HIV within the country. Ideally, the local health care delivery organization’s purpose and strategy should align with the national strategy.

Standard M&E classification defines output, outcome, and impact as follows. Output is defined as the result of program activities. It relate to the direct products or deliverables of program activities, such as number of counseling sessions completed, number of people reached, and number of materials distributed. Outcome is the effect of program activities on target audiences or populations, such as change in knowledge, beliefs, skills, behaviors, access to

services, and environmental conditions. Impact is defined to be the longer-range, cumulative effect of programs over time such as change in HIV infection, morbidity, and mortality; impacts are rarely, if ever, ambiguously attributable to a single program, but a program may, with other programs, contribute to impacts on a defined population (PEPFAR, Aug 2009). The following table from FHI gives some examples of outcomes versus impacts for an HIV/AIDS program.

Figure 4. Potential Program Outcome/Impact Measures

Program Outcome (short-term and intermediate effects)	Program Impact (long-term effects)
<ul style="list-style-type: none"> • changes in HIV/AIDS-related attitudes • HIV/STI-related risk behaviors • trends in STI rates (e.g., gonorrhea) • increase in social support/community response 	<ul style="list-style-type: none"> • sustained changes in HIV/STI-related risk behaviors • trends in HIV/AIDS rates • AIDS-related mortality rates • reduced individual and societal vulnerability to HIV/AIDS • sustained changes in societal norms

Source: Family Health International, *Evaluating Program for HIV/AIDS Prevention and Care in Developing Countries: A Handbook for Program Managers and Decision Makers* (Family Health International, 2006)

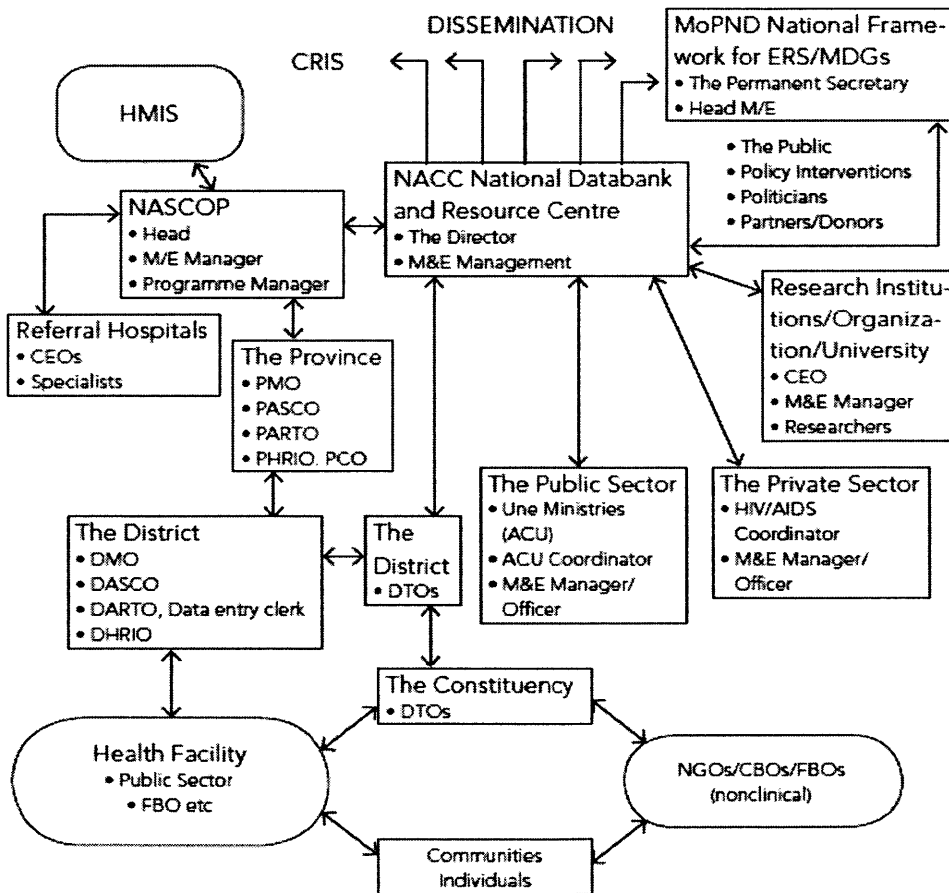
Ideally, the logic of defining indicators for local service providers should be similar to that of the national level framework, beginning with the identification of the problem to be solved. After considering contributing factors and brainstorming possible solutions, an organization decides on what aspect of the problem they should address and what activities they can realistically pursue. Baseline data is gathered, targets are set, and indicators are designed based on measuring progress towards those objectives. With well-defined indicators, managers can set realistic targets, measure progress, compare performance, identify problems early on, and articulate improvements and achievements over time.

M&E can be useful for multiple purposes in an individual health care delivery organization. In the area of strategic decision-making, M&E can inform policy, operations, and strategy for extension, expansion, or replication. It can help identify strategies and activities that are successful or unsuccessful. For operation management, M&E is useful to improve program quality and to demonstrate accountability to decision makers. In terms of stakeholder management, M&E is used to justify and validate the necessity of programs to donors and partners. When stakeholders are involved in decision-making, they are able to participate in

decisions that determine program output and quality. Finally, M&E plays an important role in organizational learning and impact. Regular internal data monitoring and evaluation measures the effectiveness of programs and projects. With quantitative and qualitative data analysis, an organization can identify the things that do or don't work and why. Building on this type of knowledge can lead to an articulation of best practices and validation of competencies and achievements.

Unfortunately, the process of problem solving and data monitoring for HIV/AIDS health care delivery has been complicated by misaligned incentives, a lack of coordination among the multitude of stakeholders, resource limitations, and a need for bottom up participation in decision making from enterprise level management. Even upstream, at national and international levels, the number of stakeholders and decision-makers has over-complicated the setting of priorities. The following diagram of Kenya's M&E data flow illustrates the complexity of a national HIV/AIDS M&E program.

Figure 5. Organization of Flow of M&E Data in Kenya



ACU: AIDS Control Unit; CACC: Constituency AIDS Control Committee; CBO: Community- based organisation; CEO: Chief Executive Officer; CRIS: Country Response Information System; DARTO: District ART Officer; DASCO: District AIDS/STD Coordinator; DHRIO: District Health Records & Information Officer; DMO: District Medical Officer; DTC: District Technical Committee; ERSWEC: Economic Recovery Strategy for Wealth and Employment Creation; FBO: Faith-based Organisation; HMIS: Health Management Information System; MDG: Millennium Development Goals; MoPND: Ministry of Planning and National Development; NACC: National AIDS Control Council; NASCOP: National AIDS and STI Control Programme; NGO: Non-governmental organisation; PARTO Provincial ART Officer; PASCO Provincial AIDS/STD Coordinator; PHR&IO Provincial Health Records and Information Officer; PMO: Provincial Medical Officer.

Source: UNAIDS MERG, Guidance on Capacity Building for HIV Monitoring and Evaluation (UNAIDS, Jan 2010)

1.3 Key Issues and Structure

This paper strives to address four key issues. First, the multitude of players in HIV/AIDS management creates an environment of confusion regarding priority-setting, authority, and information clarification. Second, health care delivery organizations face difficulties to balance stakeholders because disconnected priorities from donors, beneficiaries, and internal management create an incentive structure with contradictions. Third, resource constraints in developing areas make fulfilling donor requirements impossible or impractical. And, finally, the relative weakness of local service providers' abilities to innovate and improve internal M&E is an issue that needs to be remedied.

The purpose of this paper is to understand the roles of major stakeholders in HIV/AIDS care and how their interactions contribute to M&E design and activities. I will focus on the design and construction of data monitoring processes at the enterprise level, comparing an ideal logical flow to practices in reality. In order to understand the M&E experience of a local care delivery organization, I will present a case study to provide a glimpse of reality on the ground. Analysis of the different stakeholder's roles motivate conclusions regarding HIV/AIDS M&E challenges and actions that can be taken to overcome those challenges.

The following sections introduce the major stakeholders in monitoring and evaluation of HIV/AIDS programs. The first section considers the global level, for which I will examine international organizations that fund or establish guidelines for HIV/AIDS programs. The selected donor organizations that are presented in the chapter are the three largest financiers of HIV/AIDS programs in the developing world: The United States President's Emergency Plan For AIDS Relief (PEPFAR), The Global Fund to Fight AIDS, Tuberculosis, and Malaria

(GFATM), and The World Bank's Multi-Country HIV/AIDS Program for Africa (MAP) (Center for Global Development, Oct 2007).

It is important to note that these donors often provide funding on a national level, where M&E indicators are designed with regard to national levels. Enterprise level HIV/AIDS programs may receive funding indirectly from these large pools of funds. For instance, the Country Coordinating Mechanism, the structure through which the Global Fund communicates with in each country, can choose a non-governmental primary recipient for GFATM resources (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2011). PEPFAR can fund umbrella organizations that reach out to smaller civil society organizations with HIV/AIDS programs (The US President's Emergency Plan For AIDS Relief, 2011). The World Bank tends to communicate only at the national government level. However, governments may distribute MAP resources to chosen local service providers that fit within the national and international agenda (World Bank, 2011). By comparing their measures for successful performance with those of a health delivery organization, we can see how indicators that are defined at a high level trickle down to the management of an individual health care delivery organization. Moreover, the degree of influence that these three large organizations have in decision-making processes for worldwide HIV/AIDS initiatives is worthy of closer analysis.

In addition to these three donor organizations, I will also present M&E guidelines and tools published by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO). Although these two international organizations do not participate directly in funding, they are heavily involved with global health coordination and setting standards for recommended practices³.

The subsequent section focuses on data monitoring from the perspective of the health care delivery organization at the local level. The M&E priorities are different at this level depending on what aspect of HIV/AIDS care that the organization chooses to address and the strategies and activities carried out, which are often tailored to unique contextual factors. In this regard, the local health care delivery organization is intimately tied to the patient population served, whose needs are considered in the organization's strategy and model. The section will

³ Exception: In 2003, UNAIDS and WHO launched the 3 x 5 Initiative, which aimed to provide three million people living with HIV in low- and middle income countries with antiretroviral treatment (ART) by 2005.

use the care delivery value chain framework to approach strategy in global health delivery management. Through this tool, I hope to provide lenses through which the problem of data management can be analyzed.

Finally, a real world example of data monitoring challenges is presented in a case study of Kyetume Community Based Health Care Programme (KCBHCP), a health care delivery organization located in rural Mukono, Uganda. Though it is impossible to present all issues faced by unique health care organizations, KCBHCP's experience with data monitoring provides insights into some of the challenges and achievements made at the local service provider level.

1.4 Methodology

This paper draws upon information from three types of sources. The first type of information is written and publicly available. This includes articles, papers, books, and information that is posted online through the websites of WHO, UNAIDS, World Bank, PEPFAR, and GFATM. As a student without an extensive background in global health, I take the perspective of an external researcher, making use of publicly available information as opposed to an insider, who may know the ins and outs of the field from unpublished sources. The second type of information from which this paper draws upon is interviews with experts in the field. Insights collected from academic researchers, managers at NGOs, and M&E experts have provided a range of perspectives that reflect current HIV/AIDS data monitoring practices. The third source of data comes from the experience of a team of students who visited Kyetume Community Based Health Care Programme (KCBHCP) through MIT's Global Health Delivery Lab, an action-learning course offered at the Sloan School of Management. As a member of this team, I assisted in developing tools to improve data monitoring at KCBHCP. With the help and participation of the KCBHCP staff, I draw upon information attained at KCBHCP to inform the section describing local service provider perspectives.

Chapter 2 : Global Level – International Standards and Donor Requirements

Analysis of the three largest sources of funding for HIV/AIDS initiatives in developing countries can shed light on the current status of M&E practices. The donors presented in this chapter are the U.S. Presidents' Emergency Plan to For AIDS Relief (PEPFAR), the Global Fund for AIDS Tuberculosis and Malaria (GFATM), and the World Bank's Multi-Country HIV/AIDS Program for Africa (MAP). Additionally, Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO) are presented because of their significant influence in communicating and shaping international standards for HIV/AIDS monitoring. The analysis will focus on each organization's contribution to the fight against HIV/AIDS, the relationship with its recipient or target audience, and the recommended or required M&E guidelines and policies.

2.1 PEPFAR

Since President George W. Bush started the fund in 2003, PEPFAR has committed \$32 billion to bilateral HIV/AIDS programs, the Global Fund, and bilateral TB programs. For 2011, President Obama requests \$7 billion, including \$5.74 billion for bilateral HIV/AIDS programs, and \$1 billion for the Global Fund. PEPFAR partners directly with 30 countries, providing support for 11 million people, of which 3.8 million are orphans and vulnerable children (PEPFAR, 2010).

PEPFAR funding is allocated towards treatment and care for patients as well as for orphans and vulnerable children. Recipient organizations tend to be international NGOs, most of which are American. The money is then disbursed to local care delivery organizations under the requirements and targets set by the primary recipient organization. Reporting requirements are stringently determined by PEPFAR, which places priorities on achieving targets (Center for Global Development, Oct 2007). In this sense, funding is not flexible in allowing recipients to prioritize their own programs' activities. PEPFAR recipients, therefore, are not given the freedom to design their programs to be locally specific.

In 2009, PEPFAR published a document called Next Generation Indicator Reference Guide that details the list of indicators that PEPFAR funded programs are requested to track. A full list of these indicators is attached in Appendix A. The indicators are categorized by type of

intervention (i.e. prevention, care, treatment), source of data collection, national or programmatic level, and whether or not it describes output, outcome, or impact (PEPFAR, Aug 2009).

Though the list is quite long and thorough, only a chosen few are used often in publications to represent PEPFAR program results. Based on publicly available materials and program reports, PEPFAR selects the following types of indicators to report on program results: the number of people supported with ART, the number of PLWHA⁴ supported with care, the number of orphans and vulnerable children supported, the number of HIV positive pregnant women on prophylaxis, the number of HIV negatives babies born to HIV positive mothers as a result of PEPFAR's PMTCT⁵ efforts, and the number of people that PEPFAR has supported to obtain counseling and testing (PEPFAR, 2010). Appendix B gives PEPFAR's program results for Uganda, providing an example of selected indicators to represent performance. Up until September 2009, PEPFAR kept record of the number of people supported indirectly from PEPFAR funding. This number is a projection of the number of people benefitting from systems strengthening and capacity building of the national HIV/AIDS program that the US government contributed to. However, starting from 2010, PEPFAR will instead report on national achievements in service delivery and health systems strengthening as described in the Next Generation Indicators Reference Guide (PEPFAR, Aug 2009).

The detail with which PEPFAR describes and categorizes indicators suggests depth of research and continuous update of performance measures. The documents are available online, and are easily accessible. PEPFAR's large presence in developing countries indicates its substantial contribution to HIV/AIDS health care delivery.

2.2 The Global Fund

The Global Fund to Fight AIDS, Tuberculosis, and Malaria was formed in 2002 and has become the dominant financier for worldwide efforts against the three disease areas. To date, the Global Fund has committed \$21.7 billion in 150 countries (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2011). The United States is the largest donor of the Global Fund having pledged \$4 billion between 2011 and 2013, partially through PEPFAR (PEPFAR, 2010). For an international fund of its size, the Global Fund has earned respect for its attempt to be

⁴ "PLWHA" is an acronym for people living with HIV/AIDS.

⁵ "PMTCT" is an acronym for prevention of mother-to-child transmission.

transparent about its members, its activities, and the grants that are both accepted and rejected. Some of the indicators that the Global Fund chooses to represent its work include the number of programs funded and the number of lives saved. The Global Fund has provided publicly available guides on its website for performance evaluation as well as posted success stories to demonstrate lives saved as a result of Global Fund efforts. Disbursement is managed through a Country Coordinating Mechanism (CCM), where primary recipients are usually government entities. However, recipients can also be NGOs that are specified by the CCM (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2011). The Global Fund, therefore, works both with government and non-government recipients.

The Global Fund uses a performance based operating model called “Raise It, Invest It, Prove It” that is also shared by the GAVI Alliance (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, Nov 2009). With an intention to listen closely to local needs and to foster ownership of project monitoring, the Global Fund requires the host program to specify pre-determined M&E indicators in the grant proposal. Requiring the formation of a CCM, which must involve public and private sectors, including governments, multilateral or bilateral agencies, non-governmental organizations, academic institutions, private businesses and people living with the diseases, suggests that the Global Fund places a great deal of burden on the recipient (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2011). However, the CCM is necessary for the Global Fund to maintain a consistent relationship with its recipient countries, ensuring the involvement of multiple stakeholders in its decision-making processes. The requirements on defining indicators and data capturing also reflect the Global Fund’s objective to increase the grant recipients’ participation and ownership of the monitoring aspect of the project. In this sense, the Global Fund allows more flexibility for its recipients to design and prioritize the activities in each program. Although M&E indicators ultimately need to be approved by the Global Fund, the process is more of a negotiation than with PEPFAR. The Global Fund, in collaboration with UNAIDS, WHO, World Bank, UNICEF⁶, and USAID⁷, published a Monitoring and Evaluation Toolkit in 2009 that describes many of the internationally

⁶ UNICEF is the United Nations Children’s Fund that provides humanitarian and developmental assistance to children and mothers in developing countries.

⁷ USAID is the United States Agency for International Development is an independent federal government agency that provides economic, developmental, and humanitarian assistance in support of the foreign policy goals of the United States.

accepted concepts for effective M&E. For HIV specifically, the toolkit gives examples of output indicators that can be used for specific service delivery areas, such as behavior change communication or counseling and testing (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, Feb 2009).

The top indicators for routine Global Fund reporting for HIV/AIDS programs include: the number of people with advanced HIV infection who are currently receiving ART⁸, the number of adults who received in HIV test in the last year and know their results, the number of HIV positive pregnant women who receive ARVs to prevent mother-to-child transmission, the number of condoms distributed, the number of people benefitting from community based programs such as support for orphan and vulnerable children as well as behavior change communication and prevention outreach activities, the number of TB registered patients who received an HIV test, and the number of people trained. The top indicators for outcome and impact assessment for HIV/AIDS programs include: the percentage of young adults who are HIV positive, the percentage of people who started ART that are still on treatment after a year, the percentage of HIV negative infants born to HIV positive mothers, the percentage of adults who have multiple partners that used a condom during their last sexual intercourse, and the mortality rate of children under age five (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2010). Appendix C lists the Global Fund Top Ten Indicators. The Global Fund indicators reflect those reported on by WHO, UNGASS⁹, and UNAIDS.

The Global Fund attempts to standardize communication, grant disbursement, and M&E processes by requiring the establishment of CCMs. Simultaneously, a great deal of customization and negotiation occurs in the grant proposal process, where the potential recipient determines indicators for performance monitoring. In this way, indicators can be tailored appropriately to specific situations.

⁸ “ART” is an acronym for antiretroviral therapy. There are several classes of antiretroviral drugs (ARV) that can be taken through fixed-dose combination pills or personalized by a doctor.

⁹ UNGASS is the United Nations General Assembly Special Session on HIV/AIDS through which ministers from 189 countries came together to address the global emergency of the HIV/AIDS epidemic. UNGASS collaborates frequently with UNAIDS, especially in the communication of core indicators. UNGASS. (March 2009). *UNGASS Guidelines on Construction of Core Indicators for 2010 Reporting*.

2.3 The World Bank: MAP

The World Bank’s Multi-Country HIV/AIDS Program for Africa has provided \$2 billion to 35 countries since its inception in 1999 (World Bank, 2011). More so than PEPFAR and the Global Fund, MAP deals specifically at the national government level, working to promote countrywide improvement from top down rather than from ground up. The program was designed to have three stages of development. The first stage is to establish essential infrastructure of care delivery, including enacting policy, engaging community members, learning from trial, and increasing capacity. The second stage is to scale up prevention, treatment, and care. The third stage is to focus on areas and groups in which HIV continues to spread. In 2007, the World Bank published its Agenda for Action 2007-2011, with the intention to reach Millennium Development Goal Six, to halt and reverse the spread of HIV/AIDS. The Agenda for Action rested on four strategic pillars (World Bank, March 2008).

Figure 6. Pillars of Action in the World Bank’s Agenda for Action

Pillar 1	Focus the response through evidence-based and prioritized HIV/AIDS strategies, integrated into national development planning.
Pillar 2	Scale up targeted multisectoral and civil society responses.
Pillar 3	Deliver more effective results through increased country M&E capacity.
Pillar 4	Improve donor harmonization and coordination.

Source: World Bank, The World Bank’s Commitment to HIV/AIDS in Africa: Our Agenda for Action 2007-2011 (World Bank, March 2008)

These pillars of action reflect the World Bank’s understanding that an appropriate response in one location and circumstance is not necessarily appropriate in another. HIV/AIDS programs and strategies must be tailored to specific country epidemics though there is benefit in sharing successful practices and learnings across programs. Pillar 2 highlights the need for health systems strengthening and the need to integrate all players within a national system to be cohesive, supportive, and effective. Pillar 3 calls for the development and operationalization of M&E systems at the country level. To this end, the World Bank suggests the adoption of the

HIV/AIDS Results Scorecard (see Appendix D) and the assistance of GAMET¹⁰. Pillar 4 recognizes the lack of harmonization among donors that hinder scale up of national HIV/AIDS programs. Though the motivation exists to align international aid institutions, the World Bank's reduction of stress on human capacity and supply chain constraints is difficult to quantify.

For the purpose of understanding the World Bank's perspective on monitoring HIV/AIDS as well as the actions that have been taken towards M&E, a closer look at GAMET and the HIV/AIDS Results Scorecard is of interest. GAMET works closely with UNAIDS to help national governments develop and implement M&E frameworks. In 2007, GAMET published a handbook for planning and managing HIV/AIDS results in which it describes how to use a logical framework to establish a program that is evidence based and oriented towards results (Center for Global Development, Oct 2007). Additionally, guidelines and tools that inform M&E development have been published by the World Bank and UNAIDS in such documents as the Monitoring and Evaluation Operations Manual for National AIDS Councils (UNAIDS, World Bank, Aug 2002).

The World Bank's Africa Region, in collaboration with GAMET, developed the HIV/AIDS Results Scorecard. The scorecard is based on indicators agreed upon by UNGASS, the Millennium Development Goals, and the World Bank's International Development Association. It also accounts for the OECD's Paris Declaration on harmonization and minimizing data requirements. Indicators were selected with consideration of country reporting capacity, availability of baseline data, and alignment with reporting requirements of UNAIDS, GFATM, and PEPFAR (World Bank, 2007). The scorecard indicators are categorized into six parts: demographics, challenges, final outcomes, intermediate outcomes, financial commitments, and disbursements. Some of the highlighted national indicators from the scorecard include: number of people living with HIV, percentage of adults with multiple partners that report condom use, the number of HIV positive pregnant women who receive prophylaxis, the number of civil society organizations (CSOs) supported for subprojects, the percentage of national AIDS

¹⁰ GAMET, or the Global AIDS Monitoring and Evaluation Team, is a World Bank organization with the mission to improve the quality of HIV/AIDS monitoring and evaluation and build national capacity to support its own M&E system. World Bank. (n.d.). *Global Monitoring and Evaluation Team*. Retrieved from <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTHIVAIDS/0,,contentMDK:21514910~pagePK:210058~piPK:210062~theSitePK:376471,00.html>

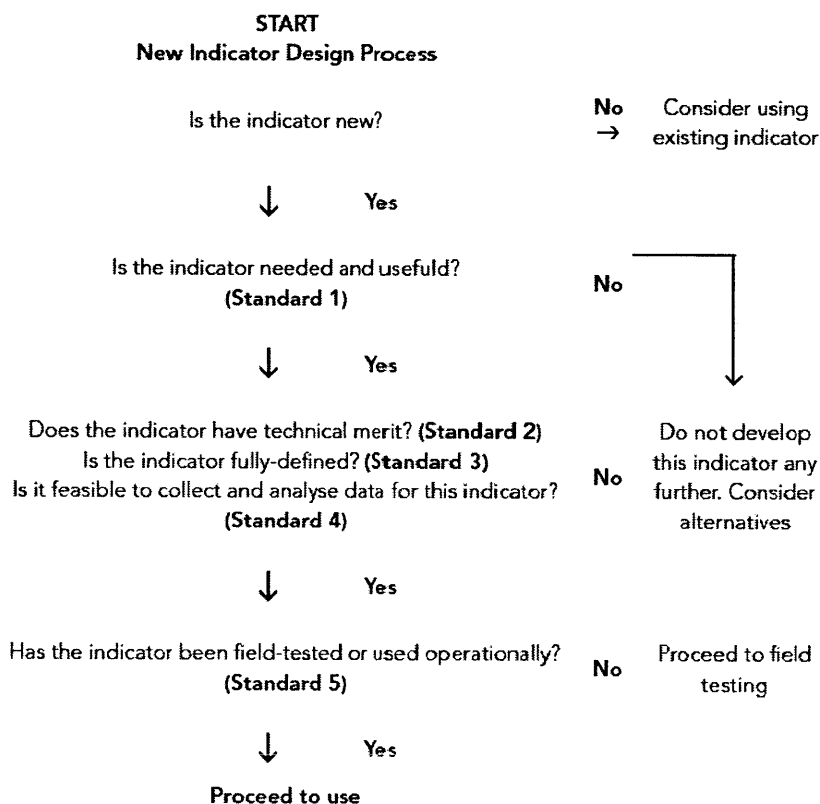
authorities that report and disseminate data from the HIV M&E framework, and the estimated investment required to reach HIV/AIDS goals (World Bank, 2007). Many of the Challenge and Outcome indicators, which are sections B, C, and D on the scorecard, echo those seen in PEPFAR's set of indicators (see Appendix D). Challenge indicators include number of people living with HIV, which is found in the UNAIDS report as well. Outcome indicators include statistics on condom use, which are found in UNGASS core indicators as well as PEPFAR and MAP indicators. Other HIV/AIDS Scorecard indicators focus on national financial needs, which falls more in the scope of World Bank priorities. Though the World Bank interacts with national governments rather than CSOs, the determination of the national AIDS agenda and resource allocation affect enterprise level health delivery organizations.

2.4 UNAIDS

WHO and UNAIDS, despite not being financiers, are key players in providing technical assistance and determining guidelines for HIV/AIDS programs. They are also recognized as global authorities in compiling country level reports and disseminating information. For the purpose of setting international standards of success, WHO and UNAIDS are globally important in influencing governance and contributing to decisions made by donors, national health authorities, as well as health delivery organizations. Therefore, the recommendations suggested by WHO and UNAIDS carry weight in the determination of performance measures on national and subnational levels.

In 1998, the UNAIDS Monitoring and Evaluation Reference Group (MERG) was created to bring together donors, NGOs, and technical experts to strengthen M&E within UNAIDS and set international standards for national indicators, global M&E guidelines, and tools that can be used at the country level for AIDS programs. Among the many partners of UNAIDS MERG are PEPFAR, the Global Fund, and the World Bank. By pre-assessing indicators, MERG intends to promote harmonization of indicators and reduce reporting burden. The process by which the MERG Indicator Review Panel chooses indicators is described in the following diagram (UNAIDS, Jan 2010).

Figure 7. New Indicator Review Process



Source: UNAIDS, Indicator Standards: Operational Guidelines for Selecting Indicators for the HIV Response (UNAIDS, Jan 2010)

The Indicator Assessment Tool uses six standards to screen that the new indicator: is needed and useful, has technical merit, is fully defined, is feasible to collect and analyze, has been field tested or used in practice, and is balanced and coherent (UNAIDS, Jan 2010). MERG makes such tools available through publications so that donor organizations, NGOs, and national governments can synchronize a common set of indicators to use. For instance, WHO and the Global Fund have both made use of the Indicator Assessment Tool. The extent to which MERG’s work benefits service organizations at the local level is less certain. The topic of streamlining reporting processes will be discussed further in the following chapter.

The UNAIDS Report on the Global AIDS Epidemic, accepted as an authority for the world’s HIV/AIDS data, used a set of indicators that were developed as a complement to the indicators specified by the United Nations General Assembly Special Session on HIV/AIDS

(UNGASS, March 2009). The list of UNGASS's 25 core indicators to measure national performance and progress in the fight against AIDS are attached as Appendix E.

2.5 World Health Organization

Chapter 2, Article 2 of the WHO constitution states (WHO, July 1946):

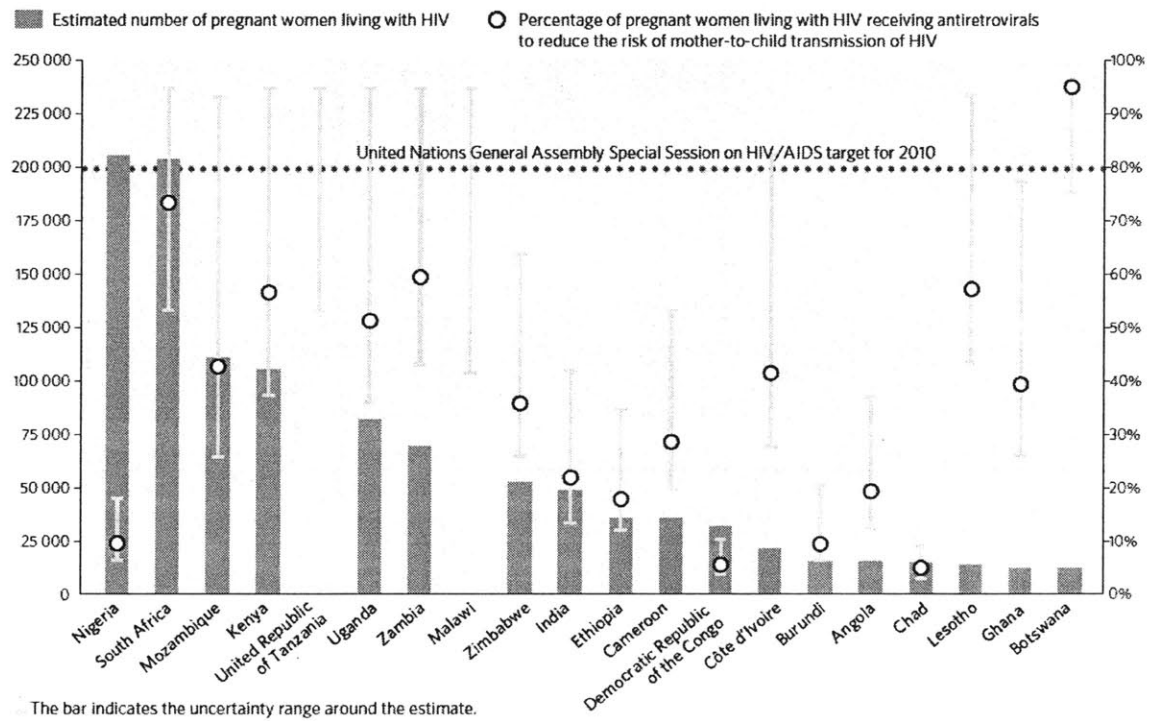
“In order to achieve its objective, the functions of the Organization shall be: (a) to act as the directing and coordinating authority on international health work; (b) to establish and maintain effective collaboration with the UN, specialized agencies, government health administrations, professional groups and such organizations as may be deemed appropriate; (c) to assist Governments, upon request, in strengthening health services; (d) to furnish appropriate technical assistance...upon the request or acceptance of Governments....”

These first listed functions of the WHO have very important implications for global health governance. First, it is written as a constitutional mandate for the WHO to be the coordinating authority of international health work. This is an extremely important role considering the multitude of players on the global health stage. Yet, the extent that the WHO has been successful in this task is arguable. The authority of the WHO is given voluntarily by member-states, all of which clearly hold their own countries at priority. However, if the authority and legitimacy can be granted, the WHO fills a very necessary position in standardizing guidelines, data indicators, and establishing international best practices. Additionally, governments turn to WHO for technical assistance, which includes helping countries to generate quality data, monitor progress against relevant indicators, and use data to improve health-sector response to HIV (WHO, May 2010).

Furthermore, in her inaugural address, WHO Director-General Dr. Margaret Chan made the following statements (Chan, 2007): “I believe it is also our job to constantly assess the impact of our activities...Good performance – action with an impact – requires clear and cohesive guidance from WHO...the true measure of our effectiveness rests with our impact on people – people within countries.” Dr. Chan’s speech emphasized the WHO’s constitutional mandate as the coordinating body for global health and the WHO’s role to measure performance by impact of activities on the people.

Keeping true to this objective, WHO publishes global health reports that demonstrate continual monitoring of epidemics and impact of activities promoted by the WHO. The following diagram presents one such monitoring indicator from a 2010 publication regarding the WHO's HIV/AIDS Program during 2008-09 (WHO, May 2010). The graph shows where we are relative to the 80% goal set by UNGASS for the percentage of pregnant women living with HIV receiving ARVs for PMTCT. By presenting this type of data in its program publication, WHO illustrates that the organization defines a success measure by percent coverage of ARVs for pregnant women living with HIV, that a target has been set, and that data is collected regularly to monitor the progress towards the indicated goal.

Figure 8. Percentage of pregnant women living with HIV receiving ARVs to prevent mother-to-child transmission of HIV in 20 high-burden countries, 2008

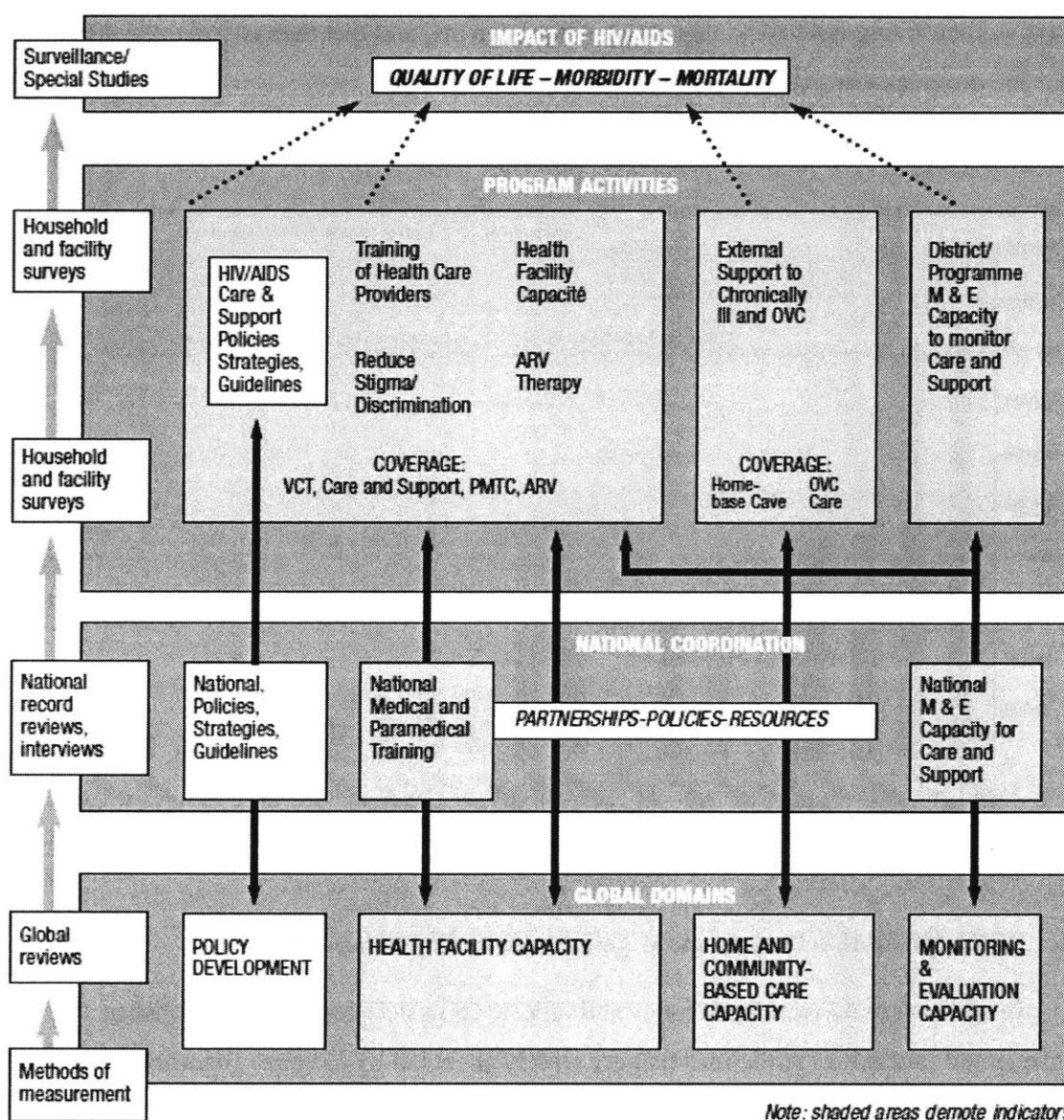


Source: WHO, HIV/AIDS Programme Highlights 2008-09 (WHO, May 2010)

In addition to delivering statistics and reports on its activities, WHO publishes monitoring and evaluation guidelines that are widely accepted by national governments as well as local health care providers. Every year, WHO collaborates with UNAIDS and UNICEF to deliver *Towards Universal Access*, which is a report and a reference for health sector progress for HIV. However, WHO provides recommendations and guiding frameworks for HIV/AIDS

efforts on all three levels: global, national, and local. In collaboration with UNAIDS, UNICEF, FHI, and USAID, WHO also published a Guide to Monitoring and Evaluating HIV/AIDS Care and Support, in which care and support programs are defined, and indicators for M&E are suggested (WHO, March 2004). Roles for activities and M&E at each level are described in the document as follows.

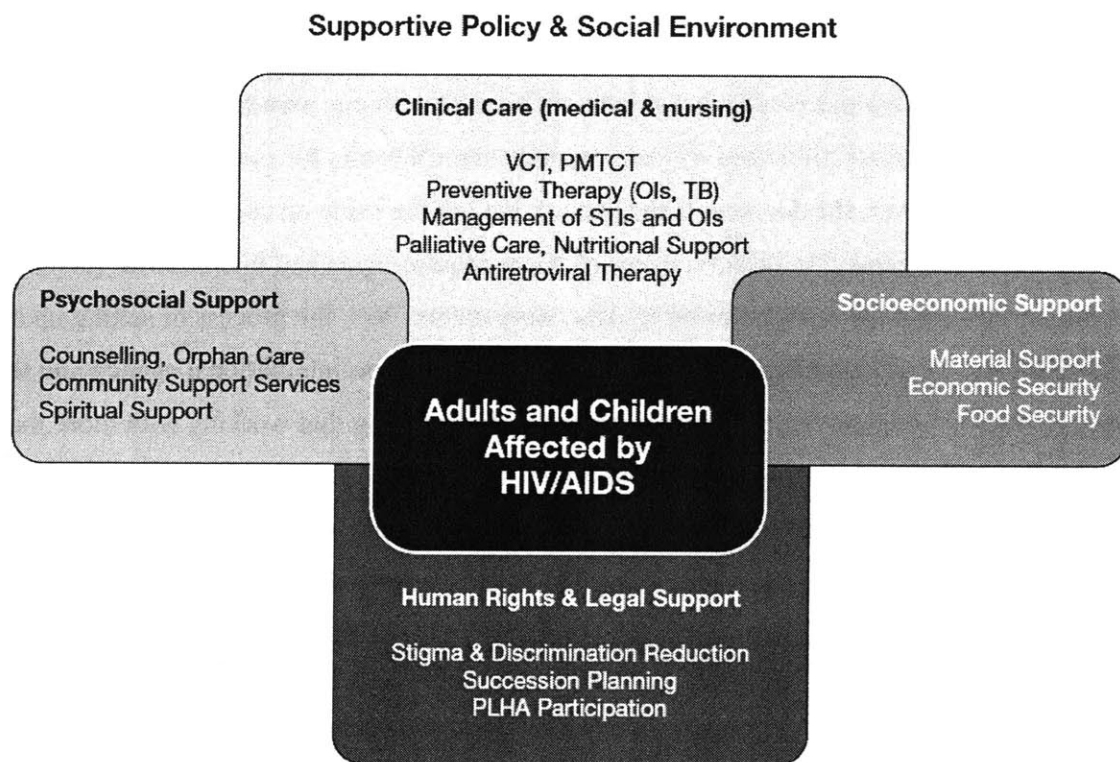
Figure 9. Monitoring and Evaluation Roles and Activities at Program, National, and Global Levels



Source: WHO, National AIDS Programmes: A Guide to Monitoring and Evaluating HIV/AIDS Care and Support (WHO, March 2004)

The diagram indicates that coordination at the different levels (global, national, facility) should result in the creation of a supportive regulatory environment and a developed infrastructure from the global and national levels, such that facilities can take care of program activities that bring real impact in the fight against HIV/AIDS. Furthermore, coordination in policy, strategy, and guidelines across these levels should lead to more effective delivery (WHO, March 2004). In addition to looking at responsibilities at the global, national, and local levels, WHO describes the many facets of HIV/AIDS care and support that must be addressed to provide complete care. The following diagram describes the different aspects of HIV/AIDS care and support that must be accounted for within a comprehensive system.

Figure 10. Four Main Domains of HIV/AIDS Comprehensive Care



Source: WHO, National AIDS Programmes: A Guide to Monitoring and Evaluating HIV/AIDS Care and Support (WHO, March 2004)

Though the responsible party is not listed, this type of care is generally delivered at the local service provider level, which, in turn, must be supported by higher district and national

players in order to provide effective and quality services. A list of WHO recommended HIV/AIDS care and support program indicators for monitoring and evaluation are attached in Appendix F.

From interviews with experts in the field, I learned that WHO guidelines are followed at the service provider level as well as national and state level. Matthew Peckarsky, the Health Surveillance and Evaluation Manager at Partners in Health¹¹, indicated that Partners in Health follows WHO guidelines and indicators to design the organization's M&E (Peckarsky, 2011). In my conversations with Veronica Miller, Executive Director of the Forum for Collaborative HIV Research¹² (Miller, 2011), and Pamela Ogata of the Los Angeles Office of AIDS Program and Policy¹³ (Ogata, 2011), WHO guidelines were brought up on multiple occasions as a source of reference for informing M&E program design and implementation.

2.6 Collaboration Among the Global Players

These five important players listed here collaborate with one another on many occasions. The documents published by each organization often cite the other four as partners and references. However, the documents themselves are not the same on each website. As seen by comparing recommended indicators, many of donor requirements and international guidelines share similar ideas and the same monitoring data components. Yet, the process of setting up an M&E system and the relationships between the donor organization/international agency and the service provider/national government vary tremendously, meaning that working with more than one of the five will require setting up multiple reporting systems. Though it is encouraging to see that WHO, UNAIDS, PEPFAR, GFATM, and MAP communicate with one another on some levels and that they all aim to improve existing M&E, the result of these collaborations clearly needs some improvement.

¹¹ Partners in Health (PIH) is a non-profit health care organization based in Boston that provides health care for the poor. The PIH model is based on five principles: access to primary health care, free health care and education for the poor, community partnerships, addressing basic social and economic needs, and serving the poor through the public sector.

¹² The Forum for Collaborative HIV Research is a public-private partnership at the University of California, Berkeley Washington Campus.

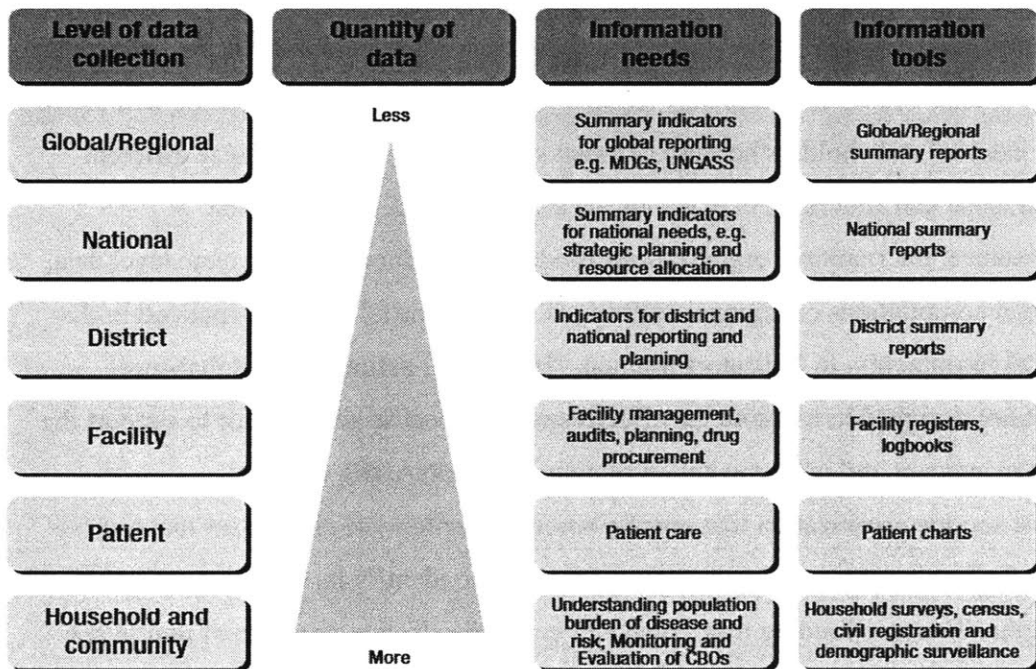
¹³ The Office of AIDS Programs and Policy (OAPP) is a program office of the County of Los Angeles Department of Public Health. It directs the overall response to the HIV/AIDS epidemic in Los Angeles County.

Chapter 3 : Enterprise Level – Strategic Approach to Internal M&E

Considerations for a monitoring and evaluation system at a local health service provider are different than that of an M&E system at the national or international level. This is naturally true based on the fact that stakeholders (enterprise managers, government officials, donors) have different sets of motivations and priorities. Though internationally accepted indicators and guidelines help to standardize M&E across organizations and countries, the disparity in incentive structures implies that the decision process to measure performance and the definition of relevant indicators ought to look different at each level.

The data collected at a health care delivery organization ought to reflect the intents of the portfolio of projects undertaken at the enterprise. This means that organizations should create and track indicators that are aligned with the strategy and goals of the organization’s activities. These project-level indicators theoretically provide a foundation to aggregate data for higher order use at the national and global levels. Not all project-level indicators may be useful for regional or national level monitoring and evaluation. However, a subset of them should be applicable for higher-level aggregation.

Figure 11. Information Needs and Tools at Different Levels of Data Collection



Source: WHO Health Metrics Network, Frameworks and Standards for Country Health Information Systems, Second Edition (WHO Health Metrics Network, June 2008)

As described above by the Health Metrics Network, facility level data collection should focus on facility management, audits, planning, and drug procurement. This data should be drawn from facility registers and logbooks. To go one step downstream, patient care data collection should be extracted from patient charts, probably located at the health clinic. This information should feed into higher-level data collection needs.

Theoretically, an enterprise designs performance measures based on the organization's strategic plan, the center of which would be the vision, mission, and core values. In this way, organizations control what and how they intend to contribute value. However, in practice, government regulations and funding requirements drive the data that is collected and reported. By doing so, external stakeholders set the prioritization of activities and the configuration of care provided by the local organization. In a phone interview with Brenda Rose of the AIDS Action Committee in Boston, I learned that even the HIV/AIDS care program in a Boston, where health resources are abundant, struggles to collect internally useful data. Instead, they collect data for national reporting and grant proposals. In fact, the AIDS Action Committee is looking to replace their current data monitoring system (Rose, 2011).

The process of fulfilling donor requirements often overwhelms M&E efforts within local service organizations to a point of preventing other attempts at internal monitoring. However, this cannot be a valid excuse to completely replace efforts on internal data tracking with those requested by external stakeholders because external stakeholders may emphasize different priorities than those that should be in place for the service provider organization.

For instance, international organizations fundamentally focus on aggregate level data, such as national compilations or regional collections of their portfolios. As explained in the 2010 UNAIDS Introduction to Indicators Manual, "In general, national and global-level indicators are not designed to measure the effectiveness of specific activities or to support the day-to-day management and implementation of activities" (UNAIDS, 2010).

As one service organization that may be among a portfolio of enterprises that receive funding from the same source, the service provider needs to identify its own competencies and unique strengths. Because funding may come and go by the election or whim of politicians overseas, financial survival is difficult to guarantee. Therefore, knowing and articulating ones strengths and purposes is important to maintaining a stable identity and focus, rather than

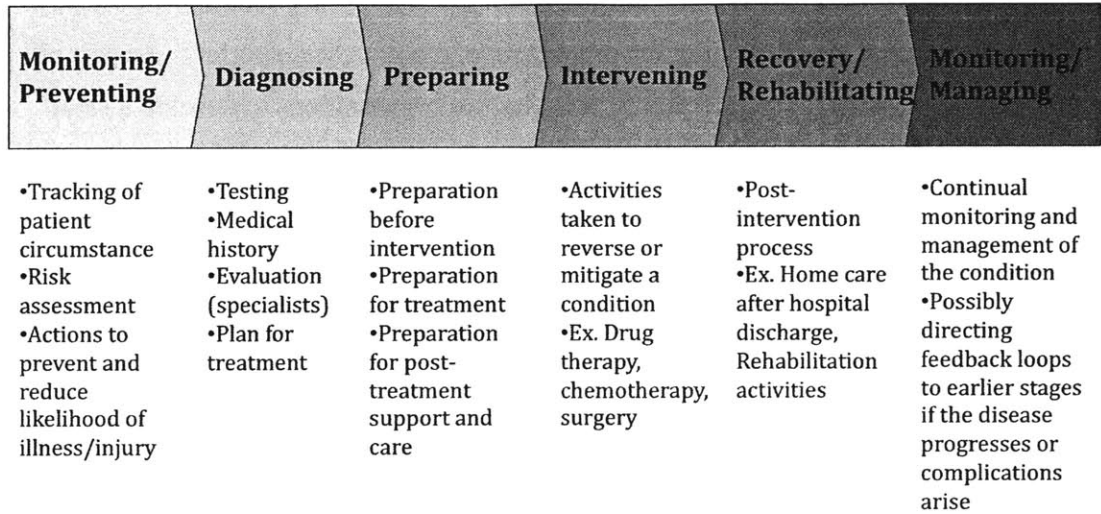
allowing the organization to fundamentally fluctuate based on availability of resources. Beyond minimizing internal management chaos from shifting resources, structuring activities based on a central strategy is also useful for advocating the organization to potential supporters. As part of this attempt to internalize management decisions, it is vital for organizations to develop a set of indicators that are specific to the purposes of their unique activities, regardless of those demanded by external stakeholders, who may have higher-order perspectives.

Each health care delivery organization faces different inputs reflecting the health needs in the community and the capacity by which the organization can fulfill those needs. Though we can categorize the types of inputs to an extent, the combination of characteristics lead to very different answers as to the best course of actions to take. Best practices, therefore, are often difficult to generalize. Therefore, instead of suggesting an absolute answer, I look to experts for advice on how an organization should approach strategy. The following section introduces one expert framework, the care delivery value chain, for understanding health care delivery.

3.1 Care Delivery Value Chain

The portfolio of activities that a health care delivery organization undertakes reflects a chosen scope of care delivery. The scope can be medically integrated across specialties, treatments, services, or time. Determination of this range and focus informs management needs for coordination, goal setting, and maximization of value for unit cost. The Care Delivery Value Chain (CDVC) is a framework for understanding the configuration of care delivery, focusing on one medical condition at a time (Porter & Tesiberg, *The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery*, June 2008). The value chain depicts treatments and procedures by medical stage of that condition. Listing the activities along a value chain shows us how the players, activities, and stages of care relate to one another. The framework displays the integrated nature of care delivery for a specific health condition. By visualizing the many facets of care, we can attempt to organize care delivery within a common understanding of comprehensive care. Furthermore, we can begin to understand and define success of a health care delivery program in the context of the entire care pathway. Implications of this exercise include management's improved ability to structure performance monitoring and evaluation within a chosen scope of care delivery. The figure below describes the components of a care delivery value chain and what each part entails.

Figure 12. The Care Delivery Value Chain



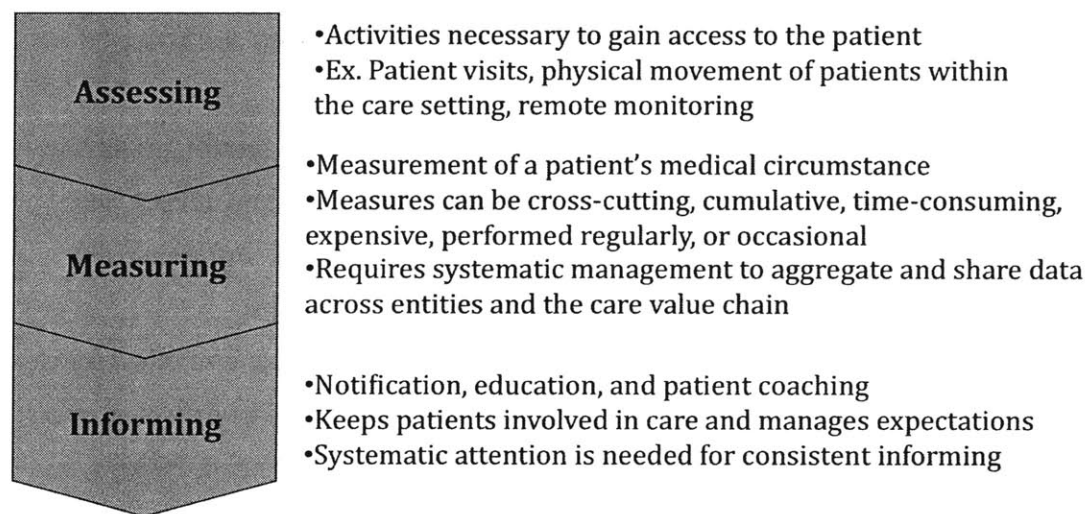
Source: Porter and Teisberg, The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery (Porter & Tesiberg, The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery, June 2008)

The care delivery value chain begins with *monitoring/preventing*, which is valuable for early detection and minimization of needed treatment. Focus on preventative care reduces potential medical costs. *Diagnosing* occurs when a patient is tested and evaluated. An effectively organized and recorded diagnosis process becomes valuable for sharing information in further consultations and across integrated care practices. *Preparing* is a step that is often overlooked in importance. The actions taken at this stage include mentally, physically, and financially preparing the patient and relatives. The impact of adequate preparation includes better execution of interventions and improved results. *Intervening* includes the activities taken to treat a condition. This step of the value chain includes the entire set of interventions needed, which can be looked at individually or analyzed as a combination of integrated interventions. *Recovery/rehabilitating*, like preparing, is a step that is often overlooked in terms of attention and significance. Sufficiently recovery and rehabilitation improves results and reduces re-hospitalization, thereby decreasing overall cost. This aspect of the value chain provides psychological, physical, and resource support. The final stage of care delivery is continuous *monitoring/managing* of the patient's condition. This step is valuable for identifying potential needs to re-visit earlier stages of the care delivery value chain in the event of complications. Monitoring and management involves improves long-term results and reduces the need for

additional care (Porter & Teisberg, *The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery*, June 2008).

In the care delivery value chain, patient value is defined as health results per unit of cost (Porter & Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results*, 2006). In addition to depicting the steps in a care pathway as a condition progresses, the care delivery value chain also points out the different aspects of knowledge management that must occur at each step in the value chain. These three aspects are assessing, measuring, and informing. The following diagram explains each of these three components.

Figure 13. Knowledge Management Along the CDVC



Source: Porter and Teisberg, *The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery* (Porter & Teisberg, *The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery*, June 2008)

The impact of having controlled and sufficient knowledge management is increased participation of the patient in his or her own care management. Active involvement and investment of the patient in his or her care usually leads to more successful outcomes as a result of managed expectations, self-monitoring, and early detection of complications or gaps in care delivery (Porter & Teisberg, *The Care Delivery Value Chain: Operationalizing Value-Based Health Care Delivery*, June 2008). Therefore, systematic efforts taken towards identifying and improving knowledge management can be valuable for care delivery and should be tracked along the value chain.

In order to reap the benefits of this tool, providers need to systematically delineate and analyze their process of care delivery for the entire care cycle rather than for a particular intervention or service. Providers engage in many activities that deserve management attention. Formal identification of activities and knowledge development by health care providers are crucial to increasing value (Porter & Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results*, 2006).

3.2 CDVC for HIV/AIDS

Applying the care delivery value chain framework to HIV/AIDS, the six components of the CDVC are categorized into Screening/Preventing, Diagnosing/Staging, Delaying Progression, Initiating Antiretroviral Therapy, Ongoing Disease Management, and Management of Clinical Deterioration.

Screening/Preventing consists of connecting the population to a care system, promoting prevention and testing. At this level, accessing patients occurs at testing centers, clinics, and educational outreaches. Measuring involves HIV testing and collecting data. Informing and engaging the population includes counseling and educating at-risk populations.

Diagnosing/Staging involves the formal diagnosis of HIV. The patient is checked for co-infections, assessed for HIV stage, and then a treatment plan is formulated. The patient accesses care at clinics and laboratories. Measuring includes having a CD4 count measured. Patients are informed of the diagnosis and the course of HIV.

Delaying Progression of AIDS is possible through therapies that delay onset. Patients are put on prophylaxis and monitored consistently for co-morbidities at clinics. During this stage, patients can be plugged into support groups and engaged with community health workers that monitor psychological and physical health. Access sites also include pharmacies and laboratories, where medical status and CD4 counts are measured. The patient is informed of the progression process and their personal progression (Porter, *Value-Based Health Care Delivery*, 2010).

Figure 14. CDVC for HIV/AIDS Part 1

INFORMING/ ENGAGING	<ul style="list-style-type: none"> • Prevention counseling on modes of transmission and condom use 	<ul style="list-style-type: none"> • Explanation of diagnosis and the implications • Explaining the course of HIV and the prognosis 	<ul style="list-style-type: none"> • Explanation of the approach to forestalling progression
MEASURING	<ul style="list-style-type: none"> • HIV testing • Screen for sexually transmitted infections • Collect baseline demographics 	<ul style="list-style-type: none"> • HIV testing for others at risk • Clinical examination CD4+ count and other labs • Testing for common co-morbidities such as tuberculosis and sexually transmitted diseases • Pregnancy testing 	<ul style="list-style-type: none"> • CD4+ Count Monitoring (Continuous Staging) • Regular Primary Care Assessment • HIV Testing for Others at Risk • Laboratory Evaluation for Medication Initiation
ACCESSING	<ul style="list-style-type: none"> • Testing centers • High risk settings • Primary Care Clinics 	<ul style="list-style-type: none"> • Primary Care Clinics • On-site laboratories at Primary Care Clinics • Testing Centers 	<ul style="list-style-type: none"> • Primary Care Clinics • Laboratories (on-site at primary clinic) • Pharmacy • Food Centers • Community Health Workers/ Home Visits • Support Groups

SCREENING/PREVENTING	DIAGNOSING/STAGING	DELAYING PROGRESSION
<ul style="list-style-type: none"> • Connecting patients with primary care system • Identifying high risk individuals • Testing at-risk individuals • Promoting appropriate risk reduction strategies • Modifying behavioral risk factors • Creating a medical record 	<ul style="list-style-type: none"> • Formal diagnosis and staging • Determine method of transmission and others at potential risk • Identify others at risk • Screen for TB, syphilis, and other sexually transmitted diseases • Pregnancy testing and contraceptive counseling • Create management plan, including scheduling of follow-up visits • Formulate a treatment plan 	<ul style="list-style-type: none"> • Initiate therapies that can delay onset, including vitamins and food • Treat co-morbidities that affect progression of disease, especially tuberculosis • Improve patient awareness of disease progression, prognosis, and transmission • Connect patient to care team, including community health work

Source: Michael E. Porter, Value-Based Health Care (Porter, Value-Based Health Care Delivery, 2010)

Initiating Antiretroviral Therapy occurs once the disease progresses to the point of needing ART. Patients must be prepared for the effect of drugs. Patients still access care through

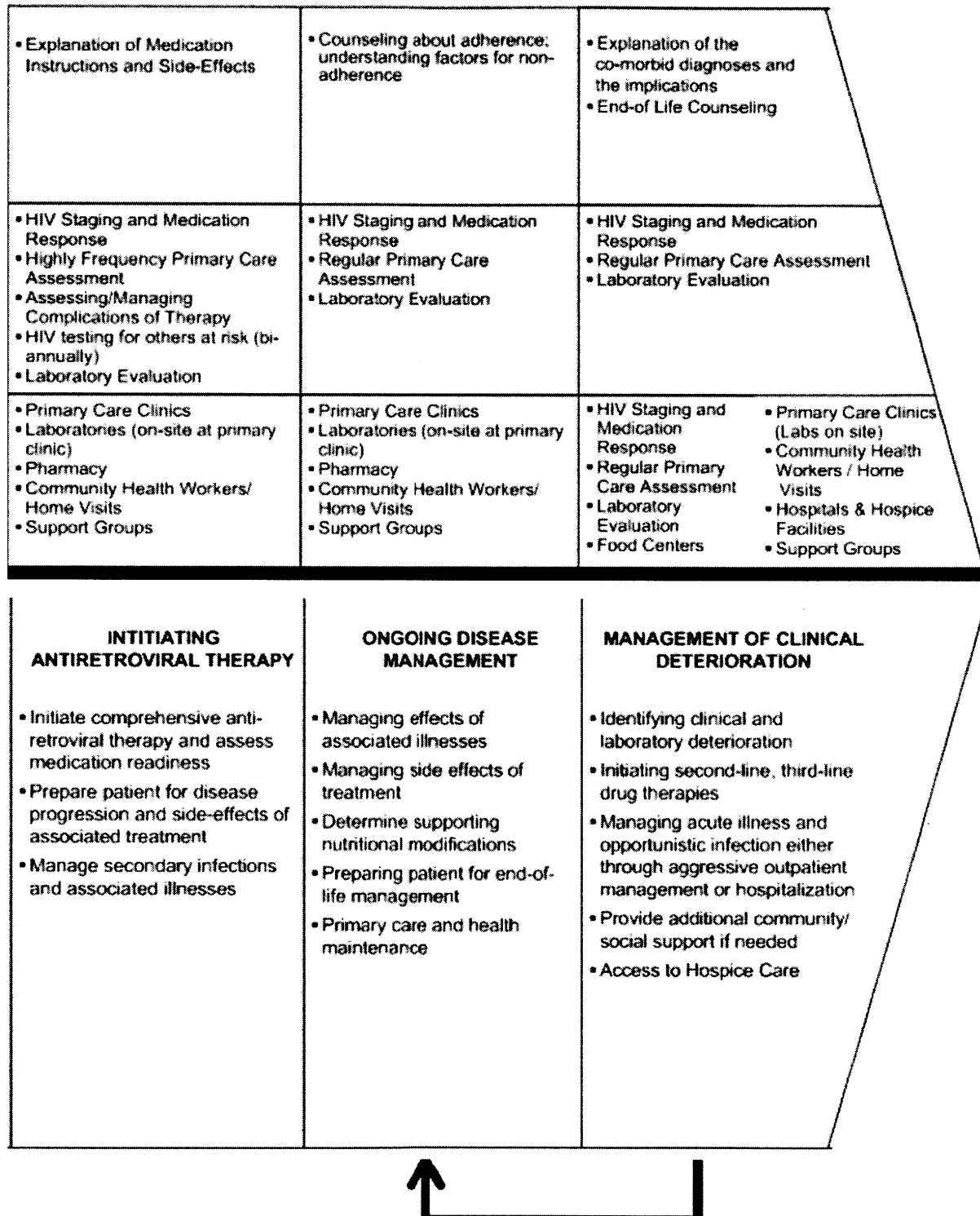
clinics, laboratories, pharmacy, support groups, and community health workers. Measuring consists of monitoring medication response, laboratory tests, and managing possible complications. Patients are informed of medication instructions and side effects.

Ongoing Disease Management consists of continual monitoring of treatments, co-infections, and preparing for future steps. Patients are measured for medication response, general health assessments, and laboratory tests. They are informed of consequences of non-adherence and counseled for support and assistance.

Management of Clinical Deterioration is necessary and inevitable because AIDS has no cure. As the disease progresses, patients need to prepare for end-of-life care. Therefore, access sites expand to include hospitals, hospice facilities, and services that specifically deal with emergency response. Patients are measured for HIV stage, medication response, laboratory tests, and potential acute illness or opportunistic infections. Patients must be engaged and informed of the status of their condition, so that preparations can be made regarding end-of-life arrangements and counseling (Porter, Value-Based Health Care Delivery, 2010).

Drawing out the entire HIV/AIDS care delivery value chain allows us to visualize the activities that are involved in the care of an HIV patient. Health care delivery organizations may choose not to participate in every aspect of the value chain and, instead, specialize in one aspect of care. However, it is important to understand how seemingly discrete actions are integrated into a whole process within the care pathway. Additionally, focused care delivery can have implications that exceed the seemingly narrow scope. For instance, early diagnosis through regular testing and monitoring can help to forestall disease progression. Also, improving compliance via patient engagement reduces drug resistance and the cost of second-line therapies (Porter, Value-Based Health Care Delivery, 2010).

Figure 15. CDVC for HIV/AIDS Part 2



Source: Source: Michael E. Porter, Value-Based Health Care (Porter, Value-Based Health Care Delivery, 2010)

Defining the scope of care delivery at the service provider level is important for monitoring and evaluation purposes. While external organizations may have requirements and guidelines for choosing indicators from the perspective of the entire value chain, internally, management will create a strategic plan based on the scope of care that the organization chooses to deliver. The indicators that are tracked for monitoring and evaluation purposes should specifically reflect the selection on the value chain and consider how that part relates to the rest of the value chain.

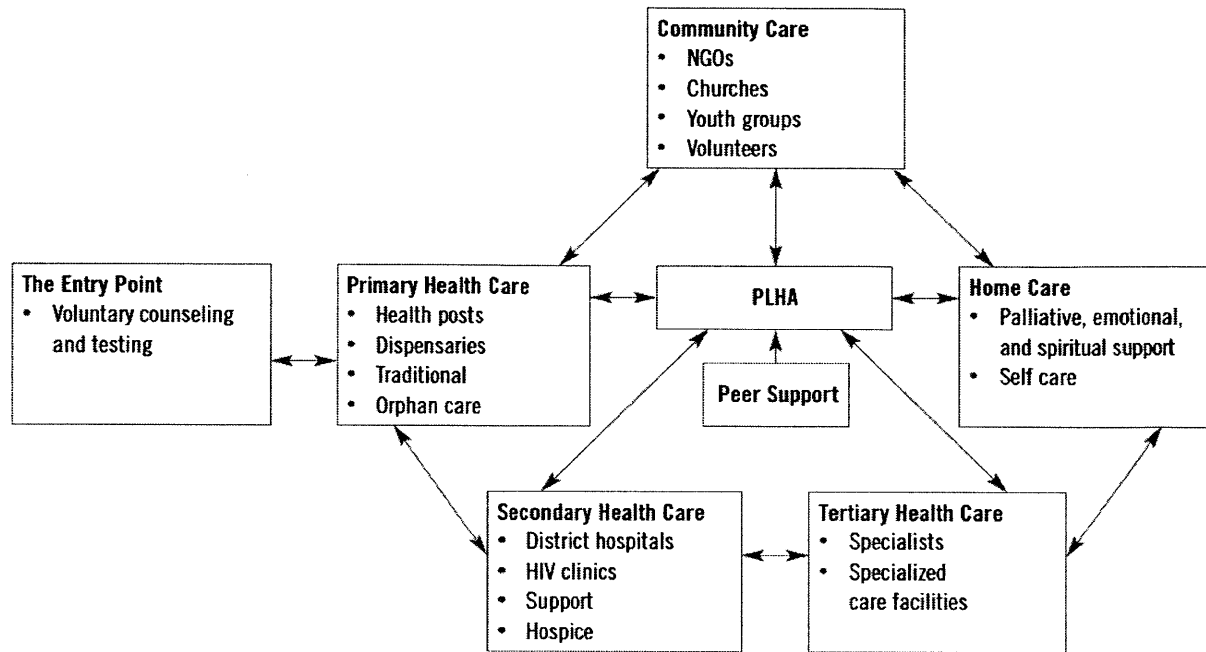
The choice of indicators and performance measures reflects a decision regarding prioritization of care activities. Each decision, intentionally or not, exerts a definition of success and an emphasis of the output, outcome, or impact that is important to the service provider. Therefore, laying out the CDVC for AIDS can be useful to illustrate these decisions and efforts made by the organization. Rather than adopting a set of recommended indicators, the organization should actively control its scope of care, the value it wants to deliver, the change it hopes to effect, and the part of the landscape that its activities aims to alter.

3.3 Comprehensive Approach to HIV/AIDS Care Delivery

Traditional business strategy would suggest that in order to get the most value from a limited set of resources, an organization should specialize in a specific part of the value chain. Scope should be determined by the core competencies of the enterprise, and energy should be focused to exploit that advantage in order to bring the highest potential value to the market. Enterprises should leverage the supporting organizations that focus on other aspects of the value chain, so that a network of specialized service providers complete the entire chain to bring the patient comprehensive care within a system of health care delivery organizations. However, in the case of many health care organizations in developing settings, the supporting infrastructure is not well established. Therefore, only supplying one aspect of the value chain will not sufficiently bring value to the patient.

When designing a care model for HIV/AIDS, the service provider must consider the complexity of addressing the needs of a patient. Providing comprehensive care should involve multitude of entities that contribute to the system of health care. The following diagram illustrates the continuum of care that is necessary to care for a patient living with HIV/AIDS.

Figure 16. HIV/AIDS Continuum of Care



Source: FHI, Evaluating Program for HIV/AIDS Prevention and Care in Developing Countries: A Handbook for Program Managers and Decision Makers (Family Health International, 2006)

According to FHI, comprehensive HIV/AIDS care is provided over a continuum of care, involving testing sites, primary health care, community groups, home care, peer support, and secondary and tertiary health care providers (Family Health International, 2006). Because the different players in this system have different roles in HIV/AIDS care, they each have their own strategies and M&E designs to measure individual success. We can look at overall impact by evaluating the entire system, but to analyze the individual parts, data monitoring focuses will be divided among the stakeholders.

Chapter 4 : Kyetume Community Based Health Care Programme: Case Study

Kyetume Community Based Health Care Programme (KCBHCP) is a faith-based health care organization located in the Mukono District of Uganda. It serves two subcounties, Nakisunga and Ntenjeru, within rural Mukono and has a catchment size of over 100,000 people. The mission statement of KCBHCP is “to improve the general health standards of underserved rural people within Mukono District and Uganda at large by influencing behavior of rural communities using a community based involvement/participatory approach” (Kyetume Community Based Health Care Programme, 2009). At the core of the organization is the principle that providing health services in the community requires an integrative perspective to care, demanding social as well as economic support in order to sustain physical health. This model of health care delivery is not new, with celebrated organizations such as Partners in Health also pursuing education, community involvement, and social and economic development in addition to providing quality medical services (Partners in Health, 2011).

KCBHCP was founded in 1992 as a group of Christians who met under a mango tree outside a local church, educating the community on the importance of hygiene and healthy practices. Since then, KCBHCP moved into a house, where health services could be carried out. The scope of the organization grew from Maternal and Child Health to include primary care, immunization, and antenatal care. In 1997, the HIV/AIDS Program was officially defined. KCBHCP began to offer income-generating vocational training programs in 2000. By 2007, KCBHCP ran more than six different activities including the Oxfam funded Gender-Based Violence Program (Kyetume Community Based Health Care Programme, 2009). Currently, KCBHCP provides home-based care to more than 560 HIV positive clients, with over 100 individuals counseled and tested every month.

4.1 Integrative Health Strategy

As of 2011, Kyetume Community Based Health Care Programme is made up of seven overarching programs: HIV/AIDS, Maternal and Child Health, Gender Based Violence, Sexual and Reproductive Rights Promotion, Water and Sanitation, and Orphan and Vulnerable Children. Within the Orphan and Vulnerable Children program are a number of projects, including the Orphan Support Project that provides households with cows and goats for income generation;

Agriculture that provide training for organic farming and creation of keyhole gardens; Vocational Training Programs for developing income generation skills in tailoring, hairdressing, computer skills, carpentry, and automechanic skills; Child Counseling and Guidance; and Microfinance. The Orphan Support Project alone has benefitted over 900 orphans to date. The activities of KCBHCP are tied together by the underlying principle that the issues addressed by each program are interrelated. The belief is that addressing the determinants of health and patient behavior is key to improving the overall health of the community.

Applying the care delivery value chain to KCBHCP, we can see that KCBHCP participates in six categories of the HIV/AIDS care delivery value chain. Prevention efforts include running sexual and reproductive health education classes at schools. VCT occurs at clinics as well as during outreach activities in the local community. Patients are counseled before and after the test. For diagnosing and staging, lab work and designing treatment plans occur at the health facilities, where lab technicians, doctors, nurses, and counselors work together. KCBHCP provides services during the delaying of progression, which include co-infection testing, drugs, education, and support groups. Initiation of ART is supported by the Ugandan government's policy on free ARV drugs. KCBHCP is very active for ongoing disease management. Adherence is monitored when CCAs go out to the community to check on patients. KCBHCP is less involved in the management of health deterioration, though they provide counseling for family members, including child counseling and OVC support programs.

From a distance, KCBHCP's strategy to engage in so many activities can seem to be unwise. Critics may claim that having such a broad focus spread already limited resources even thinner and that without a narrow focus, innovation and the development of competencies become slowed. However, a closer look at the Kyetume community reveals the relationship among education, income generation, ability to obtain health services, and willingness to improve on physical health. The ability of a person to obtain medical care for HIV/AIDS depends on their access to health knowledge and education, their ability to afford transport, as well as their ability to sustain the social and economic wellbeing of the members of their household. Understanding this concept is critical to why having a strategy of integrative model of health care is logical and necessary for raising the health of this community. In more developed parts of the world, a network of enterprises and established public infrastructure support community health so that an organization can achieve its vision for improved community

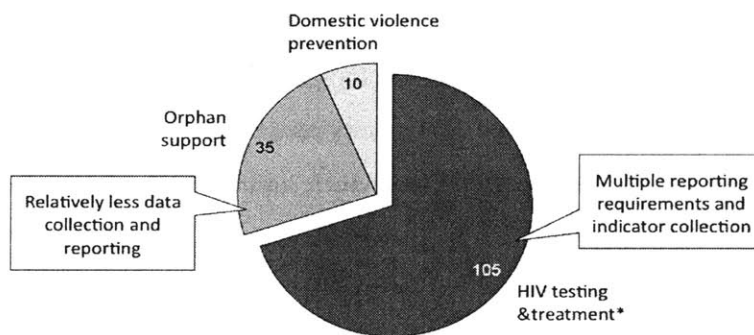
health by focusing on one aspect of health care delivery. However, the absence of this strong network requires KCBHCP to address the social and economic aspect of health development in order to sustainably raise the overall level of health for the people in their Mukono catchment area. KCBHCP recognizes that providing health care in its community demands simultaneous social development. With no other player stepping up to that challenge, KCBHCP takes on responsibility that might ideally be the role of other organizations or the public sector. Whether or not this is a realistic or sustainable objective remains to be determined.

The KCBHCP strategy draws upon members of the community to participate in the vision and mission of the organization. Community Counseling Aids¹⁴ are community volunteers that reach out to people that KCBHCP would otherwise be unable to affect. Having a member of a person’s own town speak to them can be a successful way to develop trust and foster Kyetume’s credibility in the community. This strategy to engage community members is a key component to KCBHCP’s success.

Though KCBHCP runs multiple programs, the HIV/AIDS program tends to dominate the majority of KCBHCP resources. A reason for this is that the HIV/AIDS program receives the most funding, which means that it is vitally important for KCBHCP to sustain these funds. In order to do so, KCBHCP dedicates a significant amount of effort towards fulfilling donor requirements, which in this case, is quite extensive and labor-intensive.

Figure 17. Kyetume Community Based Health Care Programme Annual Budget

Kyetume CBHCP annual budget, approximate
100%= USD 150,000



Source: KCBHCP, acquired on site, accessed March 2011

¹⁴ Community Counseling Aids are similar to accompagnateurs in the PIH model or Community Health Workers in other health delivery organizations. However, accompagnateurs of the PIH model are paid. CCAs at KCBHCP are paid minimally, but transport costs account for much of the compensation, so the CCAs tend to work other jobs to sustain a living.

4.2 Data Monitoring

The fact that KCBHCP covers such a wide range of activities that directly or indirectly relate to the success of an HIV/AIDS program poses an interesting challenge for data monitoring. The value proposition of the organization demands that community determinants of HIV/AIDS be considered when deciding upon indicators to track and formulating the measures for performance evaluation. However, the data collected at KCBHCP, like many grant-dependent health care organizations, are donor determined and standard to HIV/AIDS programs regardless of the care model.

KCBHCP's HIV/AIDS program is funded by the Inter-Religious Council of Uganda (IRCU), which receives money from USAID/PEPFAR. IRCU's aim is to strengthen FBO¹⁵ capacity to plan, implement and deliver community based HIV and AIDS services while building on existing structures and unique experiences (The Inter-Religious Council of Uganda). However, as a PEPFAR funded donor, IRCU demands detailed monthly reports from KCBHCP based on pre-established PEPFAR criteria (see Appendix G). The data demanded by IRCU is generic to all HIV/AIDS programs funded by PEPFAR and not catered specifically to KCBHCP's situation. The process of data collection and reporting for these given indicators is tiresome and resource consuming (Kibirige, 2011). A lot of energy is spent on fulfilling donor requirements for funds that are essential to keeping the program running. As a result, relatively little time has been allocated towards developing an internal monitoring system that is specific to KCBHCP's strategic needs. In this sense, KCBHCP reflects a sentiment that has been repeated in interviews (see Appendix H) in that the entire HIV/AIDS data-monitoring program is defined by donor requests rather than having been built from internal organizational strategy.

From an objective management perspective, externally imposed data monitoring is not ideal M&E. As mentioned in the introduction, M&E should be tailored to internal strategy so that it is appropriate and comprehensive for the purpose of the organization. However, because the existence and continuation of operations and activities depends 100% on donor funding, health care service enterprises such as KCBHCP often end up catering its activities to where the money is, despite initial strategy. With the need to adapt activities to funded projects, grant-dependent organizations have a fundamentally difficult time sticking to their original plans if those plans don't perfectly coincide with donor agendas.

¹⁵ "FBO" is an acronym for faith-based organization.

Additionally, the need to fulfill donor requirements becomes even more stressful with resource constraints making the data collection and reporting process labor intensive. With unreliable availability of electricity and limited number of working computers, Access databases and intranet linked computer data input systems become impractical and unrealistic. Therefore, the staff at KCBHCP must devote precious time and work to shuffling through paper documents and filling out forms one at a time. The paper-based system is a reality due to infrastructure constraint. Because PEPFAR has one set of requirements standardized for all types of settings, the burden of fulfilling donor requirements sits more heavily on some organizations than others.

4.3 HIV/AIDS Program Data Collection and Reporting

Counselors, lab technicians, nurses, and doctors fill out forms on a daily, per patient, basis. On a monthly basis, they each need to fill out multiple monthly forms, which compile some of the information recorded on daily forms. These monthly reports are then submitted to the KCBHCP data officer and M&E program manager, who put together the forms that are eventually delivered to external stakeholders, such as donors, the Ministry of Health, and other regional government offices (Kibirige, 2011).

Figure 18. Kyetume Community Based Health Care Programme Reports

Daily, Per Patient Forms

Form	Required By	Form	Required By
•Registration form	KCBHCP	•ART recruitment/ checklist	KCBHCP
•VCT form	KCBHCP	•Counseling session report form	KCBHCP
•Lab request form	KCBHCP	•Client 's revisit medical and counseling information	KCBHCP
•Excel-Based Laboratory Record	KCBHCP	•Outpatient Department book	KCBHCP, checked by district gov. officer
•Client card	KCBHCP	•HIV care / ART card	Ministry of Health

Monthly Forms

Form	Required By	Form	Required By
•ART Report	KCBHCP	•Client Data HCT, Palliative, TB, PMTCT	IRCU
•PMTCT Report	KCBHCP	•Client Data ART	IRCU
•Routine Monthly VCT	KCBHCP	•HMIS Report	Ministry of

Report			Health
•Routine Monthly Laboratory Report	KCBHCP	•MEEP	IRCU
•Internal Monthly Report	KCBHCP		

Source: KCBHCP, acquired on site, accessed March 2011

Currently, the only process that is computerized is the creation of the internal monthly report and the MEEP reports. Excel is used to create charts based on the data inputted into the computer from daily and monthly forms, which are hand-written by staff.

Although IRCU (via PEPFAR) and the Ugandan Ministry of Health have both indirectly been involved in UNAIDS MERG attempts to streamline data indicators and M&E processes, the fact that both parties require separate report forms remains a problem. It is burdensome for KCBHCP to fill out so many forms with a paper-based system because each data point requires looking through stacks of paper files. A complete list of indicators collected by KCBHCP is presented in Appendix H. This process is labor-intensive and, arguably, poorly spent time for clinicians and counselors who can otherwise be attending to clients (Kibirige, 2011).

4.4 Uneven M&E Development

The assertion that external donors dictate KCBHCP's data monitoring was confirmed during the Global Health Delivery Lab's two week on site project at Kyetume. The primary aim of the project was to help develop and improve upon the existing data monitoring process at KCBHCP. Our focus was to start with the HIV/AIDS program and transfer the findings, thought process, and tools to other KCBHCP programs with time permitting.

We quickly learned that IRCU's requirements for the HIV/AIDS program led to time-consuming efforts to track over 300 indicators. For KCBHCP, the purpose of data collection seemed to be to submit reports rather than to conduct analysis and discussion on internal improvement. In comparison, the OVC program doesn't require such rigorous reports to be submitted to donors on a regular basis. As a result, the M&E for the OVC program is purely qualitative in nature, doesn't have a formal list of indicators to track, and appears dwarfed next to the lengthy number-heavy HIV/AIDS reports. This, however, is not representative of the importance and impact that the OVC program carries for KCBHCP. Considering the core values of integrative care and support as well as community involvement, one would think that the OVC program ought to have a level of M&E equal in quality and resource consumption in order for

internal management to measure and improve upon performance. A third interesting example is the relatively sophisticated M&E system developed for the Gender Based Violence Program, which is funded by Oxfam. Oxfam-driven M&E demands more than routine data collection from its partners. The donor organization involves the GBV program staff to learn about the purpose behind their M&E efforts, fostering ownership, investment, and quality check. Oxfam directly conducts evaluations on program performance, participates in discussions about strategy and activities, and involves GBV staff to improve their own capacity through teaching and guidance (Kayondo, 2011).

Seeing the three uneven levels of M&E development within one overarching organization was a bit surprising. However, the existence of this disparity signals clearly that M&E was an external influence and imposition rather than something that grew organically from within.

4.5 Lessons Drawn From KCBHCP

KCBHCP is an example of how M&E tends to be established for the sake of donor reporting rather than for internal improvement. The separation between data collection and internal strategy results in meaningless data collection for the sake of data reporting. Without ownership and intentional M&E from within the organization, M&E becomes purely about obtaining resources and funding whereas in other grant-independent organizations, M&E is an effective management tool.

The GHD Lab team's aim was to help KCBHCP by exploring the disconnect between what is being done and the potential for how those actions can be leveraged through intentional efforts towards internal improvement. The common problem of strictly donor defined data monitoring shows that this aspect of global health delivery has been slow to develop and is only now adapting established management expertise for donor-dependent development organizations.

However, it is important to also note that fault should not be placed on enterprise management. As explained by KCBHCP Programs Manager, Reuben Mubiru, the process of fulfilling donor requirements is painfully time and resource consuming. Intentionally or not, the funds and contingencies related to resource needs end up driving strategy and organizational operations. While KCBHCP would like to spend more time pursuing client work, the programs don't exist without the money to fuel them. In this way, program managers have their hands tied. When asked to describe the effect of the data reporting process, Mr. Mubiru said it "limits

their ability to innovate,” which, reflecting an issue raised in expert interviews, voices a common concern among grant dependent health care delivery organizations (Mubiru, 2011).

4.6 Broader Implications of the KCBHCP Experience

It is not uncommon for health care delivery organizations in developing areas to begin with one program with one purpose and then expand to delivering supporting services. For instance, KCBHCP’s first program was Maternal and Child Health. This included PMTCT services and HIV/AIDS treatment and prevention. As the organization realized that beneficiaries’ health behaviors were related to their economic situations and that the well-being of orphans and vulnerable children were being neglected and marginalized, KCBHCP began the Orphan and Vulnerable Children Program. Eventually, this program grew to providing animals and farming education for income generation. While this type of organizational growth can be understood as fulfilling needs in the community, the truth is that delivering maternal and child health services is quite different from teaching household caretakers to start a small garden. From my perspective, the act of expansion is not the key problem, but rather the lack of strategy and thoughtfulness regarding organizational capabilities.

An enterprise with a strong management core recognizes that a balance needs to be struck between the needs in the community and what the enterprise should realistically provide. For transferrable resources, the cost to performing one function normally takes away from performing other functions when resources are limited. For instance, organizational budget, facility space, and employees’ time needs to be shared among the various activities. When an organization’s activities are dissimilar, the skills and resources needed are not necessarily transferrable among all programs. For instance, the same doctor or nurse can provide treatment for HIV and TB. However, the expertise required for raising heifers and goats will use a different skill set than delivering medical services. The equipment and supply sources for agriculture are not the same as for clinical services. The management needs for these various programs, thus, are also different. Therefore, an organization’s ability to be successful in one program, does not guarantee that it will be successful in another endeavor, especially if the second program requires dissimilar capabilities. The decision to expand activities for a donor-supported service provider ought to consider the organization’s core competencies.

The revenue stream for an organization such as KCBHCP comes from external donors, not from beneficiaries. In other words, revenue is not tied directly to the value that beneficiaries

receive through services provided by KCBHCP. By requiring regular reports, donors make efforts to connect organizational performance to the amount of funds given. However, by the nature of this arrangement, the NGO's incentive structure is a delicate balance between donors and beneficiaries. Theoretically, donors should have beneficiary needs in mind when designing indicators and performance measures. However, due to other reasons mentioned in this paper, the realization of this intention is complicated in reality. As differences arise between what donors envision and what organizations believe is best for the beneficiary, the incentive for the NGO incrementally evolves to either satisfy donor requirements or to satisfy beneficiary needs.

For an organization like KCBHCP whose vision is to raise the overall health of the community, the scope of services should theoretically consider the needs of the beneficiaries and the organization's capabilities to serve the community. However, when a large sum of donor funding is tied to HIV/AIDS services, then it becomes understandable for the service provider to dedicate more effort to the HIV/AIDS program. Additionally, since the process of filling donor reports is resource-consuming, time, effort, and manpower is taken away from other activities within the organization.

The importance of balancing donor-driven priorities and organization-driven priorities cannot be more highly emphasized. In order for a health care service delivery organization to not sway to and fro based on funding availability, it is extremely important for the organization to keep to a centering principle and have a strategic plan as an internal guiding force. This can be in the form of periodic management reviews on activities to check if the organizational is staying true to its own vision, mission, and goals.

4.6.1 Balancing Stakeholders

Donors and health care delivery organizations share a common goal to decrease the burden of HIV/AIDS at the beneficiary level. Donors expect to do so by financing local service providers who act on the shared objectives and motivations. However, in reality, the issue of which stakeholder should lead the service agenda becomes a topic of contention. The service provider, by nature of being local, can argue that they have a better sense of beneficiary needs. The donor organization can argue that they have experience with multiple health care delivery organizations to expect specific outcomes based on a set of standard criteria and practices. Yet, this conflict for priority setting and legitimacy of decision makers is complicated by the fact that both parties need each other. Large donor organizations are not equipped to develop health care

delivery services in multiple places around the world. They need to leverage the know-how of existing local enterprises instead of spending valuable resources replacing them (Kakuhikire, 2011). Likewise, service providers cannot function without the money and resources offered by donor groups, so they are obligated to cooperate (Mubiru, 2011).

There are three key points that must be addressed in order to relieve some tension between donors and local health delivery organizations. First is that a balance between trust and caution must be struck. The fact that service providers and donors need each other to reach a common goal requires a partnership to be established. An effective partnership, like most successful relationships, is based on trust that both parties are working towards the same purpose and that both have a legitimate role in this purpose. Yet, because they are two separate entities with different organizational incentives, caution must be taken to check that the actions being required and taken are aligned with both parties' interests in mind. For instance, service providers need to take the time to fill out regular reports to donors. However, if this process becomes unreasonably tiresome and takes away from the ultimate goal to provide better service to the beneficiaries, then perhaps the donor organization should rethink its requirements.

Second is that negotiation power must be shared. For the sake of ownership and buy-in, the health care delivery organization must have some participation in the activities of its organization, which is true beyond the purpose of monitoring and evaluation programs. Also, the donor organization needs to keep a continual learning feedback loop so that it can better understand the needs and concerns of beneficiaries and service providers (Kakuhikire, 2011). By allowing some negotiation to occur regarding M&E data collecting and reporting, the donor organizations can better tailor their standard indicators and performance measures to be appropriate and effective.

Third, donor level control of a health care enterprise's activities must be allow for a degree of freedom to innovate. While one can understand a donor organization's concern over the uses of given resources, the service provider must be allowed some space for creativity. As with KCBHCP, the current donor-service provider relationship is tightly controlled, where money is provided for stated and reported activities, with little room for discussion or experimentation (Mubiru, 2011). The growth of an enterprise is tied to its ability to explore activities, possibly fail, and then learn to better capture market needs at lower costs. However,

innovation is often constricted by the few activities that donor organizations choose to finance and the weight of reporting duties tied to that money.

4.6.2 Resource Limitations

For organizations that depend 100% on donor funding, satisfying donor requirements is held at the highest priority (Mubiru, 2011). Securing funds is equivalent to securing fuel vital for survival. Unfortunately, the combination of the heavy load of paperwork and resource limitations makes the burden of fulfilling donor requirements extremely heavy.

The fact that global health actors are recognizing the need for M&E is a step in the right management direction. However, the development of effective M&E has been a slow and cumbersome process that still needs massive improvement. In the developed world, we can take for granted the convenience of technology and the implied efficiency gained through technological innovations, such as new computing software or electronic databases. In our world of ever-present computers, people are expected to be able to pick up and use new technologies that make our work easier. Even in the United States, technology has not been a cure-all solution to the inefficiencies of the American health care system. However, the ability to store medical records, communicate with patients, share documents, compile data, and analyze statistics are very much technology dependent and extremely important to improving speed and efficiency of health care provision.

In the developing world, where even electricity and running water are not dependable, different methods for health care solutions must be utilized. When computers, expensive software, and people who can comfortably use such technology are unavailable, the solution to improved health care provision, monitoring, and evaluation (at the local level) must be one that is tailor fit to the local situation. Moreover, these answers need to be in a format that is transferrable and translatable to district, national, and donor level requirements.

There are two ways to solve this conundrum of increasing the ease of reporting without deteriorating the quality of data. The answer lies either with the local provider or with the donor. Either, the health care delivery organization finds a way to better effectively collect and report data, or the donor lessens the burden of the requirements. It is necessary to strive for a balance between achieving sufficient data and having reasonable expectations for a resource-constrained enterprise. Reducing this tension requires having the freedom to negotiate custom fit reporting details for individual organizations. Another option would be to come up with a set of data

requirements that is somehow suitable for all organizations. Considering the variety in health care delivery type, scope, and context, I do not find this second option to be realistic, practical, or appropriate.

4.6.3 Internal Data Management

As is true with all enterprises, internal management must drive the functions and operations of the organization. Management in the non-profit sector differs from the for-profit sector in that profits are not the only deciding factors for organizational survival. Consequently, the fact that beneficiary-driven revenue and outcomes don't drive survival and competition means that innovation, learning, and continuous internal improvements aren't given as much emphasis as they typically are given in for-profit enterprises. The problem with this is that efficiency and cost-effectiveness of spent resources are not directly reflected in the organization's ability to function. Therefore, many of these organizations don't place enough emphasis in measuring performance and cutting activities that waste valuable resources.

Managerially sound performance measures are designed internally, based on the organization's strategic plan. Metrics for evaluating progress towards organizational goals and program objectives ought to be determined simultaneously with goal setting to make sure that the goals are specific, measurable, achievable, realistic, and time-framed (SMART). In this way, the organization defines what it aims to achieve and how it plans to do so. An advantage of having the local service provider determine performance measures is that it can consider local context, unique beneficiary needs, and its own resource limitations and core capabilities. I argue that, regardless of M&E requirements demanded by an external party, every successful health care delivery organization must create and maintain a self-determined, custom-fit, and self-owned internal monitoring and evaluation program. Perhaps external parties' M&E requirements can be incorporated into the organization's internal M&E program for efficiency sake, but the health care organization cannot easily stay focused on its core mission without having a stable self-monitoring and evaluation system in place.

Data gathered from this M&E system is designed to be reflective of the strategic plan and uses indicators that are useful for the organization itself. The management team will be able to measure the organization's progress at achieving stated goals, selecting the activities that are successful and others that are not. Ideally, actions can be taken to either improve or cut activities that do not generate sufficient value. Because the indicators are self-defined, they are consistent

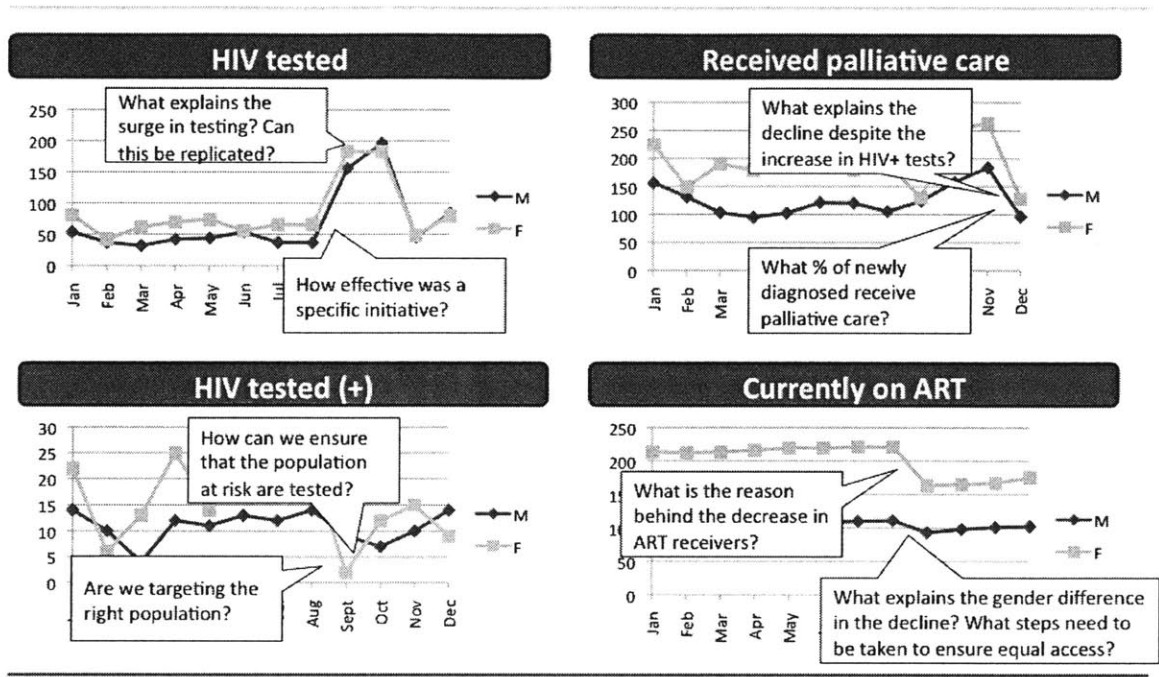
to the organization's core versus set to the priorities of external parties. Furthermore, while donor organizations may change over time, district and national reporting requirements adapt, and international guidelines affect new standards, the internal M&E of an organization adapts to its own pace and requirements, which helps to stabilize the internal operational and keep the management focused.

4.6.4 Dashboard

To assist KCBHCP develop internal data monitoring, the MIT Global Health Delivery Lab team created a tool for the organization that can be relevant in other HIV/AIDS care delivery organizations. The concept is to create a dashboard of key indicators that the organization can track, so that management can get an idea of performance with a quick glance. The current approach requires flipping through long documents and files, which becomes intimidating to a point of dismissing review altogether. The dashboard is meant to offer a summary understanding of organizational performance based on aggregation of chosen indicators. Longitudinal analysis shows general trends toward or away from set targets. In this way, Excel automated graphs can ring managerial alarms for poor performance or identify successful activities.

Dashboard indicators should reflect the priorities set by the service provider's management team. The dashboard indicators chosen for KCBHCP were based on discussions with the management team at KCBHCP. In these discussions at KCBHCP, we asked the staff what indicators they were mentally tracking, which indicators they felt were important or indicative of program success, and which indicators they automatically looked for in reports. We cross-checked the answers among the different staff members by looking for repeated answers by KCBHCP staff, reviewed commonly used indicators from external sources and expert interviews, and screened each of these indicators for logical sense within the organization. Finally, we picked out the indicators that were stated most frequently.

Figure 19. KCBHCP HIV/AIDS Program Monitoring Dashboard – Sample



Source: GHD Lab, created on site, March 2011

Based on interviews with PACT at Harvard School of Public Health and with the Manager of Health Surveillance and Evaluation at Partners in Health, I learned that PACT has also adopted a dashboard-like process of program monitoring. Some key indicators that PACT tracks per patient and on a monthly basis include number of hospitalizations, frequency of facility and ER visits, and CD4 count (Gomez, 2011). PIH uses percentages to obtain meaningful statistics from the data collected at their facilities. For instance, one of the dashboard indicators tracked by PIH include the percentage of patients who test positive and enroll in the same period (Peckarsky, 2011).

The adoption of a dashboard cannot replace full program reviews based on collected data. The dashboard is simply a starting point to visualize program progress. In comparison to the minimal internal data monitoring currently in place, this type of tool can prove useful for a health care delivery organization to reflect on its own performance in a way that is managerially beneficial. Though the focus here has been on data monitoring, the importance of evaluation cannot be overlooked. As an organization matures, it becomes increasingly important to monitor its impact on beneficiary mortality, morbidity, and quality of life. The purpose of this is to

evaluate effectiveness and efficiency of the organization's activities. The data gathered through evaluation can be used to legitimize the organization's presence in the community, confirm the necessity of continued funding, and affirm stakeholders' support.

Chapter 5 : Conclusion

Thus far, I have defined monitoring and evaluation in HIV/AIDS care delivery, providing example of M&E applications. In Chapter 2, I presented global level stakeholders who participate in shaping M&E practices in HIV/AIDS care delivery. As discussed in that section, multiple organizations offer guidelines, tools, and requirements for HIV/AIDS M&E. While the performance measures presented in these documents often overlap, the processes of data reporting are not the same across donors. Chapter 3 discussed HIV/AIDS M&E systems at the enterprise level. The purpose of that section was to describe how M&E design fits in with organizational strategy. In Chapter 4, I presented Kyetume Community Based Health Care Programme as a case study on data collection and monitoring challenges at the service provider level. KCBHCP's experience raises the question of the cost of fulfilling donor requirements to a resource-constrained health care delivery organization. Reflecting on themes from the previous chapters, this section discusses the interaction between global and enterprise level stakeholders and the implications to monitoring HIV/AIDS care delivery.

5.1 Cost of Multiplicity and the Need for Better Coordination

Today's complex global health problems require responses from the level of global health governance to the local service provider. Multilateral agencies, governments, and NGOs have stepped up to the plate, making such contributions as increasing funding, drug availability, and access to health services. Yet, without effective communication and collaboration, the abundance of new resources and efforts end up costing unnecessarily exorbitant amounts of money, time, and human resources. A study by McKinsey and the Gates Foundation identified five benefits of global health partnerships (Cahill, Fleming, Conway, & Gupta, 2005): pooling resources to enable higher-risk activities that individuals would take alone, sharing of knowledge and resources, producing economies of scale, avoiding duplication of investments and activities, and increasing legitimacy and support for funding and momentum. The movement towards more coordination among the multitude of global health actors has seen the rise of more than 70 global health partnerships between 1995 and 2005 (Cahill, Fleming, Conway, & Gupta, 2005). Without coordination, individual organizations develop separate preferred structures and practices. This environment of independent players is similar to a room full of people who are talking, where valuable messages are drowned out and a coordinated strategy becomes difficult to achieve.

Monitoring and evaluation protocols for HIV/AIDS programs are affected by the disorganization of the global health system. A lack of a leading voice to direct and establish structure among the plethora of guidelines and practices leads to difficulty deciphering the players and publications that are current and relevant. Furthermore, as each government agency, donor, and stakeholder demands its own data reports, the burden to collect and report on data becomes increasingly heavy for the local health care delivery organization. Monitoring and evaluation processes, though important, are resource consuming, which means that unnecessary duplication of reporting efforts becomes very costly for the organization.

Improvement in M&E collaboration in the form of shared knowledge and reporting protocol among the different stakeholders could significantly reduce the burden on the local service provider. Perhaps reporting formats can be standardized at the international and national levels, where large donor organizations can come together to create a common structure to obtain regular data reports, especially if their performance indicators are similar. An interesting point to note is that with all the efforts in place to screen and improve new indicators, in my research, I have not come across a mechanism to remove indicators. Similar to how an increasing number of partnerships, programs, and guidelines are created to address health care issues, the improvement and development of the system is missing a feedback mechanism to remove ineffective, outdated, and excess entities.

There are few international players with the political and financial clout to influence global agendas, though WHO, the World Economic Forum, and the UN Security Council have all taken leadership roles for addressing HIV/AIDS in the past. Private foundations and stakeholders such as the Bill and Melinda Gates Foundation and GFATM also have significant financial and political influence. Furthermore, more than 50 public-private partnerships, such as GAVI, have been established to battle infectious diseases (Ruger & Yach, 2009). The need for a leader to organize these many global health actors is extremely important to better effectively execute strategies to fight the AIDS epidemic.

To lead the collaboration and cooperation among global health players, I propose that the WHO, which has the coordination mandate written into its constitution, be given the legitimacy among the global health actors to effectively take on this role. I understand, however, that the realization of this suggestion is complicated by the fact that every member state wants to preserve its autonomy and that donor organizations will be hesitant to lose its credit for the

impact made through their individual efforts (Sullivan, 2011). Therefore, the very reason why WHO needs to coordinate (too many other powerful players) is also the reason why WHO won't be able to fulfill that responsibility.

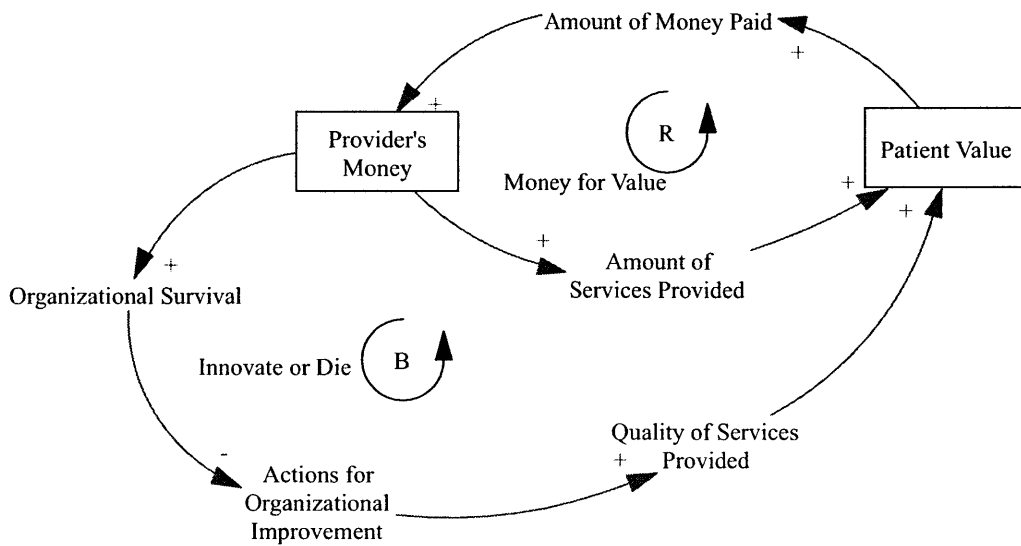
5.2 Structural Weakness

The nature of the donor-enterprise-beneficiary relationship has a fundamentally skewed incentive structure. Organizations that are 100% dependent on external funding are not free to grow, fail, and learn in a process that is typical of most startup organizations in other fields. When revenue is directly related to the services provided (beneficiary pays), the service delivery organization can learn to maximize customer satisfaction and minimize cost in a way that is vital to its survival. It is my opinion that entrepreneurships that preserve this character of business have much more potential to survive, expand, and have true impact. Yet, I recognize the difficulty (and, therefore, the shortage) of sustaining such health care organizations. The ability for a financially self-sustaining health care delivery organization that serves the bottom of the pyramid to exist, in a way that is replicable, is still uncertain.

In 2001, the so-called Harvard Consensus Statement stated, "AIDS treatment will always be more expensive than poor countries can afford, meaning that international aid is key to financing the effort." Furthermore, a 2010 *Lancet* article written by Robert Hecht, et al. echoed the same conclusion that "low-income countries with a high burden of disease will remain reliant upon external support for their rapidly expanding costs" (Ooms, et al., 2010). The dependency on external funding does not appear to be diminishing anytime soon, which means that the payer will continue to be disconnected from the patient in low-income settings.

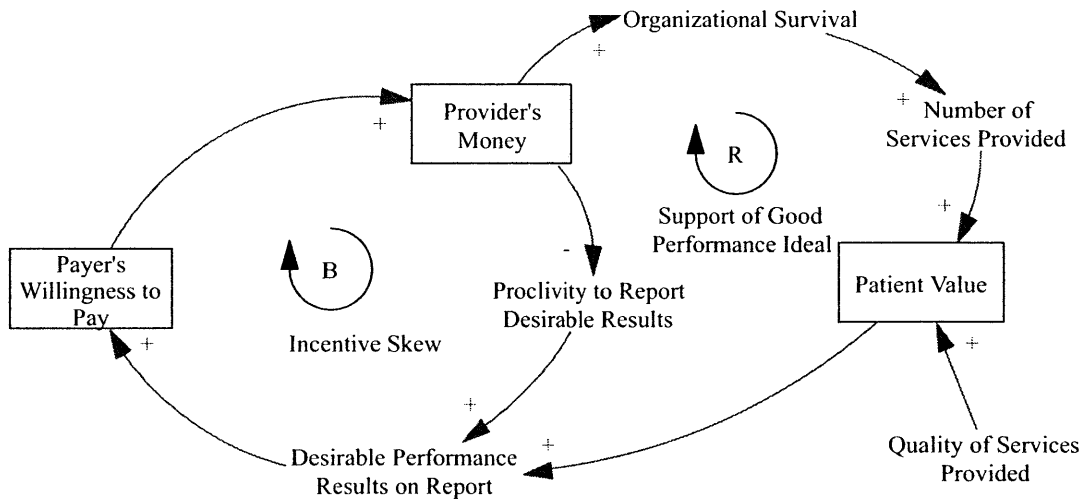
The key, therefore, is to come up with an organizational innovation such that an improved incentive alignment is built back into the equation. Based on my research through readings, interviews, and experience at Kyetume, I believe that the underlying structure of the current payer-provider-patient model hinders innovation. I have attempted to illustrate the problem with separating the patient and the payer by constructing the following two diagrams. The first diagram describes the conventional business enterprise model, where money is given in exchange for services. The second diagram describes the donor dependent funding model, where revenue comes from an external source separate from the patient. The provider submits performance reports to the donors, who determine money allocation based on those reports.

Figure 20. Incentive Structure when Patient is Payer



Based on this diagram, we can see that the organization's survival is based on the amount of money given to the provider, which, in this scenario, is determined by patient value. When the organization feels that its survival is in jeopardy, the service provider is motivated to improve itself such that the patient value is increased, perhaps through improved quality of services.

Figure 21. Incentive Structure when Patient is not Payer



The diagram assumes that patient value translates to desirable performance results on reports to the payer in such a way that the payer's willingness to pay increases. According to this diagram, the service provider can assume that more of the same services will lead to patient value, which leads to better reported performance results that bring in more revenue. In reality, patient value is determined by a combination of the number and the quality of the services provided. The service quality is determined by a number of factors not depicted in the diagram. Perhaps the donor can motivate better services or hinder the provider's ability to innovate with service (and therefore performance) changes. Or, perhaps, the provider has the flexibility and resources to experiment with improving service quality to increase patient value. The key thing to note is that service quality is not exclusively and directly tied to the provider's revenue. Perversion in the system is depicted by the balancing loop, which shows that an organization is motivated to report what is necessary to get increased funding, which may or may not be related to service quality. In the diagram, Proclivity to Report Desirable Results refers to reporting purposes and instead of focusing on program activities. A problem occurs when this balancing loops is faster and more effective for the provider to increase revenue. Then, doing whatever it takes to get that report to appear desirable becomes the motivating factor rather than investing in improving service quality, which is time consuming and may or may not pay off in improving performance reports.

In addition, if the payer specified performance measures don't include an indicator that reflects a certain service quality improvement, then the provider is not incentivized to continue provide that value added service. In other words, payer determined indicators for performance measures dictate the provider's willingness to improve or change its provided services. In this second model, patients have little voice in determining the service that they are provided with.

One assumption that must be made for this model to be successful and that is that the donor's list of performance measures reflect the patient needs. However, it is not clear through this setup how that feedback occurs. A health care innovation to better improve that communication can lead to significant impact, especially since this model of the patient not being the payer will persist in low-income countries with high burden of disease. Dr. Richard Bohmer of Harvard Business School said, "the most important innovation is organizational—the creation of organizational structures and processes that foster learning in routine practice and the creation of more effective models of care delivery" (Bohmer, 2009). Agreeing with his point, I

believe that health care innovation must occur with a systemic lens, understanding that learning and feedback is extremely important, highlighting the role of M&E within health care organization.

5.3 Role of Management Expertise at the Local Level

At the level of the local health care delivery organization, the importance of internal management becomes ever more important in the midst of the push and pull from external stakeholders. The challenge of achieving a balance between top down and bottom up priorities continues to be a struggle for many health care delivery organizations. Analysis of my research and experience at Kyetume has led me to the following conclusions. In order to stabilize operational and managerial practices, service providers must strengthen their internal focus by aligning their strategic plan with M&E practices. The purpose of this is to ensure that improvements and changes are internally driven.

For instance, the service provider must have a clear and articulated concept of organizational identity, which includes the scope of care along the care delivery value chain. Management must consider the cost of expanding to increase the number of services versus cutting down and focusing on specialization. By identifying the core competencies of the enterprise, management can analyze whether or not programs are scalable, repeatable, or transferrable if this is the type of impact the organization hopes to achieve in the future. An internal driven monitoring and evaluation can then be designed to reflect strategic goals, measuring progress in a way that allows for continual learning, adaptation, and improvement.

As exemplified at KCBHCP, the application of management practices at the enterprise level has potential to improve health care delivery. This paper presents data indicators and processes that currently in place, which can serve as a platform for future analysis of data organization and management for the purpose of monitoring and evaluation. I am optimistic that the use business management tools to further study global health practices will lead to significant benefits in reducing health care inefficiencies and bring about system-wide improvements.

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Appendix A – PEPFAR Next Generation Indicators

Source: PEPFAR Next Generation Indicators Reference Guide (PEPFAR, Aug 2009)

	ESSENTIAL/REPORTED INDICATORS	Type	Sub-type	Reporting
1	Number of pregnant women with known HIV status (includes women who were tested for HIV and received their results)	Prevention	PMTCT	PEPFAR Output
2	Number of HIV-positive pregnant women who received antiretrovirals to reduce risk of mother-to-child-transmission	Prevention	PMTCT	PEPFAR Output
3	Percent of pregnant women who were tested for HIV and know their results.	Prevention	PMTCT	National Outcome
4	Percentage of HIV-positive pregnant women who received antiretrovirals to reduce the risk of mother-to-child transmission	Prevention	PMTCT	National Outcome
5	Number of known positive pregnant women	Prevention	PMTCT	PEPFAR Output
6	Number of health facilities providing ANC services that provide both HIV testing and ARVs for PMTCT on site	Prevention	PMTCT	PEPFAR Output
7	Number of HIV-positive pregnant women assessed for ART eligibility through either clinical staging (using WHO clinical staging criteria) or CD4 testing	Prevention	PMTCT	PEPFAR Output
8	Number of HIV-positive pregnant women newly enrolled into HIV care and support services	Prevention	PMTCT	PEPFAR Output
9	Percentage of Infants by feeding type	Prevention	PMTCT	PEPFAR Output
10	Percent of infants born to HIV-infected mothers who are infected	Prevention	PMTCT	National Impact
11	Percentage of donated blood units screened for HIV in a quality assured manner	Prevention	Blood Safety	National Outcome
12	Number of units of whole blood collected by the NBTS network and screened for transfusion-transmissible infections per 1,000 population per year	Prevention	Blood Safety	National Outcome
13	Proportion of health facilities receiving at least 80% of the blood units used for transfusions from the National Blood Transfusion Service network.	Prevention	Blood Safety	National Outcome
14	Percent of blood units collected and screened	Prevention	Blood Safety	Outcome

PEPFAR List of Indicators (continued)

15	Percentage of health facilities with no stock outs of new sterile syringes (standard or safety) in the prior 6 months	Prevention	Injection Safety and Waste Disposal	National Outcome
16	Percentage of health facilities with no stock outs of safety boxes in the prior 6 months	Prevention	Injection Safety and Waste Disposal	National Outcome
17	Percentage of health facilities with final disposal method for health care waste.	Prevention	Injection Safety and Waste Disposal	National Outcome
18	Average number of medical injections per person per year	Prevention	Injection Safety and Waste Disposal	National Outcome
19	Proportion of women and men age 15-49 reporting that the last health care injection was given with a syringe and needle set from a new, unopened package	Prevention	Injection Safety and Waste Disposal	National Outcome
20	Percent of injecting drug users (IDUs) on opioid substitution therapy	Prevention	Injection and Non-injection drug use	National Outcome
21	Number of injecting drug users (IDUs) on opioid substitution therapy	Prevention	Injection and Non-injection drug use	PEPFAR Output
22	Number of males circumcised as part of the minimum package of MC for HIV prevention services	Prevention	Male Circumcision	PEPFAR Output
23	Number of clients circumcised who experienced one or more moderate or severe adverse event(s) within the reporting period	Prevention	Male Circumcision	PEPFAR Output
24	Number of locations providing MC surgery as part of the minimum package of MC for HIV prevention services within the reporting period	Prevention	Male Circumcision	PEPFAR Output
25	Number of males circumcised within the reporting period who return at least once for postoperative follow-up care (routine or emergent) within 14 days of surgery	Prevention	Male Circumcision	PEPFAR Output
26	Number of male circumcisions performed according to national or international standards, within the reporting period	Prevention	Male Circumcision	National Output
27	Proportion of males circumcised in the intended population	Prevention	Male Circumcision	National Outcome
28	Number of persons provided with post-exposure prophylaxis (PEP)	Prevention	Post-Exposure Prophylaxis	PEPFAR Output
29	Percentage of health facilities with HIV post-exposure prophylaxis (PEP) available	Prevention	Post-Exposure Prophylaxis	National Outcome

PEPFAR List of Indicators (continued)

30	Number of People Living with HIV/AIDS (PLHIV) reached with a minimum package of Prevention with PLHIV (PwP) interventions	Prevention	Prevention with People Living with HIV (PwP)	PEPFAR Output
31	Number of the targeted population reached with individual and/or small group level preventive interventions that are based on evidence and/or meet the minimum standards required	Prevention	Sexual and other Risk Prevention	PEPFAR Output
32	Number of the targeted population reached with individual and/or small group level preventive interventions that are primarily focused on abstinence and/or being faithful, and are based on evidence and/or meet the minimum standards required	Prevention	Sexual and other Risk Prevention	PEPFAR Output
33	Number of MARP reached with individual and/or small group level interventions that are based on evidence and/or meet the minimum standards required	Prevention	Sexual and other Risk Prevention	PEPFAR Output
34	Number of targeted condom service outlets	Prevention	Sexual and other Risk Prevention	PEPFAR Output
35	Number of individuals from target audience who participated in community-wide event	Prevention	Sexual and other Risk Prevention	PEPFAR Output
36	Exposure: % of target population reached: # of people estimated to have been reached, by channel (radio or TV) divided by the estimated size of the target population	Prevention	Sexual and other Risk Prevention	PEPFAR Output
37	Exposure: % of population who recall hearing or seeing a specific message	Prevention	Sexual and other Risk Prevention	PEPFAR Output
38	Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	Prevention	Sexual and other Risk Prevention	National Outcome
39	Percent of never-married young people aged 15–24 who have never had sex	Prevention	Sexual and other Risk Prevention	National Outcome
40	Percentage of young women and men aged 15-24 who have had sexual intercourse before the age of 15.	Prevention	Sexual and other Risk Prevention	National Outcome
41	Percentage of women and men aged 15–49 who have had sexual intercourse with more than one partner in the last 12 months	Prevention	Sexual and other Risk Prevention	National Outcome

PEPFAR List of Indicators (continued)

42	Percent of women and men aged 15–49 who have had more than one sexual partner in the last 12 months reporting the use of a condom their last sexual intercourse.	Prevention	Sexual and other Risk Prevention	National Outcome
43	The percentage of women and men aged 15-49 with more than one ongoing sexual partnership at the point in time six months before the interview	Prevention	Sexual and other Risk Prevention	National Outcome
44	Percent of men and women aged 15-49, who have two or more concurrent partners within the past twelve months	Prevention	Sexual and other Risk Prevention	National Outcome
45	Cross-generational sex: Percentage of women respondents aged 15-19 who have had nonmarital sex with a man 10 years or more older than themselves in the last 12 months, of all those who have had non-marital sex in the last 12 months	Prevention	Sexual and other Risk Prevention	National Outcome
46	Sexually active in past year: Percentage of young never married people (aged 15-24) who have had sex in the last 12 months	Prevention	Sexual and other Risk Prevention	National Outcome
47	Percentage of youth who have ever had sexual intercourse	Prevention	Sexual and other Risk Prevention	National Outcome
48	Percentage of young people (aged 15-24) who used a condom the first time they ever had sex, of those who have ever had sex, disaggregated by age group (15-19, 20-24) and gender	Prevention	Sexual and other Risk Prevention	National Outcome
49	Percentage of young women and men aged 15-24 who report they could get condoms on their own	Prevention	Sexual and other Risk Prevention	National Outcome
50	Condom use at last premarital sex, last sex: Percentage of young never married people (aged 15-24) who used a condom at last sex, of all young single sexually active people surveyed	Prevention	Sexual and other Risk Prevention	National Outcome
51	Percentage of adults who are in favour of young people being educated about the use of condoms in order to prevent HIV/AIDS	Prevention	Sexual and other Risk Prevention	National Outcome
52	STIGMA: Percentage of the general population with accepting attitudes toward PLHA (UNAIDS)	Prevention	Sexual and other Risk Prevention	National Outcome
53	Percentage of young women and men aged 15–24 who are HIV infected	Prevention	Sexual and other Risk Prevention	National Impact

PEPFAR List of Indicators (continued)

54	Percentage of most-at-risk populations who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	Prevention	Concentrated Epidemics	National Outcome
55	Percentage of female and male sex workers reporting the use of a condom with their most recent client	Prevention	Concentrated Epidemics	National Outcome
56	Percent of men aged 15-49 reporting sex with a sex worker in the last 12 months who used a condom during last paid intercourse	Prevention	Concentrated Epidemics	National Outcome
57	Percentage of men reporting the use of a condom the last time they had anal sex with a male partner	Prevention	Concentrated Epidemics	National Outcome
58	Percentage of injecting drug users reporting the use of a condom the last time they had sexual intercourse	Prevention	Concentrated Epidemics	National Outcome
59	Percentage of injecting drug users reporting the use of sterile injecting equipment the last time they injected	Prevention	Concentrated Epidemics	National Outcome
60	Percent of male respondents aged 15-49 reporting sex with a sex worker	Prevention	Concentrated Epidemics	National Outcome
61	Percentage of female and male sex workers reporting the use of a condom with every client in the last month	Prevention	Concentrated Epidemics	National Outcome
62	Percentage of men who have had anal sex with more than one male partner in the last 6 months of all men surveyed who have sex with a male partner	Prevention	Concentrated Epidemics	National Outcome
63	Percentage of most-at-risk populations (IDU, MSM, SW) who received an HIV test in the last 12 months and who know the results	Prevention	Concentrated Epidemics	National Outcome
64	Percentage of IDU active in the last month who report sharing injecting equipment the last time they injected drugs	Prevention	Concentrated Epidemics	National Outcome
65	Percentage IDU who sought treatment for STI, of those reporting symptoms	Prevention	Concentrated Epidemics	National Outcome
66	Percentage of IDUs surveyed who used a condom the last time they had sex with a regular partner	Prevention	Concentrated Epidemics	National Outcome
67	Percentage of IDUs surveyed who used a condom the last time they had sex with a nonregular partner	Prevention	Concentrated Epidemics	National Outcome
68	Percentage of military personnel reporting more than one sexual partner in the past 12 months	Prevention	Concentrated Epidemics	National Outcome

PEPFAR List of Indicators (continued)

69	Percentage of military personnel who received HIV test in the past 12 months and know their results	Prevention	Concentrated Epidemics	National Outcome
70	Percentage of most-at-risk populations (IDU, MSM, SW) who are HIV-infected	Prevention	Concentrated Epidemics	National Outcome
71	Number of enterprises implementing an HIV/AIDS workplace program, providing at least one of the 4 critical components	Prevention	Work Place Programs	PEPFAR Output
72	Estimated number of people reached through work place programs	Prevention	Work Place Programs	PEPFAR Output
73	Percent of large enterprises/companies that have HIV/AIDS workplace policies and programs	Prevention	Work Place Programs	National Outcome
74	Number of individuals who received Testing and Counseling (T&C) services for HIV and received their test results	Prevention	Testing and Counseling	PEPFAR Output
75	Percentage of women and men aged 15-49 who received an HIV test in the last 12 months and who know their results	Prevention	Testing and Counseling	National Outcome
76	Percentage of health facilities that provide HIV testing and counselling services	Prevention	Testing and Counseling	National Outcome
77	Percent of districts that provide HIV Testing and Counseling services	Prevention	Testing and Counseling	National Outcome
78	Percentage of HIV Testing and Counseling sites with Quality Assurance (QA) systems for HIV counseling service delivery (non-test elements).	Prevention	Testing and Counseling	National Outcome
79	Percentage of the patient population aged 15 and older who received HIV T&C and received their results through provider-initiated services in the past 12 months	Prevention	Testing and Counseling	National Outcome
80	Population of people with a sexually transmitted infection (STI) aged 15 and older who received HIV T&C and received their results through provider-initiated services in the past 12 months	Prevention	Testing and Counseling	National Outcome
81	Percentage of HIV positive individuals who know their status	Prevention	Testing and Counseling	National Outcome
82	Male Norms and Behaviors: Number of people reached by an individual, small-group, or community-level intervention or service that explicitly addresses norms about masculinity related to HIV/AIDS	Prevention	Gender	PEPFAR Output

PEPFAR List of Indicators (continued)

83	Gender Based Violence and Coercion: Number of people reached by an individual, small group or community-level intervention or service that explicitly addresses gender-based violence and coercion related to HIV/AIDS	Prevention	Gender	PEPFAR Output
84	Women's Legal Rights and Protection: Number of people reached by an individual, smallgroup, or community-level intervention or service that explicitly addresses the legal rights and protection of women and girls impacted by HIV/AIDS	Prevention	Gender	PEPFAR Output
85	Number of people reached by an individual, small group, or community-level intervention or service that explicitly aims to increase access to income and productive resources of women and girls impacted by HIV/AIDS	Prevention	Gender	PEPFAR Output
86	Number of eligible adults and children provided with a minimum of one care service	Care	Umbrella Care Indicators	PEPFAR Output
87	Number of eligible adults and children provided with a minimum of one care service	Care	Umbrella Care Indicators	National Output
88	Number of HIV-positive adults and children receiving a minimum of one clinical service	Care	Clinical Care	PEPFAR Output
89	Number of HIV-positive persons receiving cotrimoxazole prophylaxis	Care	Clinical Care	PEPFAR Output
90	Number of HIV-positive clinically malnourished clients who received therapeutic or supplementary food	Care	Clinical Care	PEPFAR Output
91	TB/HIV: Percent of HIV-positive patients who were screened for TB in HIV care or treatment settings	Care	Clinical Care	PEPFAR Output
92	TB/HIV:Percent of HIV-positive patients in HIV care or treatment (pre-ART or ART) who started TB treatment	Care	Clinical Care	PEPFAR Output
93	TB/HIV: Number of eligible HIV positive patients starting Isoniazid Preventive Therapy (IPT)	Care	Clinical Care	PEPFAR Output
94	Percent of ART sites that have pain management programs	Care	Clinical Care	National Outcome
95	Percent of health care facilities that have the capacity and conditions to provide advanced level HIV/AIDS care and support services, including provision of ART	Care	Clinical Care	National Outcome

PEPFAR List of Indicators (continued)

96	Percent of health care facilities that have the capacity and conditions to provide basic-level HIV testing and HIV/AIDS clinical management	Care	Clinical Care	National Outcome
97	Percent of HIV-positive patients who are given cotrimoxazole preventive therapy	Care	Clinical Care	National Outcome
98	Quality of life for People Living with HIV/AIDS (PLHIV)	Care	Clinical Care	National Impact
99	Number of TB patients who had an HIV test result recorded in the TB register	Care	Clinical/Preventive Services - Additional TB/HIV	PEPFAR Output
100	Percent of TB patients who had an HIV test result recorded in the TB register	Care	Clinical/Preventive Services - Additional TB/HIV	National Outcome
101	Percent of estimated HIV-positive incident TB cases that received treatment for TB and HIV	Care	Clinical/Preventive Services - Additional TB/HIV	National Outcome
102	Percent of HIV-positive patients who were screened for TB in HIV care or treatment settings	Care	Clinical/Preventive Services - Additional TB/HIV	National Outcome
103	Percent of infants born to HIV-positive women who received an HIV test within 12 months of birth	Care	Clinical/Preventive Services - Additional Pediatric	PEPFAR Output
104	Percent of infants born to HIV-positive pregnant women who are started on CTX prophylaxis within two months of birth	Care	Clinical/Preventive Services - Additional Pediatric	PEPFAR Outcome, National Outcome
105	Percent of health facilities that provide virological testing services for infant diagnosis for HIV exposed infants, on site or through Dried Blood Spots (DBS).	Care	Clinical/Preventive Services - Additional Pediatric	National Outcome
106	Number of eligible clients who received food and/or other nutrition services	Care	Support Care	PEPFAR Output
107	Number of eligible children provided with shelter and care-giving	Care	Support Care	PEPFAR Output
108	Number of eligible children provided with health care referral	Care	Support Care	PEPFAR Output
109	Number of eligible children provided with Education and/or vocational training	Care	Support Care	PEPFAR Output
110	Number of eligible adults and children provided with Protection and Legal Aid services	Care	Support Care	PEPFAR Output

PEPFAR List of Indicators (continued)

111	Number of eligible adults and children provided with psychological, social, or spiritual support	Care	Support Care	PEPFAR Output
112	Number of eligible adults and children provided with Economic Strengthening services	Care	Support Care	PEPFAR Output
113	Percentage of orphaned and vulnerable children aged 0–17 whose households received free basic external support in caring for the child	Care	Support Care	National Outcome
114	Quality of life for OVC	Care	Support Care	National Impact
115	Number of adults and children with advanced HIV infection newly enrolled on ART	Treatment	ARV Services	PEPFAR Output
116	Number of adults and children with advanced HIV infection receiving antiretroviral therapy (ART) [CURRENT]	Treatment	ARV Services	PEPFAR Output
117	Percent of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy	Treatment	ARV Services	PEPFAR Outcome
118	Number of adults and children with advanced HIV-infection who ever started on ART	Treatment	ARV Services	PEPFAR Outcome
119	Number of health facilities that offer ART	Treatment	ARV Services	PEPFAR Outcome
120	Percent of adults and children with advanced HIV infection receiving antiretroviral therapy	Treatment	ARV Services	National Outcome
121	Percentage of health facilities that offer ART	Treatment	ARV Services	National Outcome
122	Percentage of health facilities providing ART using CD4 monitoring in line with national guidelines/policies on site or through referral	Treatment	ARV Services	National Outcome
123	Number of testing facilities (laboratories) with capacity to perform clinical laboratory tests	Health System Strengthening	Laboratory	PEPFAR Output
124	Percent of testing facilities (laboratories) that are accredited according to national or international standards	Health System Strengthening	Laboratory	PEPFAR Outcome
125	Percent of laboratories with satisfactory performance in external quality assurance/proficiency testing (EQA/PT) program for CD4 (patient monitoring).	Health System Strengthening	Laboratory	National Outcome
126	Percent of HIV rapid test facilities with satisfactory performance in external quality assurance/proficiency testing (EQA/PT) program for HIV rapid test (HIV diagnostics).	Health System Strengthening	Laboratory	National Outcome

PEPFAR List of Indicators (continued)

127	Percent of laboratories with satisfactory performance in external quality assurance/proficiency testing (EQA/PT) program for AFB smear microscopy (TB Diagnostics).	Health System Strengthening	Laboratory	National Outcome
128	Percent of designated laboratories with the capacity to monitor antiretroviral combination therapy according to national and international guidelines	Health System Strengthening	Laboratory	National Outcome
129	Number of new health care workers who graduated from a pre-service training institution	Health System Strengthening	Human Resources for Health	PEPFAR Output
130	Number of community health and para-social workers who successfully completed a pre-service training program	Health System Strengthening	Human Resources for Health	PEPFAR Output
131	Number of health care workers who successfully completed an in-service training program	Health System Strengthening	Human Resources for Health	PEPFAR Output
132	Number of new health care workers who graduated from a pre-service training institution	Health System Strengthening	Human Resources for Health	National Output
133	Ratio of health workers to 10,000 population	Health System Strengthening	Human Resources for Health	National Output
134	Domestic and international AIDS Spending by categories of financial sources (NASA or NHA)	Health System Strengthening	Health Systems Financing	National Outcome
135	Total health expenditures per capita	Health System Strengthening	Health Systems Financing	National Outcome
136	Proportion of all deaths attributable to HIV	Health System Strengthening	Service Delivery	National Impact
137	Ratio between the median price paid by the country for each ARV in the last 12 months to the median international price	Health System Strengthening	Medical Products, etc	National Output
138	Proportion of generic to branded drugs procured	Health System Strengthening	Medical Products, etc	National Outcome
139	Percentage of health facilities providing ART that experienced stock-outs of ARV in the last 12 months	Health System Strengthening	Medical Products, etc	National Outcome
140	Monitoring policy reform and development of PEPFAR supported activities (Required for Partnership Framework Countries)	Health System Strengthening	Health Systems Governance	PEPFAR Outcome

PEPFAR List of Indicators (continued)

141	National Composite Policy Index (NCPI)	Health System Strengthening	Health Systems Governance	National Outcome
142	Existence of national costed HIV implementation plan	Health System Strengthening	Health Systems Governance	National Outcome
143	Existence of effective civil society organizations	Health System Strengthening	Health Systems Governance	National Outcome
144	National Human Resource Information System in place with key elements	Health System Strengthening	Health Information Systems	National Outcome
145	Existence of one agreed upon M&E plan for overall national monitoring and evaluation	Health System Strengthening	Health Information Systems	National Outcome
146	Percent of health facilities with record-keeping systems for monitoring HIV/AIDS care and support	Health System Strengthening	Health Information Systems	National Outcome
147	Percent of ARV distribution nodes that report on inventory consumption, quality, losses, and adjustments on a monthly basis	Health System Strengthening	Health Information Systems	National Outcome
148	Existence of a national and sub-national databases that enable stakeholders to access relevant data for policy formulation and program management and improvement	Health System Strengthening	Health Information Systems	National Outcome
149	Existence of a designated and functioning institutional mechanism charged with analysis of health statistics, synthesis of data from different sources and validation of data from population and facility sources	Health System Strengthening	Health Information Systems	National Outcome
150	Availability of HIV prevalence data for relevant surveillance populations published within 12 months of preceding year	Health System Strengthening	Health Information Systems	National Outcome
151	Existence of a nationally coordinated multi-year disease Monitoring and Evaluation plan with a schedule for survey implementation and data analysis prepared and implemented	Health System Strengthening	Health Information Systems	National Outcome
152	Availability of maternal mortality data	Health System Strengthening	Health Information Systems	National Outcome
153	Availability of child mortality data	Health System Strengthening	Health Information Systems	National Outcome

Appendix B – PEPFAR Uganda Program Results

Source: www.pepfar.gov (The US President's Emergency Plan For AIDS Relief, 2011)

Uganda Program Results				
Indicators	FY2005	FY2006	FY2007	FY2008
Pregnant women receiving HIV testing and counseling services*	250,000	300,000	565,100	830,000
Number of HIV+ pregnant women receiving ARV prophylaxis*	11,300	14,700	29,800	41,600
Number of individuals reached with community outreach HIV/AIDS prevention activities that promote abstinence and/or being faithful	3,639,200	5,654,800	7,165,400	4,519,800
Number of individuals reached with community outreach HIV/AIDS prevention activities that promote correct and consistent use of condoms and related interventions	3,606,400	1,651,300	1,001,100	1,737,000
Total number of individuals reached (on ART)*	67,500	89,200	106,000	145,000
Progress Toward Emergency Plan Target of 10 Million Individuals Receiving Care*	371,200	511,800	722,300	1,146,100
Orphans and Vulnerable Children Results*	93,600	221,900	307,800	754,000
Testing & Counseling Services Results (in settings other than PMTCT)*	1,099,300	1,000,000	1,490,900	2,043,400
Number of individuals who received care & support (including TB/HIV)*	258,900	289,900	414,500	392,100
Number of individuals who received care & support services that are receiving treatment for TB disease (subset of all care & support)*	18,800	21,200	16,400	14,400

Appendix C – The Global Fund Top Ten Indicators

Source: Top Ten Indicators Card, Monitoring and Evaluation Guidelines and Tools (The Global Fund to Fight AIDS, Tuberculosis, and Malaria, 2010)

A. Top Ten Indicators for Routine Global Fund Reporting

	Disease	Indicators for routine Global Fund reporting
1	HIV	Number of adults and children with advanced HIV infection currently receiving antiretroviral therapy
2	TB	Number of (a) new smear-positive TB patients detected, (b) new smear-positive TB patients who were successfully treated and (c) laboratory-confirmed MDR-TB patients enrolled in second-line anti-TB treatment
3	Malaria	Number of (a) insecticide-treated nets or re-treatment kits distributed to people and (b) households (or structures or walls) in designated target areas sprayed by indoor residual spraying in the past 12 months
4	Malaria	Number of people with fever receiving antimalarial treatment according to national policy (specify artemisinin-based combination therapy versus other therapy)
5	HIV	Number of women and men aged 15-49 years who received an HIV test in the last 12 months and who know their results
6	HIV	Number of HIV-positive pregnant women who received antiretrovirals to reduce the risk of mother-to-child transmission
7	HIV	Number of condoms distributed
8	HIV, TB and malaria	Number of people benefiting from community-based programs: specify (a) care and support including orphan support, home-based management of malaria and directly observed therapy (DOT); (b) behavior change communication outreach activities including specific target groups; and (c) disease prevention for people most at risk (except behavior change communication)
9	HIV/TB	Number of TB patients who had an HIV test result recorded in the TB register
10	Strengthening health systems for HIV, TB and malaria	Number of people trained

B. Top Ten Indicators for Medium-Term Outcome and Impact

	Disease	Indicators recommended for generalized epidemics and high-endemicity areas	Indicators recommended for concentrated epidemics and low-endemicity areas
1	HIV	Percentage of women and men aged 15-24 years who are infected with HIV	Percentage of populations most at risk who are infected with HIV
2	HIV	Percentage of adults and children with HIV known to be receiving treatment 12 months after initiation of antiretroviral therapy (extend to two, three and five years as the program matures)	
3	HIV	Reduced mother-to-child transmission of HIV: percentage of infants born to mothers who are HIV infected	
4	HIV	Percentage of people aged 15-49 years with more than one sexual partner in the past 12 months reporting the use of condoms during their last sexual intercourse	Percentage of populations most at risk with more than one sexual partner in the past 12 months reporting the use of condoms during last sexual intercourse
5	TB	TB case detection rate and treatment success rate	
6	TB	TB prevalence rate: estimated number of TB cases (all forms) per 100 000 population	
7	Malaria	All-cause mortality rate among children younger than five years of age	Malaria-specific mortality: proportion of deaths attributed to malaria among children younger than five years of age (or other target groups)
8	Malaria	Number of (confirmed) malaria cases seen by health workers (in facilities and/or outreach)	a. Annual parasite index b. Slide-positive or rapid diagnostic test-positive rate
9	Malaria	People sleeping under an insecticide-treated net the previous night (specify the target population: all household residents, children younger than five years of age, pregnant women)	
10	Health systems strengthening	All-cause mortality rate among children younger than five years of age	

Appendix D – MAP Scorecard

Source: The Africa Multi-Country AIDS Program 2000-2006: Results of the World Bank's Response to a Development Crisis (World Bank, 2007)

Indicator	Unit	Indicator origin	Data source
A. Demographics			
1. Total population (millions)	Number	World Bank	WDI database
B. Challenge			
2. Estimated number of adults and children living with HIV	Number	UNAIDS	UNAIDS Global Report
3a. Men and women aged 15–24 who are living with HIV <small>(may need to be estimated from antenatal data)</small>	Percentage	UNGASS, IDA 14	UNAIDS Global Report, WHO estimates
3b. Sex workers in the capital city who are living with HIV	Percentage	UNGASS alternate indicator	UNAIDS Global Report, WHO estimates
C. Final outcomes			
4a. <i>Condom use:</i> Men and women aged 15–49 reporting the use of a condom during last sexual intercourse (of those reporting sexual intercourse in the last 12 months)	Percentage	UNGASS	ISR <small>(from country UNGASS report)</small>
4b. <i>Condom use:</i> Sex workers who report using a condom with their most recent client (of those surveyed who report having sex with any clients in the last 12 months)	Percentage	UNGASS	ISR <small>(from country UNGASS report)</small>
5. Women and men aged 15–24 who have had sex with more than one partner in the last 12 months	Percentage	UNGASS	ISR <small>(from country UNGASS report)</small>

MAP Scorecard (continued)

Indicator	Unit	Indicator origin	Data source
D. Intermediate outcomes			
6. Men and women with advanced HIV infection receiving antiretroviral combination therapy	Number	UNGASS	ISR (from country UNGASS report)
	Percentage		ISR (from country UNGASS report)
7. Pregnant women living with HIV who receive a complete course of anti-retroviral prophylaxis to reduce the risk of mother-to-child transmission (MTCT)	Number	UNGASS	ISR (from country UNGASS report)
	Percentage		ISR (from country UNGASS report)
8. Orphans and vulnerable children whose households have received care/support in the past 12 months	Number	UNGASS	ISR (from country UNGASS report)
	Percentage		ISR (from country UNGASS report)
9. Persons age 15 and older who received counseling and testing for HIV and received their test results	Number	World Bank	ISR (from country M&E system)
	Percentage		ISR (from country M&E system)
10. Male and female condoms distributed	Number	World Bank	ISR (from country M&E system)
11. Civil society organizations supported for sub-projects (includes NGO, CBO, FBO)	Number	World Bank	ISR (from country M&E system)
	Amount of funding		ISR (from country M&E system)
12. Public sector organizations supported	Number	World Bank	ISR (from country M&E system)
	Amount of funding		ISR (from country M&E system)
13. National AIDS coordinating authority that reports annually on at least 75 percent of the indicators in its national HIV M&E framework and that disseminates the report to national-	Percentage	World Bank	ISR (from country M&E system)

MAP Scorecard (continued)

Indicator	Unit	Indicator origin	Data source
level leaders in at least three public sector organizations, national civil society leaders, and business leaders in the private sector.			
E. Financial commitments			
14. Estimated investment requirements for HIV/AIDS, US\$	Amount	World Bank	UNAIDS global data
15. Total commitments for HIV/AIDS, US\$	Amount	World Bank	Calculation (15a + 15b + 15c)
15a. Country commitments	Amount	World Bank	ISR (from country UNGASS report)
15b. World Bank financial commitments for HIV (US\$ millions)	Amount	World Bank	World Bank Business Warehouse
15c. Other development partners' commitments	Amount	World Bank	Development partner Web sites
16. Financing gap to reach HIV/AIDS targets, US\$	Amount	World Bank	Calculation (14–15)
F. Disbursements			
17. World Bank financial disbursements for HIV, US\$	Amount	World Bank	World Bank Client Connection

Note: All of the indicators in the scorecard are based on the latest international consensus on indicator wording. As there are currently efforts under way to harmonize indicators, the indicators in the scorecard may be slightly revised in 2008, when the harmonization process will be complete. Scorecard data are not disaggregated into age groups or sex. This will be reviewed in the future as better data sets become available.

Appendix E - UNGASS Core Indicators for the Implementation of the Declaration of Commitment on HIV/AIDS

Source: UNGASS Guidelines on Construction of Core Indicators for 2010 Reporting (UNGASS, March 2009)

Indicators	Data Collection Frequency	Method of Data Collection
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National Commitment and Action

Expenditures

1. Domestic and international AIDS spending by categories and financing sources	Ad hoc based on country request and financing, by calendar or fiscal year	National AIDS Spending Assessment Financial resource flows
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Policy Development and Implementation Status

2. National Composite Policy Index (Areas covered: prevention, treatment, care and support, human rights, civil society involvement, gender, workplace programmes, stigma and discrimination and monitoring and evaluation)	Every 2 years	Desk review and key informant interviews
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National Programmes (blood safety, antiretroviral therapy coverage, prevention of mother-to-child transmission, co-management of TB and HIV treatment, HIV testing, prevention programmes, services for orphans and vulnerable children, and education)

3. Percentage of donated blood units screened for HIV in a quality assured manner	Annual	Programme monitoring/ special survey
4. Percentage of adults and children with advanced HIV infection receiving antiretroviral therapy*	Annual	Programme monitoring and estimates
5. Percentage of HIV-positive pregnant women who receive antiretroviral medicines to reduce the risk of mother-to-child transmission	Annual	Programme monitoring and estimates
6. Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV	Annual	Programme monitoring
7. Percentage of women and men aged 15-49 who received an HIV test in the last 12 months and who know the results	Every 4-5 years	Population-based survey
8. Percentage of most-at-risk populations that have received an HIV test in the last 12 months and who know the results	Every 2 years	Behavioural surveys
9. Percentage of most-at-risk populations reached with HIV prevention programmes	Every 2 years	Behavioural surveys
10. Percentage of orphans and vulnerable children whose households received free basic external support in caring for the child	Every 4-5 years	Population-based survey
11. Percentage of schools that provided life skills-based HIV education within the last academic year	Every 2 years	School-based survey

UNGASS Core Indicators (continued)

Indicators	Data Collection Frequency	Method of Data Collection
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Knowledge and Behaviour

12. Current school attendance among orphans and among non-orphans aged 10–14*	Every 4–5 years	Population-based survey
13. Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission*	Every 4–5 years	Population-based survey
14. Percentage of most-at-risk populations who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	Every 2 years	Behavioural surveys
15. Percentage of young women and men who have had sexual intercourse before the age of 15	Every 4–5 years	Population-based survey
16. Percentage of adults aged 15–49 who have had sexual intercourse with more than one partner in the last 12 months	Every 4–5 years	Population-based survey
17. Percentage of adults aged 15–49 who had more than one sexual partner in the past 12 months who report the use of a condom during their last intercourse*	Every 4–5 years	Population-based survey
18. Percentage of female and male sex workers reporting the use of a condom with their most recent client	Every 2 years	Behavioural surveys
19. Percentage of men reporting the use of a condom the last time they had anal sex with a male partner	Every 2 years	Behavioural surveys
20. Percentage of injecting drug users who reported the use of a condom at last sexual intercourse	Every 2 years	Special survey
21. Percentage of injecting drug users who reported using sterile injecting equipment the last time they injected	Every 2 years	Special survey

Impact

22. Percentage of young women and men aged 15–24 who are HIV infected*	Annual	HIV sentinel surveillance and population-based survey
23. Percentage of most-at-risk populations who are HIV infected	Annual	HIV sentinel surveillance
24. Percentage of adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy	Every 2 years	Programme monitoring
25. Percentage of infants born to HIV-infected mothers who are infected	Annual	Treatment protocols and efficacy studies

Appendix F – WHO Core National M&E indicators

Source: National AIDS Programmes: A Guide to Monitoring and Evaluating HIV/AIDS Care and Support (WHO, March 2004)

Core indicators	Recommended method	Frequency
CS1 Percentage of the general population aged 15–49 years receiving HIV test results and post-test counselling in the past 12 months	Programme reports	Annual
CS2 Percentage of districts with at least one health facility providing antiretroviral combination therapy	Programme reports	Annual
CS3 Percentage of people with advanced HIV infection receiving antiretroviral combination therapy ³	Programme reports and modelling	Every 2 years
CS4 Existence of comprehensive HIV/AIDS care and support policies, strategies and guidelines	Interviews and record review	Every 2 years
CS5 Percentage of facilities that provide comprehensive care referrals for HIV/AIDS care and support services (when these services are not available on site)	Health facility survey	Every 2–4 years
CS6 Percentage of health facilities that have the capacity and conditions to provide basic HIV counselling and testing and to manage HIV/AIDS clinical services (a) A system for testing and providing results for HIV infection (b) Systems and qualified staff for pre- and post-test counselling (c) Specific health services relevant to HIV/AIDS, including resources and supplies for providing these services (d) Elements for preventing nosocomial infections (e) Trained staff and resources providing basic interventions for prevention and treatment for people living with HIV/AIDS	Health facility survey	Every 2–4 years
CS7 Percentage of health facilities that have the capacity and conditions to provide advanced HIV/AIDS clinical and psychosocial support services, including providing and monitoring antiretroviral combination therapy (a) Systems and items to support the management of opportunistic infections and the provision of palliative care (symptomatic treatment) for the advanced care of people living with HIV/AIDS; (b) Systems and items to support advanced services for the care of people living with HIV/AIDS (c) Systems and items to support antiretroviral combination therapy (d) Conditions to provide advanced inpatient care for people living	Health facility survey	Every 2–4 years

WHO Core National M&E Indicators (continued)

	(d) Conditions to provide advanced inpatient care for people living with HIV/AIDS (e) Conditions to support home care services (f) Postexposure prophylaxis		
CS8	Percentage of designated laboratories with the capacity to monitor antiretroviral combination therapy according to national and international guidelines	Health facility survey or special laboratory study	To be determined
CS9	Percentage of adults aged 18–59 years who have been chronically ill for 3 or more months in the past 12 months whose households received, free of user charges, basic external support in caring for chronically ill adults, including health, psychological or emotional and other social and material support	Household survey	Every 2–4 years
CS10	Percentage of orphans and vulnerable children whose households received, free of user charges, basic external support in caring for the child	Household survey	Every 2–4 years

Additional indicators	Method	Frequency
CS-A1 Existence of national monitoring and evaluation capacity for HIV/AIDS care and support programmes	Interview or record reviews	Every 2 years
CS-A2 Percentage of health facilities with record-keeping systems for monitoring HIV/AIDS care and support	Health facility survey	Every 2–4 years

¹ *Monitoring the Declaration of Commitment on HIV/AIDS: guidelines on construction of core indicators*. Geneva, UNAIDS, 2002 (http://www.unaids.org/html/pub/Publications/IRC-pub02/JC894-CoreIndicators_en.pdf.htm, accessed 1 October 2003).

Appendix G – KCBHCP, IRCU Indicators

Source: KCBHCP, MIT GHD Lab Team, accessed on site

A. Filled Daily, Per Patient – Feeds into IRCU 2a Monthly Report

Demographic information			
1. Sex	M / F	2. If female, pregnant?	Y / N
3. Age	()		
4. Marital status	Single / Married / Widowed / Divorced / SeParated / Cohabiting		
5. # of biological children age<15 yrs	()	6. Out of which tested for HIV	()
7. Out of which HIV+	()		
8. Client's school status	S (at school) / O (out of school)		
HCT: In this visit, was the client:			
9. Counselling for HIV?	Y / N	10. Tested for HIV?	Y / N
11. First time tester?	Y / N	12. Given HIV test results?	Y / N
13. Client HIV status (regardless of whether tested here)			P / N
HCT: During this visit, was the client's partner:			
14. Tested and counselled?	Y / N	15. If tested, HIV status?	P / N / NA
Family planning & Palliative care: During this visit, has the client received:			
16. Counselling for family planning?	Y / N	17. Family planning service?	Y / N
18. Already using family planning?	Y / N	19. Nutrition support?	Y / N
20. Culturally-appropriate end-of-life care?			Y / N
21. Insecticide treated nets (ITN)?	Y / N	22. Education on use of safe water?	Y / N
23. Spiritual support?	Y / N	24. Psychological care?	Y / N
25. Clinical monitoring and management of opportunistic infections?			Y / N
26. Reported that s/he is accessing home-based care?			Y / N
27. Been given a home-based care kit?			Y / N
PMTCT: If a female client has a child of age <1, in this visit:			
28. Does the client have a child less than 1 year?			Y / N
29. If yes, has the child been tested for HIV?			Y / N
30. The child's HIV status is			P / N
31. If the child is positive, has s/he received prophylaxis?			Y / N
PMTCT: If a female client is pregnant, in this visit:			
32. Has she been counselled, tested, and received results for PMTCT?			Y / N
33. Has she received a complete course of antiretroviral prophylaxis in a PMTCT setting?			Y / N
Clinical care and ART			
34. Client's weight	()	35. WHO clinical stage	I / II / III / IV
36. Latest CD4 count (cells/mm3)	()	37. On Cotrimoxazole in this visit?	Y / N
38. Receiving pain management in this visit?			Y / N
39. Screened for ART? What date?			/ /
40. Put on ART waiting list in this visit?			Y / N
TB			
41. Assessed for TB in this visit?			Y / N
42. If assessed for TB, result is:		C (case) / S (suspect)	
43. Newly registered for TB treatment in this visit?			Y / N
44. If not, is the client being given TB treatment in this visit?			Y / N
45. Completed/finished TB treatment in this visit?			Y / N
STI			
46. Screened/tested for STIs in this visit?			Y / N
47. If yes, what is the client status?		P (positive) / N (negative)	
48. Received treatment for the STI in this visit?			Y / N
Other HIV-related questions			
49. Counselling and received medical make circumcision in this visit?			Y / N
50. Referred in for the HIV/AIDS services?			Y / N
51. Referred out for the HIV/AIDS services?			Y / N

B. Monthly VCT Form – Feeds into IRCU 2a

No.	Data element
Care/Support - VCT	
1	Counseled 0 – 4 years - male
2	Counseled 0 - 4 years - female
3	Counseled 5 – 14 years - male
4	Counseled 5 - 14 years - female
5	Counseled 15 -24 years – male
6	Counseled 15 -24 years – female
7	Counseled 25 -49 years – male
8	Counseled 25 -49 years – female
9	Counseled 50 years and above – male
10	Counseled 50 years and above – female
11	Number clients testing for the first time – male
12	Number clients testing for the first time – female
13	HIV tested on static site 0 – 4 years - male
14	HIV tested on static site 0 - 4 years - female
15	HIV tested on static site 5 – 14 years - male
16	HIV tested on static site 5 - 14 years - female
17	HIV tested on static site 15 -24 years - male
18	HIV tested on static site 15 -24 years - female
19	HIV tested on static site 25 -49 years - male
20	HIV tested on static site 25 -49 years - female

Monthly VCT Form – Feeds into IRCU 2a (continued)

21	HIV tested on static site 50 and above years - male
22	HIV tested on static site 50 and above years - female
23	HIV tested in outreach 0 – 4 years - male
24	HIV tested in outreach 0 - 4 years - female
25	HIV tested in outreach 5 – 14 years - male
26	HIV tested in outreach 5 - 14 years - female
27	HIV tested in outreach 15 -24 years - male
28	HIV tested in outreach 15 -24 years - female
29	HIV tested in outreach 25 -49 years - male
30	HIV tested in outreach 25 -49 years - female
31	HIV tested in outreach 50 and above years - male
32	HIV tested in outreach 50 and above years - female
33	HIV positive 0-4 years - male
34	HIV positive 0-4 years - female

35	HIV positive 5-14 years - male
36	HIV positive 5-14 years - female
37	HIV positive 15 -24 years - male
38	HIV positive 15 -24 years - female
39	HIV positive 25 -49 years - male
40	HIV positive 25 -49 years - female
41	HIV positive 50 and above years - male
42	HIV positive 50 and above years - female
43	HIV positive referred 0-4 years - male
44	HIV positive referred 0-4 years - female

Monthly VCT Form – Feeds into IRCU 2a (continued)

45	HIV positive referred 5-14 years - male
46	HIV positive referred 5-14 years - female
47	HIV positive referred 15 -24 years - male
48	HIV positive referred 15 -24 years - female
49	HIV positive referred 25 -49 years - male
50	HIV positive referred 25 -49 years - female
51	HIV positive referred 50 and above years - male
52	HIV positive referred 50 and above years - female
Care/Support – Community mobilization	
53	Out reaches conducted
Care/Support – PLWHA	
54	PLWHA on register - male
55	PLWHA on register - female
56	PLWHA provided with home Based Care - male
57	PLWHA provided with home Based Care - female
58	Total number of visits made
59	PLWHA provided with Medical Care Assistance - male
60	PLWHA provided with Medical Care Assistance – female
61	PLWHA provided with Insecticide Treated Nets - male
62	PLWHA provided with Insecticide Treated Nets – female
63	Community counseling Aides (CCA) trained - male
64	Community counseling Aides (CCA) trained - female
Family planning (FP) – Condom distribution	
65	Number of condoms distributed - male
66	Number of condoms distributed - female

Appendix H – KCBHCP Full List of Indicators

Source: KCBHCP, MIT GHD Lab Team, accessed on site

1	No. of HCT outreaches
2	No. of clients home visited
3	No. of clients counseled
4	No. of clients testing for the first time
5	No. of HIV tests carried out
6	No. of HIV tested on static site
7	No. of HIV tested in outreach
8	No. of HIV tests carried out test positive
9	No. of HIV tested during outreach (from lab register) positive
10	No. of HIV tested on static (from lab register) positive
11	No. of clients counseled, tested & received results (including TB/HCT)
12	No. of HIV (+) referred
13	No. of AIDS diagnoses
14	No. of HIV testing kits - Confirmatory
15	No. of HIV testing kits - Screening
16	No. of HIV testing kits - Tie-breaker
17	No. of other non - occupation
18	No. of other outreaches
19	Type of Service Outlet
20	No. of condoms distributed
21	No. of female sterilisation (tibial ligation)
22	No. of implant new users
23	No. of implant removals
24	No. of implant revisits
25	No. of injectable contraceptives dispensed
26	No. of injectable FP users
27	No. of IUDs (Copper T) contraceptives dispensed
28	No. of IUDs (Copper T) FP users
29	No. of male sterilisation (vasectomy)
30	No. of males circumcised
31	No. of males reviewed after two weeks of procedure
32	No. of males reviewed during two weeks of procedure and developed complications
33	No. of natural FP users
34	No. of oral: Lo-Femenal contraceptives dispensed
35	No. of oral: Lo-Femenal FP users
36	No. of oral: Microgynon contraceptives dispensed
37	No. of oral: Microgynon FP users
38	No. of oral: Others contraceptives dispensed
39	No. of oral: Others FP users
40	No. of oral: Ovrette contraceptives dispensed
41	No. of oral: Ovrette FP users
42	No. of other methods FP users

43	No. of others contraceptives dispensed
44	No. of rape/sexual assault victim cases
45	No. of total family planning users
46	No. of clients referred
47	No. of PHA in care eligible for ART

48	No. of clients EVER enrolled
49	No. of clients on ARVs
50	No. of new clients enrolled on ARVs
51	No. of old clients visiting for ART refills
52	No. of ART clients who are severely malnourished
53	No. of severely malnourished ART clients who received food/nutritional supplementation
54	No. of PLWHA on register
55	No. of clients with HIV attended to at OPD
56	No. of PLWHA provided with home Based Care
57	No. of PLWHA provided with Insecticide Treated Nets
58	No. of PLWHA provided with Medical Care Assistance
59	No. of visits made
60	No. of home visited clients
61	No. of Community counseling Aides (CCA) trained
62	No. of new clients on septrine
63	No. of old clients on septrine
64	No. of clients on septrine
65	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who started TB treatment and are lost to follow up
66	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who were tested for TB
67	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who were referred and diagnosed for TB
68	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who started TB treatment
69	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who started TB treatment and are followed up for CB-DOTS
70	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who cured on DOTS (Directly Observed Treatment, Short course)
71	No. of HIV (+) patients in HIV care or treatment (pre-ART or ART) who started TB treatment and died
72	No. of HIV (+) clients tested for STI
73	No. of HIV clients tested positive and treated for STI
74	No. of HIV (+) persons in care and died
75	No. of persons provided with PEP (please indicate their occupation)
76	No. of anemia cases
77	No. of asthma cases
78	No. of candidiasis cases
79	No. of carbaniculosis cases
80	No. of clients referred for sputum analysis
81	No. of TB sputum tests

82	No. of TB sputum tests positive
83	No. of tuberculosis cases
84	No. of TB clients counseled, tested and received for TB
85	No. of Cotrimoxazole tabs administered
86	No. of Depo-Provera administered
87	No. of depression cases
88	No. of diarrhea - acute cases

89	No. of diarrhea - persistent cases
90	No. of dysentery cases
91	No. of ENT Conditions cases
92	No. of EPI (Expanded Program of Immunization) outreaches
93	No. of eye conditions cases
94	No. of Fansidar
95	No. of first line drug for Malaria*
96	No. of fungal infection cases
97	No. of H.C.G tests
98	No. of H.C.G tests positive
99	No. of HIV (-) patients on TB treatment
100	No. of new clients on TB drugs
101	No. of HIV (-) patients in HIV care or treatment (pre-ART or ART) who cured on DOTS (Directly Observed Treatment, Short course)
102	No. of hype zoster cases
103	No. of hypertension cases
104	No. of intestinal worms cases
105	No. of malaria blood smear tests
106	No. of malaria cases
107	No. of measles diagnoses
108	No. of measles vaccine
109	No. of meningitis (meningococcal) diagnoses
110	No. of cryptococcal meningitis cases
111	No. of other types of meningitis diagnoses
112	No. of oral diseases and condition cases
113	No. of ORS sachets
114	No. of pap smear tests
115	No. of pelvic inflammatory disease (PID) diagnoses
116	No. of pneumonia cases
117	No. of prurigo cases
118	No. of Quinine
119	No. of referred clients out
120	No. of skin diseases cases
121	No. of STI cases
122	No. of syphilis testing performed
123	No. of syphilis screening tests positive
124	No. of typhoid cases
125	No. of URN (cough) cases
126	No. of UTI cases

127	No. of Widal test positive
128	No. of Widal tests
129	No. of other drugs, vaccines, contraceptives or supplies that suffered a stock out during the month
130	No. of pregnant women identified in the community and referred for ANC
131	No. of pregnant women pre test counseled
132	No. of pregnant women referred for PMTCT
133	No. of pregnant women referred and received PMTCT
134	No. of old clients on ANC

135	No. of ANC re-attendance 4th visit
136	No. of new ANC clients
137	No. of clients provided with HBC (Home based care)
138	No. of pregnant women referred out
139	No. of pregnant women tested for HIV
140	No. of pregnant women positive for HIV
141	No. of pregnant and positive mothers under monitoring
142	No. of pregnant women with known (positive) HIV infection attending ANC for a new pregnancy
143	No. of pregnant women with known (positive) HIV infection counseled on infant feeding options
144	No. of pregnant women with known (positive) HIV infection offered seprine prophylaxis
145	No. of pregnant women with known (positive) HIV infection offered the BCP (ITN's, Condoms, safe water vessel)
146	No. of HIV (+) mothers counseled for FP
147	No. of HIV (+) mothers counseled and received FP
148	No. of HIV (+) women who received any method of FP post partum period
149	No. of women who received any method of FP post partum
150	No. of HIV (+) mothers screened and tested for STI's
151	No. of HIV (+) mothers whose partners were screened, tested and treated for STI's
152	No. of partners tested for HIV
153	No. of partners tested positive
154	No. of HIV (+) pregnant women provided with ART
155	No. of ART for HIV (+) pregnant women eligible for treatment
156	No. of HIV (+) pregnant women on HAART (triple therapy)
157	No. of HIV (+) pregnant women on Prophylactic regimens using a combination of 2 ARVs
158	No. of HIV (+) pregnant women on Prophylactic regimens using a combination of 3 ARVs
159	No. of HIV (+) pregnant women on Single-dose Nevirapine only
160	No. of HIV (+) women referred and delivered in health care setting
161	No. of live births to HIV (+) mothers
162	No. of deliveries HIV (+) who swallowed ARVs
163	No. of deliveries

164	No. of HIV (+) mothers initiating exclusive breast feeding within 1 hour after delivery
165	No. of HIV (+) exclusively breast feeding mothers
166	No. of HIV (+) lactating mothers followed up in community for infant feeding, early infant diagnosis services, or linkage into chronic HIV care
167	No. of HIV (+) non breast feeding mothers
168	No. of HIV (+) women tested and received results during PNC (new clients)
169	No. of women tested and received results during PNC (new clients)
170	No. of HIV (+) infants born to HIV (+) women who received ART
171	No. of infants born to HIV (+) women given ART prophylaxis (AZT)

172	No. of infants born to HIV (+) women tested with DNA-PCR and given results
173	No. of infants born to HIV (+) women tested positive with DNA-PCR and given results
174	No. of HIV exposed infants given or refilled NVP suspension after 6wks of age
175	No. of HIV exposed infants initiated on cotrim prophylaxis
176	No. of HIV exposed infants initiated on cotrim within 2 months of birth
177	No. of mothers tested for CD4
178	No. of women tested during labor
179	No. of MTC Vulnerable children
180	No. of children referred in
181	No. of children referred out (PIDC, MILDMAY e.t.c.)
182	No. of HIV (+) tested children
183	No. of children under 18 years counseled and tested for HIV
184	No. of children on monitoring (counseling)
185	No. of children on ART
186	No. of dead children
187	No. of deaths
188	No. of discordant couples
189	No. of children immunised for BCG
190	No. of children immunised for DPT- HepB+ Hib 1
191	No. of children immunised for DPT- HepB+ Hib 2
192	No. of children immunised for DPT- HepB+ Hib 3
193	No. of children immunised for Measles
194	No. of children immunised for Polio 0
195	No. of children immunised for Polio 1
196	No. of children immunised for Polio 2
197	No. of children immunised for Polio 3
198	No. of children treated with HOMAPAK
199	No. of children who received HOMAPAK within 24 hours
200	No. of dewormed 1st dose in the year
201	No. of dewormed 2nd dose in the year
202	No. of DPT- HepB+ Hib doses wasted

203	No. of total weighed at measles vaccination
204	No. of under 5 children who slept under a Net the previous night (as per HOMAPAK)
205	No. of Vit A supplement 1st dose in the year
206	No. of Vit A supplement 2nd dose in the year
207	No. of Vit A supplementation (postnatal)
208	No. of weight below bottom line at Measles vaccination
209	No. of abortions
210	No. of admissions
211	No. of babies born with low birth weight (< 2,5 kg)
212	No. of birth asphyxia
213	No. of deliveries by private practitioners
214	No. of deliveries in unit
215	No. of deliveries with TBA

216	No. of first dose IPT (IPT1)
217	No. of second dose IPT (IPT2)
218	No. of haemorrhage related to pregnancy (aph &/or pph)
219	No. of high blood pressure in pregnancy
220	No. of live births in unit
221	No. of malaria in pregnancy
222	No. of maternal deaths
223	No. of obstructed labour
224	No. of postnatal visits
225	No. of prenatal conditions (in new born 0-28 days)
226	No. of referrals from unit
227	No. of referrals to unit
228	No. of referrals to unit
229	No. of still births in unit
230	No. of non-pregnant women TT vaccine - dose 1
231	No. of non-pregnant women TT vaccine - dose 2
232	No. of non-pregnant women TT vaccine - dose 3
233	No. of non-pregnant women TT vaccine - dose 4
234	No. of non-pregnant women TT vaccine - dose 5
235	No. of pregnant women TT vaccine - dose 1
236	No. of pregnant women TT vaccine - dose 2
237	No. of pregnant women TT vaccine - dose 3
238	No. of pregnant women TT vaccine - dose 4
239	No. of pregnant women TT vaccine - dose 5
240	Lab has capacity
241	No. of new attendance
242	No. of re-attendance
243	No. of referrals from unit (all ages)
244	No. of referrals to unit (all ages)
245	No. of total attendance
246	No. of deaths in OPD
247	No. of acute flaccid paralysis diagnoses

248	No. of cholera diagnoses
249	No. of guinea worm diagnoses
250	No. of other emerging infectious disease (specify) diagnoses
251	No. of other viral haemorrhagic fevers diagnoses
252	No. of plaque diagnoses
253	No. of rabies diagnoses
254	No. of tetanus (neonatal)(0-28 days age) diagnoses
255	No. of yellow fever diagnoses
256	No. of leprosy diagnoses
257	No. of no pneumonia – cough or cold diagnoses
258	No. of onchocerciasis diagnoses
259	No. of schistosomiasis diagnoses
260	No. of sleeping sickness diagnoses
261	No. of tetanus (over 28 days age) diagnoses
262	No. of alcohol and drug abuse diagnoses
263	No. of animal/snakes bites diagnoses
264	No. of childhood mental disorders diagnoses

265	No. of diabetes mellitus diagnoses
266	No. of epilepsy diagnoses
267	No. of gastro-intestinal disorders (non-infective) diagnoses
268	No. of injuries- road traffic accidents diagnoses
269	No. of injuries= (trauma due to other causes)- diagnoses
270	No. of low weight for age diagnoses
271	No. of other cardiovascular diseases diagnoses
272	No. of anxiety disorders diagnoses
273	No. of mania diagnoses
274	No. of schizophrenia diagnoses
275	No. of other forms of mental illness diagnoses
276	No. of severe malnutrition (marasmus, kwashiorkor and marasmic-kwash) diagnoses
277	No. of other diagnoses (priority diseases for district)
278	No. of all others diagnoses
279	No. of total diagnoses
280	No. of other lab. tests

Appendix I – List of Conducted Interviews

Name, Title	Organization	Date, Location
Reuben K. Mubiru, Programs Manager	Kyetume Community Based Health Care Programme	In-Person Interview. March 2011; Kyetume, Uganda.
Dorothy Kibirige, Monitoring and Evaluation Program Manager	Kyetume Community Based Health Care Programme	In-Person Interview. March 2011; Kyetume, Uganda.
Henry Titus Kayondo, Gender Based Violence Program Manager	Kyetume Community Based Health Care Programme	In-Person Interview. March 2011; Kyetume, Uganda.
Lara Gomez, Research Manager of HIV Services	PACT Project, Harvard School of Public Health and Partners in Health, Brigham Women's Hospital	In-Person Interview. March 2011; Cambridge, MA
Matthew Peckarsky, Manager of Health Surveillance and Evaluation	Partners in Health	Phone Interview. March 2011
Brenda Rose, Housing Advocacy	AIDS Action Committee, Boston	Phone Interview. February 2011
Bernard Kakuhikire, Program Director	Sustainable Household Income Project	In-Person Interview. February 2011; Cambridge, MA
Veronica Miller, Executive Director	Forum for Collaborative HIV Research	Phone Interview. March 2011
Eric Brus, Health Library	AIDS Action Committee, Boston	Phone Interview. March 2011
Erin Sullivan	MIT Sloan School of Management, Partners in Health	In-Person Interview. February 2011
Mark Damesyn, Research	California Department of Public Health, Office of AIDS	Email Correspondence February 2011
Pamela Ogata, Research and Evaluation	Los Angeles Office of AIDS Programs and Policy	Phone Interview. February 2011