

FOREIGN AID, CHILD HEALTH, AND HEALTH
SYSTEM DEVELOPMENT IN TANZANIA AND
UGANDA, 1995-2009

by
Kevin Croke

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Abstract

As donors have scaled up efforts to improve health in sub-Saharan African, African countries have diverged sharply in their health performance: Some countries have made rapid progress while others have stagnated. Yet the reasons for these divergences are often not well understood. In this dissertation I present in-depth case studies of two such divergent countries, Tanzania and Uganda, over the 1995-2007 period. Over this period, Tanzania reduced its under-5 mortality rate by 35%, while Uganda's mortality rate decline was less than half as rapid; between 12% and 15% over virtually the same period. This occurred despite the fact that both countries received similar amounts of foreign aid for health, implemented virtually identical health sector reforms, and saw comparable rates of growth in GDP per capita and similar trends in other socioeconomic indicators.

Explanations for such differences often vary by academic discipline. Public health scholars often focus on coverage levels of critical child health interventions, while political scientists emphasize variation in the quality of governance institutions. I show that coverage of child survival interventions did indeed differ between Tanzania and Uganda, particularly in the area of malaria control, but that the ultimate determinant of these differences can be traced to political economy factors. Specifically, regime maintenance dynamics and the differing composition of political patronage coalitions in the two countries determined the relative success of health sector programming in Tanzania and Uganda.

In addition to outcomes such as under-5 mortality, I also analyze the results of broader health system strengthening efforts in Tanzania and Uganda over the 1995-2009 period. To structure this comparison, a new theoretical framework for health system performance is developed and tested, based on previous theory developed by Pritchett and Woolcock (2002) and Fukuyama (2004). The same political economy dynamics that contributed to Tanzania's stronger performance on child mortality reduction also enabled its greater progress on health system strengthening. Furthermore, Tanzania's experience demonstrates the potential for "second best" strategies for health system strengthening that can be implemented in conditions of relatively low state capacity.

Primary dissertation advisor: Professor Francis Fukuyama

Second advisor: Professor Peter Lewis

Additional readers: Professor Joshua Michaud, Professor Tanvi Nagpal, Dr. Nandini Oomman

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Finally, there is my wife Jean. From the moment we arrived in East Africa, there was rarely a dull moment – and she was the perfect companion for this adventure. For this, and for much else besides, this dissertation is dedicated to her.

Introduction

This seed of this dissertation was planted ten years ago, when as a recent college graduate, I first became aware of the ongoing human tragedy of HIV/AIDS in Africa. This sparked an interest in global health more broadly, and in the challenges of health system development. Several years later, when I began a master's program in International Relations at Johns Hopkins-SAIS, and became interested in the importance of institution building in development, I noticed a paradox: Many global health experts insisted that we would never make genuine progress on health in Africa without building strong country-level health systems. Yet in my courses at SAIS, I was learning the academic conventional wisdom that outside actors have limited ability to spur institutional development in developing countries.

A few years later, I returned to SAIS to begin a PhD. Before starting my courses, I went off to Kenya and Tanzania for several months. Working for an NGO in Dar es Salaam, I had a window into the Tanzanian health system. What I saw was a confusing mix of trends. PEPFAR and the Global Fund for AIDS, Tuberculosis and Malaria were putting significant resources into HIV/AIDS treatment programs, and achieving impressive scale up of antiretroviral therapy. Many lauded this achievement; others worried that the massive amount of AIDS money was distorting country priorities and undermining the broader health system. This was a high profile, high stakes debate, and I thought that I wanted to focus on it.

Yet there was also a community of donors and their Tanzanian counterparts who were focused not on HIV/AIDS but on child health and child survival. Their work was lower-profile and they had less money, but they had several recent national surveys that showed that they were making dramatic progress in the reduction of under-5 mortality. Was genuine institution building and health system strengthening actually happening in Tanzania? It was hard to say for sure. But looking around for potential comparison cases, I learned that Tanzania's neighbor, Uganda, had stagnated in its reduction of under-5 mortality. This was interesting – but also confusing. I knew that Uganda was famous in the international HIV/AIDS community as the first country to dramatically reduce its HIV prevalence, and it was celebrated in the multilateral donor world as a star economic reformer. What was going on here? Why was Tanzania making progress on basic health indicators while Uganda was lagging? Could understanding this process be a way to gain insight into the broader issues of health system development?

I decided that I wanted to find a way to study this question. Two years, and much PhD coursework later, I found myself in Tanzania again, ready to live there (and for a shorter period, in Uganda) and to learn more about what was happening on the ground. This dissertation is the result.

Shifting from the personal to the policy level, President Bush's PEPFAR program has now given way to the Obama administration's Global Health Initiative. This new program promises to focus on the very question of this dissertation – the challenge of using foreign aid resources and expertise to build health systems in developing countries. Given the scale of this program and its stated ambitions, one might conclude that the

United States government is now confident that it knows what it takes to build health systems in poor sub-Saharan African countries.

Time will tell whether this is true about the Global Health Initiative. However, the experience of researching this dissertation has given me a healthy respect for the complexity of the challenge. In the pages that follow, I do not pretend to offer a formula or set of “best practices” for health system development. Rather, I hope to suggest a way of thinking about the challenge. One aspect of this is an emphasis on political economy considerations. I argue that in many cases, political and institutional realities are the fundamental constraint on health system capacity, and genuine and sustained progress will only come from strategies that take the political economy of the health sector seriously. Second, I argue that the health sector is a broad enterprise, and not all sectoral functions are equally tractable to the efforts of outside actors. Policymakers and donors should look for strategic entry points that can catalyze further change, rather than simply offering a laundry list of programs for the entire sector.

Theoretical and empirical contributions

In the methodological realm, I hope this dissertation will provide two contributions. First, I build on a nascent literature in comparative politics that focuses on the institutional determinants of health outcomes. I believe that McGuire (2010) is correct in his argument that comparative politics is skewed in its intense focus on the political and institutional determinants of economic outcomes, compared to its almost total neglect of the institutional roots of basic human development outcomes such as life expectancy and child mortality. Political scientists have abandoned the field to public health researchers

and to economists, who have a comparative advantage in uncovering causality at the individual level. But the determinants of country-level progress or stagnation are more likely to be found at the level of national political and bureaucratic institutions and programs. Here I believe the classic comparative politics case study method still has much to contribute.

I also seek to “bring the state back in” to public health. I have had countless conversations with public health practitioners on the ground in Tanzania and Uganda who were deeply expert in the technical and programmatic aspects of their work, but were quick to point out that ultimately, leadership and “political will” were the most important factors in program success or failure. But these professionals were typically not familiar with the basic political and institutional concepts that are the stock-in-trade of comparative politics. Surely political scientists have something to contribute here.

To this end, I first make the case that governance variables can have a determinative effect on the outcomes of health sector aid programs, and show the mechanisms through which this can take place. Second, I show that there are hybrid institutions that can provide “just enough governance” to enable substantial health sector progress even in relatively low capacity states. Third, I provide further evidence against an uncritical acceptance of the “wealthier is healthier” school of thought. Some have interpreted this thesis to imply that in order to improve basic health indicators, countries should focus on economic growth, which is the ultimate driver of human development outcomes, rather than investing in primary health care programs. While the empirical literature shows that this correlation is quite robust historically in the long run, I believe that my research shows that even in situations of moderate institutional capacity, vitally important

indicators like under-5 mortality can be dramatically improved in the short run, at relatively modest cost.

Outline

Chapter One offers an extended argument about the relevance for comparative politics methods in this domain. The essential argument is that since country-level health outcomes are clearly affected by national political and bureaucratic institutions, analysts must understand the dynamics affecting those institutions. Qualitative and comparative methods can provide the deep contextual understanding that is needed to make sense of the drivers of institutional development at the country level. I then make the case for Tanzania and Uganda as comparators, arguing that they share deep political, socioeconomic, geographic, and cultural similarities, but have also clearly shown divergent performance on the main dependent variable of choice, under-5 mortality.

Chapter Two surveys the relevant literature, and presents the dissertation's theoretical framework. I survey the existing literature on the drivers of declines in child mortality, and on the determinants of health system performance. In both literatures, I identify a gap between what I call "public health-technocratic" approaches and "institutionalist" approaches.

This chapter is also where I introduce a theoretical framework for understanding health systems. Here I build on a conceptual apparatus developed by my primary dissertation advisor, Professor Fukuyama, in his 2004 book *State-building*. In this section, I adapt his theoretical framework, as well as the closely-related ideas of Lant Pritchett and Michael

Woolcock (2002), to create a new theoretical framework for understanding efforts at health system strengthening.

Chapter Three introduces the Tanzania case study, and examines the child mortality decline in that country. Apart from analysis of publicly-available survey data and numerous documents and reports, this study is based on over 50 formal interviews and many other informal interviews and observations conducted over the course of 15 months in Tanzania, starting in April 2009 and culminating in December 2010. In addition, it is informed by observations and insights that I had over the course of three separate consulting projects working for Management Sciences for Health, and directly for the PEPFAR country team, over the 2007-2010 period. This period of work could be considered akin to an anthropologist's method of "participant-observation;" it greatly increased my understanding of institutional and political dynamics between health sector donors, vertical funds, and the government of Tanzania. In addition, I spent an extended period of time working with the NGO Twaweza. Twaweza's mission is to improve service delivery in Tanzania, Kenya, and Uganda, and my time working with that organization's talented and experienced staff also contributed greatly to my understanding of the political economy of service delivery in both Tanzania and Uganda.

Chapter Four continues the Tanzania case, this time focusing on the six functions of the health system, and application of the Pritchett/Woolcock/Fukuyama framework to these functions. The conclusion of chapter four addresses child survival and health system dynamics in the Tanzanian context more broadly.

Chapter Five introduces the Uganda case study and analyzes the child mortality situation over the past 15 years. This case is also based on extensive fieldwork in Uganda. While living in Tanzania, I took two shorter research trips of several weeks in length, and then moved to Uganda for a period of several months in the spring of 2010. This chapter is based on approximately 40 formal interviews and many more informal conversations about health system dynamics in Uganda, in addition to the surveys and reports cited in the chapter. It is also based on extensive use of Ugandan media sources. Uganda is blessed with an excellent English language media sector, and I have learned a great deal over the last two years from daily reading of the *New Vision* and the *Monitor*, and weekly coverage in the *Independent*.

Chapter Six continues to analyze Uganda, with a focus on the six functions of the health system, and application of the Pritchett/Woolcock/Fukuyama framework to these functions. The conclusion of this chapter addresses child survival and health system dynamics in the Uganda case as a whole.

Chapter Seven concludes, and attempts to draw broader conclusions for both the academic and policy communities.

Chapter 1: Methods and Case Selection

This chapter provides an argument for the use of qualitative case study methods to problems of public health. It also presents the justification for choosing Tanzania and Uganda as comparators. Finally, it describes the field methods used in this research project.

Qualitative and quantitative methods have distinctive strengths and weaknesses, and the appropriate method should be driven by the nature of the research question. Quantitative methods can allow stronger causal identification, greater measurement of uncertainty, and greater confidence that outcomes are not driven by random variation. Advantages of qualitative methods include greater attention to local context, analysis of hard-to-measure variables, identification of causal processes, and generation of new hypotheses. There are several reasons why a qualitative, case study-based approach is appropriate for this dissertation's research questions. These reasons include: a) the importance of causal mechanisms; b) the relevance of local contextual factors; c) the difficulty of measuring key outcomes related to institutional quality; d) the need for systematic, detailed descriptive work in the relatively new field of comparative health systems research; e) the related need for hypothesis or theory formation; f) the impracticality of experimental methods and the weaknesses of multivariate regression as a tool for understanding health-related outcomes at the country level; and g) the need to uncover inherently subjective information about actors' political motivations and strategic calculations.

This methodological approach is somewhat atypical for public health-related research, which is largely a quantitative field focused on measurable health outcomes at the population level. It is more familiar, however, to political scientists who study processes and institutions at the country level. This dissertation is in some sense an attempt to use political science tools and concepts to explain variation in outcomes at the level of the national health system. The performance of a health system is typically measured by the health outcomes that it produces, measured by metrics such as infant or child mortality, life expectancy, or coverage of key health interventions (WHO 2000; Murray and Evans, 2003).¹ Yet while empirical measures may show the outcomes that a health system has produced, they do less well at explaining *how* it has produced those outcomes. They may demonstrate that a given level of coverage of a certain intervention (measles vaccination, for example) reduced child mortality, but they do not tell us *why* the government adopted that measure or why the various actors within the health system were able to effectively implement it (Pritchett 2009). In this study, the goal is not to gather data on health outcomes or coverage of key interventions. This data has already been collected, and it shows large differences in outcomes among Tanzania and Uganda. The goal of this study is to understand *why* these health outcomes differ, and how those differences came about. The second goal is to examine the performance of various health system *functions*, which are key intervening variables between inputs into health systems (funding, drugs, human resources) and outputs (improved population health). Recent theoretical contributions by Pritchett and Woolcock (2002), Fukuyama (2004), and World Bank (2004) offer a set of predictions about which types of public sector functions are amenable to improvement with the assistance of outside actors, and which are likely to lag behind. Greater

understanding of these differences will allow donors to think about *strategic entry points* for health system strengthening, when overall institutional development may be an unattainable task. In chapter 2 I adapt this public sector theoretical framework to the functions of the health sector, and in chapters 4 and 6, I assess its value in predicting health sector progress by function in each country.

This project attempts to generate causal inference through application of John Stuart Mill's "method of difference." This method entails comparison of cases that are similar in many respects, but differ on the dependent variable. By eliminating the factors that are common across cases, insight can be gained into the actual causal factor or factors. Scholars of comparative politics often use single case or small N comparisons when the phenomena that they seek to explain are complex, subject to multiple causes, and highly context-dependent. In these situations, highly detailed knowledge of individual cases is beneficial. While small N research strategies are vulnerable to the "many variables, small number of cases" problem (Lijphart 1971), and cannot rule out genuinely random causal factors, these weaknesses can be outweighed by the analytical leverage offered by detailed contextual knowledge of the cases in question. Furthermore, by shedding light on causal processes and mechanisms, the case study method may allow us to look inside the "black box" of causality; a helpful step when dealing with an entity as large as a health system or a process as complex as health sector reform. There are many steps between the introduction of a health sector reform program and the successful implementation of new interventions at the operational and service delivery levels. Filmer, Hammer and Pritchett (2000) describe the various "weak links in the chain" that can prevent health

sector reforms from translating into improved health outcomes. In the two cases in this dissertation, close attention will be paid to which “links” functioned and which ones broke down in the causal chain between initiation of health sector reforms, allocation of large scale health sector foreign assistance, increased coverage of key services, and improvements in the health status of the populations in question.

A further reason for qualitative, case study approaches to health systems is that they are entities that exist at the country level, where some forms of quantitative research are not easily applied. Experimental methods such as randomized controlled trials are often described as providing the new “gold standard” of evidence on the impact of a wide range of development interventions, including in the health field. They also increasingly being applied to a wide range of health systems-related questions, such as pharmaceutical supply chain performance, health worker retention, community health worker effectiveness, and other topics (e.g. Bjorkman and Svensson 2009). There is great scope for RCTs to add to our stock of knowledge, not just about which health interventions work best, but also about how to improve health sector governance and accountability. But these kinds of institutional experiments can only be done when the unit of interest is the village, the facility catchment area, or even the district. There is much that they will never be able to tell us about interventions at the country level.² The donor community is not about to begin randomizing its approach to health sector reform across countries. Non-experimental multivariate regression analysis also suffers from methodological weaknesses at the country level. Cross-country regression analysis has been highly influential in the study of economic growth.³ Yet as Rodrik argues:

Very little of this econometric work survives close scrutiny... there is little reason to believe that the primary causal channels are invariant to time period, initial conditions, or other aspects of the country's circumstances... analytic country narratives, informed by growth theory and cross-national evidence, can play a useful role in developing such contingent hypotheses and testing them (albeit informally)... case studies and cross-national econometrics are not substitutes... ideally, case studies can generate novel hypotheses that in turn suggest new cross-national tests.

However, the case for a qualitative approach rests not on the difficulties of a quantitative approach, but because of the particular strength of qualitative methods. This is demonstrated by the third reason, which is the critical importance of *context*. The choice between quantitative and qualitative methods is in some sense a tradeoff between breadth and depth. While the larger sample size of quantitative research brings with it many benefits, it also presents a relatively “thin” picture of any individual case. The parameter of interest may be well-identified and measured, but it may well only capture only a small fraction of the change in a given outcome. Small N analysis has a less precise method of “control” and less external validity but provides a “thicker” description of any given case. If a particular outcome is highly sensitive to context, and dependent on the interaction of numerous situational details that cannot easily be measured or modeled, then small N analysis may be appropriate.⁴ Peterson (2010) makes the case for this approach, in the context of health and child survival aid evaluation. Commenting on an evaluation of the Accelerated Child Survival and Development program in Ghana, Benin, and Mali (Bryce et al 2010), Peterson (2010) notes that the reason for the failure of the program appears to be gaps in malaria control programming (specifically the unavailability of ACT drugs for treatment and insecticide treated nets for prevention), and the failure of community health worker programs. Yet the impact assessment, while technically impressive and adept in its use of sophisticated empirical methodology, offers no insights into the *reasons* for the

failure of these programs. To address this gap, he stresses the need for case study work to accompany quantitative impact evaluation.

Gerring et al. make similar points. In an unpublished paper,⁵ Gerring and co-authors construct a cross country model that they argue enables them to isolate and quantify health system performance, controlling for improvements in health indicators that accompany economic growth. Yet they note that while their model can identify interesting outliers – countries that have achieved superior performance in health outcomes (such as child mortality) given their level of economic development – the *mechanisms* by which better performance has come about can best be uncovered by case studies focused on these outliers.

The case for the critical importance of context for service delivery institutions in developing countries has been made by Pritchett and Woolcock (2002). They identify at least eight potential institutional forms for service delivery currently promoted by the development community,⁶ and argue that with deep knowledge of the country context – and analysis informed by the theoretical concepts that they introduce – it should be possible to match appropriate institutional designs for service delivery with given countries. They caution, however, that this match will be so dependent on the interaction of a range of difficult-to-measure yet crucial country-level variables that “to empirically estimate each of these interactive effects would require sufficient experiences in each category, but the possible variations will rapidly and inevitably outstrip any conceivably empirical experience.”⁷ The path forward is through the slow accumulation of detailed

country cases that illustrate the interaction of country- (and sector)-specific political economy factors with variations in the design of service delivery institutions.

Pritchett and Woolcock's emphasis on the importance of context and the heterogeneity of viable institutional forms across countries echoes the broader consensus in the development community that, first, "institutions matter," and second, that there is no single institutional form that can be imposed from above or prescribed according to a set formula, by well-meaning outsiders in possession of knowledge about "best practice."⁸

Given that Pritchett and Woolcock and many others have highlighted the implications of current institutionalist thinking for the study of service delivery, one might wonder whether this institutionalism has been applied successfully to thinking about the health sector in developing countries. A review of the recent literature (discussed at length in chapter 2) suggests that it has not. While there has been renewed emphasis on the topic of health systems, this has largely been a technical literature that has emerged as a reaction to the dominance of disease-specific vertical programs at the expense of broader, system-oriented interventions. There has been much less analysis of what might be called the political economy of health systems (McGuire 2009, Lieberman 2009, and Nunn 2008 are three notable exceptions, discussed below). In an article entitled "A New Discipline is Born: Comparative Health Systems Research," *Lancet* editor Richard Horton (2006) argues that:

in health circles...there is an understandable shyness about explicitly discussing the politics of policymaking. There are very few scientific studies that have analyzed the interaction between the politics of a governing party and the health of populations. Yet the mechanisms by which politics determines

policy, and so affects the health of people, are surely proper subjects for scientific investigation... What has never been done is to examine the detailed mechanics of health policymaking and its impact for a given political epoch. The scientific study of the politics of policymaking is likely to yield some surprises.

McGuire (2009) makes a similar point, noting that “public health issues are neglected in the literature on the comparative politics of developing countries, and political science issues are neglected in the field of public health.” While international health specialists emphasize the importance of building national health sector institutions, political scientists and economists argue that the political economy of these institutions is their central feature. Yet almost nobody is looking at the political economy of health systems.⁹

The importance of political economy, in turn, points to another rationale for the qualitative approach. As Elisabeth Wood (2007) notes, political behavior is often driven by individual, subjective perceptions. The reasons why a given actor or group took a particular political risk, defected from a coalition, or joined an opposition movement may depend on their idiosyncratic perception of a situation or a future strategic interaction. This kind of subjective information is in many cases best acquired via interviews with key participants in the political processes in question, especially when the processes take place at the elite level. To take one example, dynamics in the Ugandan Ministry of Health in the 2003-2006 period are impossible to understand without some sense of the political and personal relationships between President Museveni and the former military colleagues he appointed to lead the Ministry at that time.

This study also attempts to understand the effect of aid and health sector reform on different health system functions. Some aspects of functional performance are best

evaluated quantitatively. Both the Ugandan and Tanzanian governments, for example, track the frequency of stock outs of key pharmaceuticals in hospitals and health centers, which is a reasonable measure of supply chain performance. Accuracy and completeness of reporting aside, this is a good example of a health sector function that can be measured, to a first approximation, using simple quantitative indicators. Other important functions, such as sectoral governance, are not as easily measured. The difficulties of capturing bureaucratic performance with purely quantitative indicators are a consistent theme in the literature on bureaucracy and public sector reform.¹⁰ Yet interviews with key stakeholders proved to be a highly effective means of capturing information about various bureaucratic functions. Similarly, important information about the nature of major health system reforms - such as decentralization, for example – may not be apparent without qualitative investigation. For example, both Tanzania and Uganda have decentralized their government health systems to a significant degree. Yet as chapters 3 and 4 detail, Tanzania's health sector decentralization was in many ways a genuine attempt to devolve power and resources (DeSavigny et al, 2006), while Uganda's has been almost completely undermined by President Yoweri Museveni's strategy of using decentralization as a tool of patronage (Mwenda, 2007). Quantitative measures of decentralization, such as share of health budget spent at the district level, do not capture this distinction; in fact they may obscure it.

Furthermore, by opening up the “black box” of causality and allowing documentation of actual causal chains of events, qualitative research may also be valuable as pure description. Description is distinct from theory generation and testing, but in genuinely

novel or under-studied areas, analytic work cannot begin unless there is a credible account of what has actually happened (Gerring, 2010). Thus description and focus on causal processes can help generate new theory. This is especially useful in novel situations when we suspect that existing theory does not adequately capture all possible causal channels or effects. The unprecedented influx of aid for health in selected African countries may be such a situation.

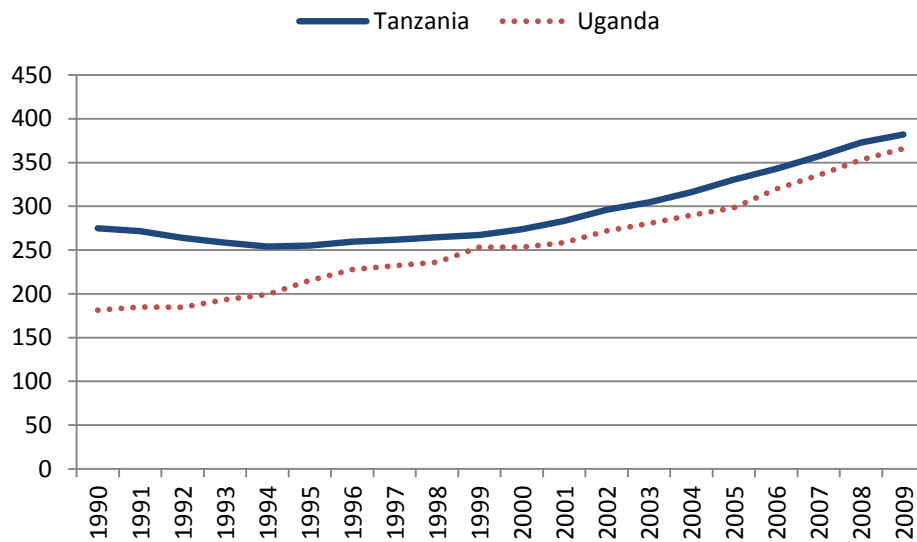
Case selection

In this section I will present the justification for selecting Tanzania and Uganda as comparators. The primary selection criteria, following Mill's method of difference, is based on the fact that the two countries are extremely similar across a range of key socioeconomic indicators, but are markedly different in the outcome of interest, the degree of reduction in under-5 mortality over the period in question. A great deal of detail on health-related similarities is presented in chapters 3 and 4. In this section, I present political, economic, social, and historical evidence for why the two countries serve as good comparators.

Selecting comparator countries is always a difficult endeavor. Countries are large and incredibly complex entities, and even the most similar nations differ to some degree on a wide range of characteristics. However, the most basic similarities between Tanzania and Uganda are geographic and historical. Tanzania and Uganda share a geographic region; together with Kenya they comprise the three large nations of East Africa. For much of the

20th century they were governed by the same colonial power.¹¹ They are both officially Anglophone, although English is more widely spoken in Uganda, in part because Tanzania has the lingua franca of Kiswahili.¹² Economically, they are extremely close in both income per capita and in their economic growth rates over the past twenty years (see figure 2). Politically, both are presidential systems with unicameral parliaments and first-past-the-post electoral systems. Both decentralized power to district governments over the course of the 1990s. Both countries receive similar magnitudes of aid, equivalent to approximately 40% of total government expenditures. Both are formal democracies that underwent transitions to multiparty politics in the mid-1990s. Both have been dominated by ruling parties which, since the transition to multiparty elections, have fluctuated between 60-80% of the vote in presidential elections; both are ranked “partly free” by Freedom House. Moreover, Uganda’s President Yoweri Museveni studied at the University of Dar es Salaam, was an exile in Tanzania for many years, and constructed his regime and ruling party (NRM) such that it resembles CCM’s hierarchical, mass participation structure. Both countries are ethnically quite diverse: Tanzania’s ethnolinguistic fractionalization index is 0.93 while Uganda’s is 0.90, compared to a sub-Saharan Africa mean of 0.65 (Posner, 2004).¹³ Historically, however, ethnicity has been much less politicized in Tanzania.

Figure 1.1 GDP per capita in Tanzania and Uganda, constant 2000 US dollars

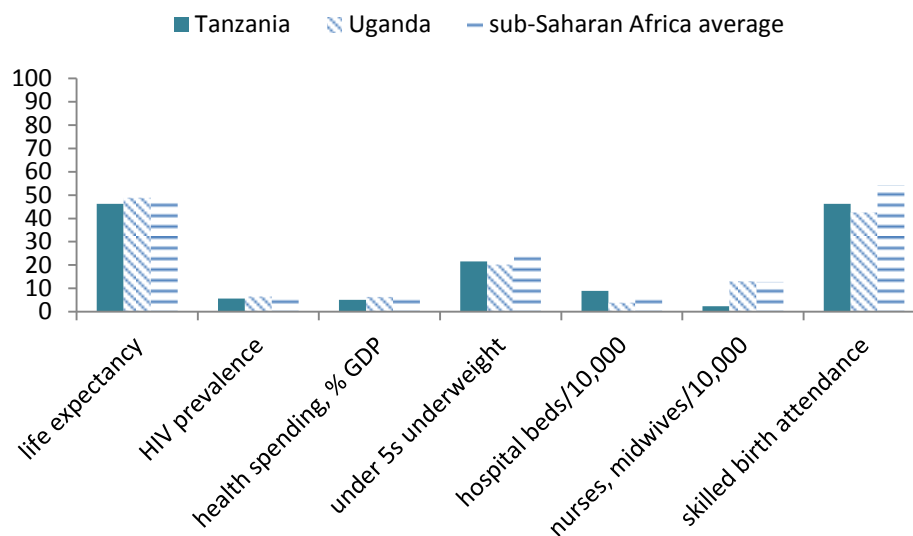


Source: World Development Indicators 2010

In addition to general political and socioeconomic similarities, the government health systems in both countries have historically performed at similar levels, while facing quite similar disease burdens. As table 3 demonstrates, there is not much difference in levels of life expectancy, HIV prevalence, health spending, nurses and hospital beds per 1,000 residents, percentage of births attended by a skilled professional, and child wasting and stunting. These values are also close to sub-Saharan African averages in most cases. There have been several attempts to quantify the performance of national health systems empirically, through the creation of indexes using a wide range of health and other socioeconomic inputs. As mentioned above, Gerring et al. provide one such model, ranking the performance of health systems by estimating the results that a country “should” achieve for its level of income, and then measuring the distance of countries from this expected performance. The difference is thus a measure of “public health

achievement.” According this index, the two countries achieved roughly similar rankings: Uganda captures 93rd place, while Tanzania is 120th (out of 166 countries), while in another specification Uganda is 133 while Tanzania is 148. The WHO conducted a similar exercise in 2000, in conjunction with the release of the 2000 World Health report. In this ranking, Uganda was ranked 149, and Tanzania was ranked 156, while in another specification Uganda was 179 and Tanzania was 180. In 2010, Tanzania was ranked 148th in the United Nation’s Human Development Index, while Uganda was ranked 143rd.

Figure 1.2: Health system and population health indicators for Tanzania, Uganda and sub-Saharan Africa

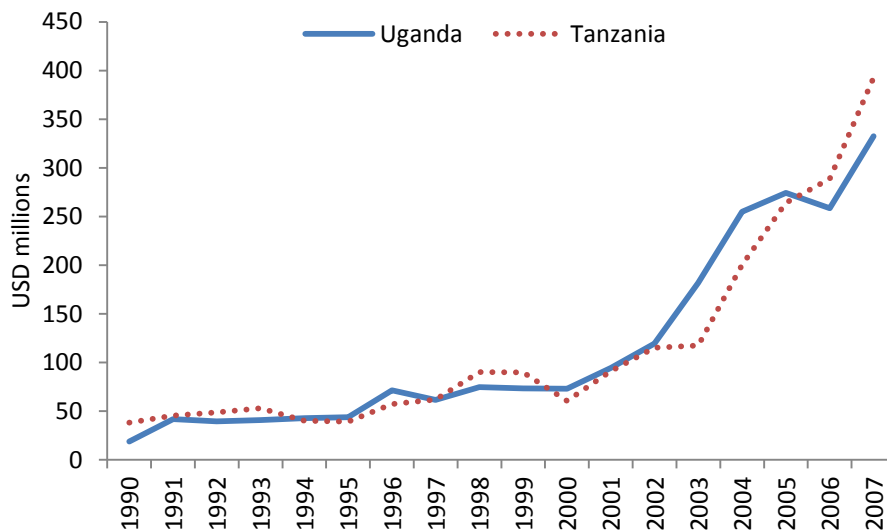


Data from DHS and WHO, compiled using the Health Systems 2020 data compilation tool, www.healthsystems2020.org

In addition to basic similarities in the structure of their health systems and in basic population health indicators, they were both selected as PEPFAR “focus” countries, meaning that they began receiving large amounts of HIV/AIDS funding circa 2005, and

both countries have also received significant resources from the Global Fund for AIDS, TB, and Malaria as well. Several years before the initiation of PEPFAR, both countries had initiated very similar health sector reforms, starting in the late 1990s. As chapters 3 through 6 will demonstrate, the origins, rationale, and structure of these health sector reforms were extremely similar. Moreover, they received almost exactly the same amount of health sector aid in the past decade (see figure 1.3 below). Using a new data set capturing public and private health sector assistance compiled by the University of Washington’s Institute for Health Measurement and Evaluation, we can see that health sector aid levels roughly doubled over the 1990s in both countries before beginning a steep ascent in the late 1990s/early 2000s.

Figure 1.3: Health sector aid to Tanzania and Uganda, 1990-2007



Source: Institute for Health Metrics and Evaluation.

Finally, it is worth saying a few words on the reason for comparing Tanzania and Uganda, rather than the more familiar comparison (in the political science literature, at least) of Kenya and Tanzania. There is a long history of using these two countries as comparators (Barkan 1984; Barkan 1994; Miguel 2004), and they share many of the same similarities that Tanzania and Uganda share. The reason that Uganda and not Kenya was chosen as a comparator for Tanzania for this project was because at the time of project initiation, Kenya did not have a recent DHS survey with updated information on child survival and health systems-related outcomes. Moreover, Kenya's historical levels of under-5 mortality were significantly lower than in Tanzania and Uganda (DHS 1993), suggesting a qualitatively different set of health sector challenges. Relatively late into the conduct of fieldwork (summer 2010), new Kenya DHS results were made public, showing significant mortality decline in Kenya as well. As a result, some information from Kenya will be presented and analyzed in somewhat abbreviated form in chapter 7.

Fieldwork and interview selection

Information about this dissertation's research questions came from a range of sources, including key informant interviews, routine administrative data, household surveys, and donor, government and academic articles and reports. The primary fieldwork component, however, consisted of interviews with key informants. An important methodological step in key informant interviewing is to specify how interview targets will be selected. One method of elite interviewing is to target a broad category of elites (such as MPs, for example, or senior civil servants), create a sampling frame, and then randomly select

respondents (Achenbach and Rockman, 2002). However, since my population of interest was a relatively narrow group of health sector officials, donors, and NGOs, my interview targets were identified in a purposive rather than random way. Informants were identified based on their likely knowledge of or connections with child survival health programs and interventions and/or broader health system programs and processes. Interviews thus included stakeholders directly involved with child survival programs, such as government officials in relevant parts of the Ministry of Health (such as the National Malaria Control Program or Expanded Immunizations Program) and NGO implementors of child survival-related programs, as well as broader health sector stakeholders, such as officials in other parts of the Ministry or district health services, other health NGO staff, and health-oriented donors, especially those involved at the policy level, such as the active members of the Donor Partners Group for Health (DPG-H).

For questions related to specific health system functions, interviews were sought from three different sets of actors for each of the six WHO health sector functions: government officials in the relevant Ministry department, the donors that fund activities related to that function, and NGOs that deal with that particular function. In many cases, a three-sided government/donor/NGO policy community can be identified.¹⁴ By way of example, in Uganda, DANIDA and USAID specialize in supply chain-related technical assistance, while Management Sciences for Health, Supply Chain Management Systems, and the Clinton Foundation are the relevant supply chain NGOs, and the National Medical Stores is most important government institution. By interviewing and “triangulating” between NGO supply chain technical officers, Ministry and National Medical Stores supply chain

officials, district case study evidence, administrative data, and government and NGO reports on the subject, it was possible to gain a reasonably clear picture of the dynamics of that particular health sector function over time.¹⁵

Finally, I met with two further categories of interviewees. The first was comprised of stakeholders of health-related “vertical funds,” such as the Global Fund for AIDS, TB, and Malaria, and PEPFAR. In both countries, vertical funds such as PEPFAR and the Global Fund expend amounts close to or larger than the entire non-HIV/AIDS health budgets. Given this deep involvement across a range of health sector functions over the relevant time period, I therefore sought interviews with PEPFAR staff (both at USAID and CDC), PEPFAR implementor NGOs, Global Fund-related staff in the governments of Tanzania and Uganda, and Global Fund implementor NGOs. The final category of stakeholders that I targeted were experts and observers of governance and political economy beyond the health sector in both countries. These interviewees were typically not experts in the health sector per se, but often had relevant insights regarding the political economy of public service delivery more broadly.

Potential Weaknesses and Triangulation Methods

There are several potential weakness in this research design. First, the qualitative, case study design of this study does not allow for collection of new quantitative, survey-based evidence about health sector outcomes in Tanzania and Uganda. While additional empirical evidence about health sector trends would certainly have been helpful, I would

note, however, that key information on outcomes and intervention coverage at the service delivery and individual level has already been gathered via recent household surveys. This study attempts to provide complementary qualitative insights regarding what are primarily system-level processes. Second, it could be argued that the two countries are too different to permit meaningful comparison. While it is true that there are important differences among the countries (the largest relate to Tanzania's legacy of *ujamaa* socialism, and the Amin dictatorship and subsequent conflict in Uganda), I would argue that these are well within the range of difference typically encountered among units in small N comparative work. Finally, it can be argued that qualitative methods may not be sufficient to capture the change in various health system functions over the period in question. It is true that certain system functions, such as supply chain efficiency or HMIS accuracy, would be ideally measured quantitatively. However, I found that even for these two functions, there is strong consensus among stakeholders about the direction of change – in Tanzania, for example, the supply chain was widely held to have improved, while its HMIS was seen as unchanged. I therefore argue that in most cases, triangulation of information from government, donor, and NGO sources will be sufficient. However, the definitiveness of the evidence will ultimately be for the reader to judge.

A final potential problem with evidence garnered from interviews is that interviewees may not provide accurate information. This may be because they prefer to distort the truth in self-serving ways, because they do not recall events in question, or simply because they do not fully understand the processes in question. Therefore it is necessary to use various techniques to correct for these potential biases. The first step is simply to

consider potential sources of bias for each category of interviewees, and to weight this when evaluating evidence that they provide. For example, in the vertical program section, PEPFAR and Global Fund staff, and their implementing partner NGOs, clearly have both material and psychological reasons for believing and stating that their programs are strengthening various health system functions. As a result, their statements must be weighted accordingly. (On the other hand, when an interviewee gives evidence “against interest,” it is of particular note.) The second technique to reduce this type of bias is via “triangulation,” whereby numerous stakeholders with knowledge about a given topic are interviewed (Berry, 2002). The information that is common to all multiple accounts is privileged. Furthermore, general principles of qualitative research were applied: I used and privilege primary sources, and attempted to corroborate facts to the extent possible. Sources with more detailed, direct and comprehensive knowledge were judged to be more credible.

¹ Murray and Evans argue that in addition to outcomes produced, health systems should also be evaluated by criteria related to fairness of financing, and user satisfaction.

² Dani Rodrik, “The New Development Economics: We Shall Experiment, But How Shall We Learn?” Brookings Institution conference, summer 2008, <http://ksghome.harvard.edu/~drodrik/The%20New%20Development%20Economics.pdf>.

³ See Roodman (2007), “Macro Aid Effectiveness Research: A Guide for the Perplexed.” Attempts to apply cross country regression to with health outcomes as the dependent variable can be found in Newhouse and Mishra 2009; Grepin 2008; and Boone 2006. For weaknesses of cross country methods at the country level, see Gerring (2001), Temple (1999), also Roodman.

⁴ As Lieberman (2005) argues, the complexity, context-specificity, and wide range of causal factors associated with outcomes generated at the *country* level mean that causal relationships at this level are often best examined using qualitative methodology. See also John Gerring, “The Case Study: What it is and What It Does.” *American Political Science Review* (2004).

⁵ Available at <http://people.bu.edu/jgerring/documents/PublicHealthPerformance.pdf>.

⁶ These are: supplier autonomy, single-sector participatory, contracting out, decentralization to state/provinces or localities/municipalities, demand-side financing, social funds, and Community-Driven Development.

⁷ Similarly, Kim (2008) asks, “why the case method for global health?,” and answers his own question by arguing that “there is nuance and detail in what makes something work that is not captured in other approaches,” in large part because “global health delivery is complex and situation-dependent.”

⁸ First, many in the development community concluded, after many attempts to impose structural adjustment on unwilling governments, that underlying institutions were more important than specific policy choices. Second, many analysts also concluded that the institutions themselves would take a variety of

heterogeneous forms that would rely on the matching the country's underlying structure, political culture, history, and other characteristics (Rodrik 2007; Fukuyama 2004).

⁹ Acemoglu (2008), for example, argues that institutions themselves are manifestations of underlying political equilibria, and that deleterious economic policies like hyperinflation are not carried out because governments think that they will be successful, but rather because they have a political logic. Successful reform must therefore, by this logic, involve some shift in the underlying political economy of a given policy environment or sector. See also Albert Hirschman, *Journeys Toward Progress* (New York: Anchor, 1965).

¹⁰ See Pollit and Bouckaert, *Public Management Reform: A Comparative Analysis*. (Oxford: Oxford University Press, 2004).

¹¹ Uganda was colonized by the British; Tanzania was first colonized by the Germans but was made a British mandate after WWI.

¹² Uganda has no single universally spoken language, although Luganda, English, and to some extent Kiswahili are partial lingua francas.

¹³ Tanzania is commonly said to have 120 tribes; according to Uganda's constitution it has 65 tribes.

¹⁴ In each country, there is also a WHO technical officer for each health sector function.

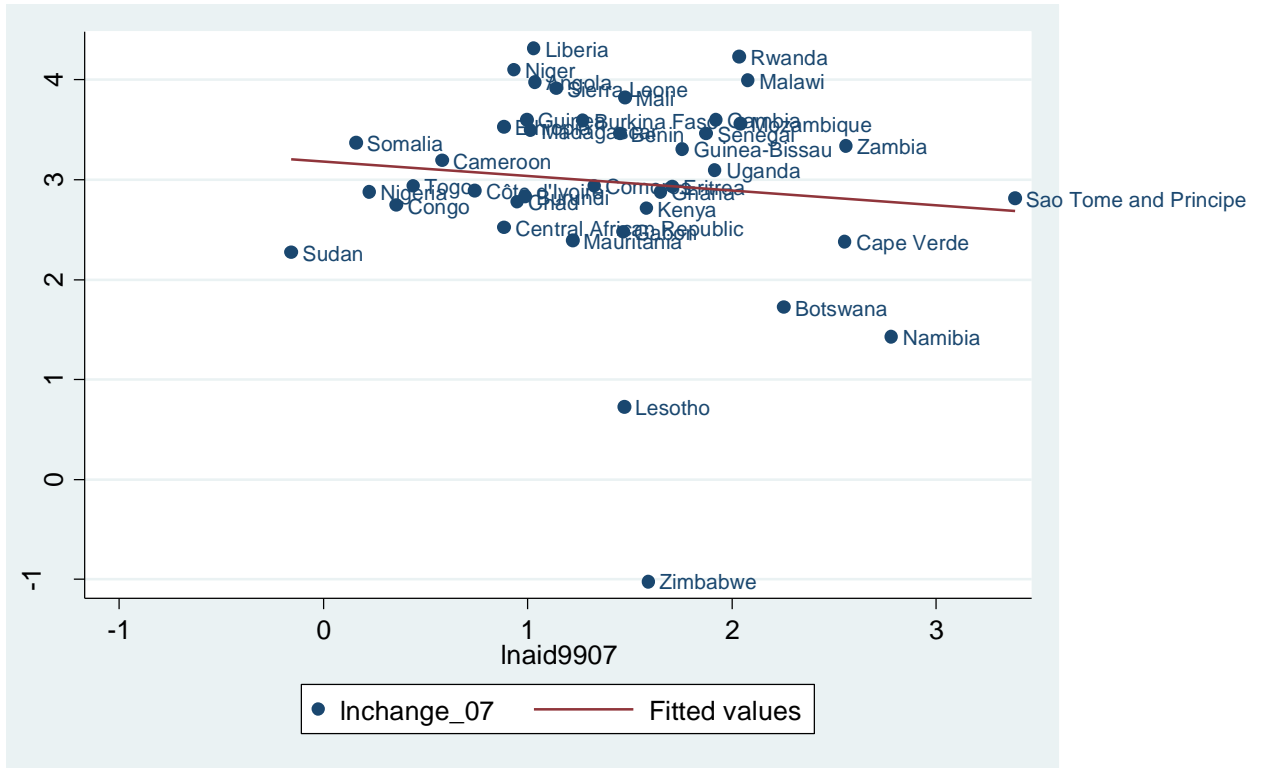
¹⁵ In some cases, the initially targeted official will not be available, but another similar official can be interviewed via "snowball" methodology. ("Snowball" methods are those in which the researcher asks each interviewee to recommend additional interview targets.)

Chapter 2: Theory and Literature Review

I. INTRODUCTION

The past decade has seen intense interest in human development outcomes in the developing world, and especially in sub-Saharan Africa. Development assistance for health has increased dramatically. As these resources have increased, some countries have begun to make impressive progress, while others have continued to lag. Yet there is weak understanding of the determinants of country level progress or stagnation. There is a small empirical literature on the relationship between health-focused foreign aid and basic health outcomes, but it is largely inconclusive (Grepin 2009; Mishra and Newhouse 2007). As figure 1 shows, a simple scatterplot of health aid and child mortality reduction in sub-Saharan Africa over the past decade shows essentially no relationship. Yet even as there appears to be no major causal relationship on average, we do see important variation among countries. How can this be explained? In this study I attempt to answer these questions using a small N, comparative case study approach. Comparing countries that are similar in many ways but that have differed in their progress on basic health indicators is a potential first step towards genuine understanding of the drivers of divergent performance.

Figure 2.1: Foreign aid for health per capita (log scale) and child mortality percent change (log scale), 1998-2007

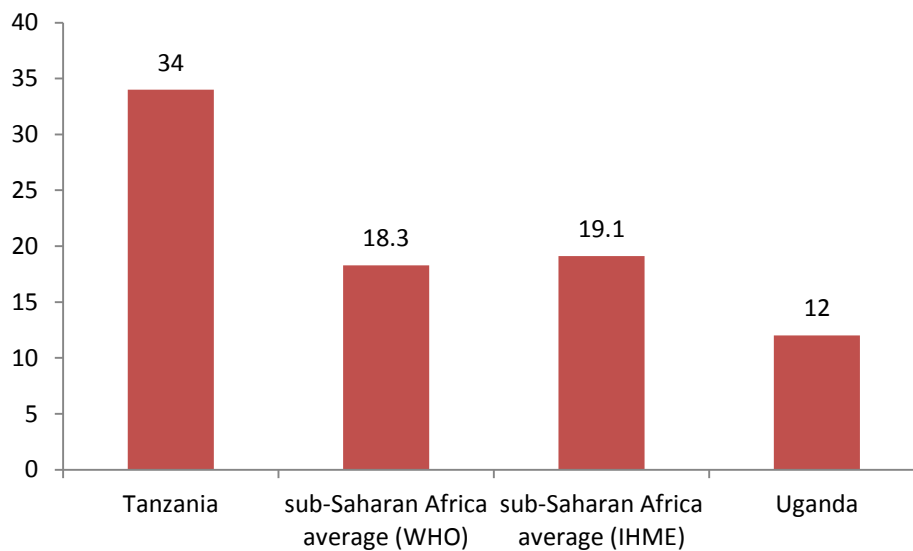


Data from Institute for Health Metrics and Evaluation child mortality estimates and development assistance for health estimates

Child mortality has decreased dramatically in Tanzania over the past 15 years. In Uganda, progress has been far slower. This study will attempt to uncover the reasons for this divergence, given that the two countries received similar levels of health sector aid, implemented similar institutional reforms, and are relatively similar across a range of socioeconomic and political indicators. The first goal of this study is to understand the reasons for this difference. By comparing child survival initiatives and programs, health sector reforms, and broader socioeconomic developments in Tanzania and Uganda, I will attempt to understand which factors have enabled Tanzania’s relative success. Given the

striking similarities in health sector developments in the two countries – at least on the surface – it is puzzling why the outcomes are so different.

Figure 2.2: 1996-2006 percent child mortality decline in Tanzania, Uganda, and sub-Saharan Africa



Data is taken from DHS 1999, 2004, and 2007 Tanzania; DHS 2000 and 2006 from Uganda; data on Sub-Saharan Africa averages calculated by author from child mortality data from the Institute of Health Metrics and Evaluation (2009) and World Bank (2010).

The second goal of this study widens the focus, from child mortality to the broader health system, and attempts to assess the progress of the health system as a whole in Tanzania and Uganda over the same time period. It was a period of dramatically increased aid flows into the health sector in both countries, providing an opportunity to examine the reaction of the two similar systems to a common external “shock.” I will do this by studying six key health sector functions – service delivery, human resources, pharmaceutical supply chain, health management information systems, sectoral governance, and health financing. These are the six sectoral functions that the World

Health Organization identifies as the key building blocks of a health system (WHO, 2007).

Before starting the substantive comparison of the Tanzanian and Ugandan cases, this chapter reviews the existing literatures that are relevant to both the child survival research question and the health systems development research question. First I survey the literature on child mortality, establishing both that Tanzania and Uganda genuinely differ from each other and from regional averages in their mortality performance over the period in question, and that child mortality is an appropriate summary measure of population health status. Second, I review the health systems literature, and propose a new conceptual framework for understanding the effects of outside intervention on health systems, adapted from Pritchett and Woolcock (2002) and Fukuyama (2004). I then infer predictions from my adaption of the Pritchett/Woolcock/Fukuyama framework, which will be informally tested against the Tanzanian and Ugandan cases in chapters 4 and 6.

In addition to simply attempting to explain differences between the two countries, this dissertation also attempts to contribute to a broader debate in the literature. Both the child survival literature and the health systems literature are marked by two opposing analytical tendencies, which I will call the *institutionalist* view, and the *public health-technocratic* view. If the *public health-technocratic* view is correct, then improvement in health outcomes should be a function of increased resources, and of well-chosen and designed programs funded by those resources. On the other hand, if the *institutionalist* view is correct, then success should be determined less by resource levels and the size and technical sophistication of donor-funded programs, and more by attributes of sectoral

governance and domestic political economy. I also address, in somewhat less detail, the “wealthier is healthier” thesis, which sees mortality levels as a direct function of economic performance. It is these contending theories that provide competing explanations to the question at the heart of this paper: Why have Tanzania and Uganda varied so widely in their ability to use health aid effectively? Are differences better explained by the public-health technocratic view, or the institutionalist view?

The health systems literature is similarly divided between technocratic and institutionalist approaches. Many academic analysts (and a minority of practitioner organizations) stress governance, institutions, and accountability as the primary variable affecting health system development. But the majority of bilateral donors and international health organizations emphasize technocratic factors. I argue that on balance, current thinking and practice in the health systems strengthening is dominated by a “capacity building” model with roots in the public-health technocratic school. However, Pritchett and Woolcock (2002) and Fukuyama (2004) suggest a way to combine the insights of technocratic approaches with institutionalism. It is this approach that I will use as the entry point for my analysis of Tanzania and Uganda’s health system over the last ten years.

II. CHILD SURVIVAL LITERATURE REVIEW

In this section I discuss why child mortality is an appropriate dependent variable of interest, and review the literature on the determinants of child mortality levels and the causes of child mortality declines.

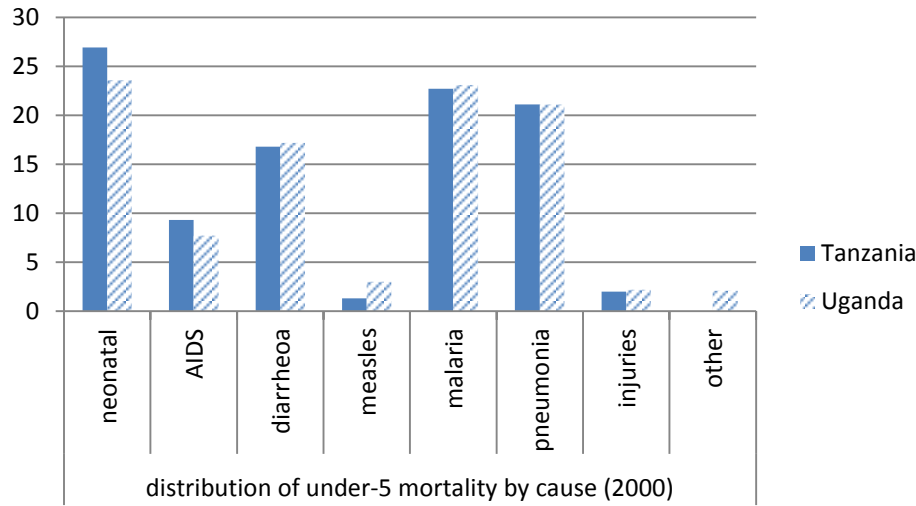
Child mortality as a summary indicator

Although no single summary statistic is ideal as a measure of population health or health system performance (WHO 2000), under-five mortality has traditionally been considered a strong indicator of overall health system performance as well as of socioeconomic development more generally (Boone 1996; Perkins et al, 2001; Lewis 2005). As McGuire (2010) notes, “avoidance of early death is a necessary condition for anything else we might wish to achieve.” Second, there are a number of interventions of proven efficacy against child mortality that could feasibly be taken to scale in countries at Tanzania and Uganda’s income level (Jones et al, 2003), many of which have already been attempted in these countries during the period covered by this study. Third, reduction of child mortality has been adopted as an explicit policy goal by the international community (as Millennium Development Goal Four), and also by Ministries of Health and other political leaders in both countries. Fourth, Gerring et al. (2008) note that because of the greater vulnerability of young children to preventable illness, child survival indicators like infant and under-five mortality “tend to be sensitive to policy interventions and societal behavior changes to a much greater degree than life expectancy.” They also note that historically, life expectancy and child mortality are highly correlated (they calculate a -0.86 Pearson’s r).¹⁶ Fifth, alternative burden of disease summary statistics, which are widely used in policy circles, have implicit distributional and value judgments about the value of preventing mortality for different age groups. Specifically, mortality of children and the elderly are both valued less than the lives of working age adults in the calculation

of the overall disease burden, expressed via disability-adjusted life years or DALYs (Hanson and Anand 1997). I do not take a position on the relative value of burden of disease versus child survival indicators; I only note that the attention to one population age group is more transparent with child survival indicators. Also, given the age structure of developing countries such as Tanzania and Uganda, a significant portion of the population of both countries is under five years of age (18% in Tanzania and 19% in Uganda). Using under-5 mortality also strengthens the comparability of Tanzania and Uganda, since the distribution of causes of under-5 mortality in Tanzania and Uganda is quite similar, according to WHO estimates (see figure 2.3). Finally, it should go without saying that there is an intuitive normative reason to be particularly distressed by deaths of young children.

I use child mortality as a summary indicator not because it captures the totality of health system performance, but rather because health systems are such complex entities that *some* measure of general trends and overall performance is necessary. While there is inevitably some narrowing of focus that comes with focusing on this indicator (HIV/AIDS, for example, is not one of the largest direct causes of child mortality in Tanzania and Uganda), these broader health system issues are addressed by the second research question, which examines the core health system functions of Tanzania and Uganda in detail.

Figure 2.3: Causes of under-5 mortality in Tanzania and Uganda



Source: World Health Organization

Child survival trends and measurement issues in Tanzania and Uganda

It is also important to establish that the Tanzanian experience is genuinely unusual, and genuinely distinct from that of Uganda and most other sub-Saharan African countries.

One reason for confidence that Tanzania’s mortality decline is not a statistical aberration is that the trend between 1996 and 2007 has been captured in five separate DHS surveys: the first in 1996 (which serves as the baseline for this study), the 1999 survey (which showed a statistically insignificant increase from 137 deaths in 1996 per 1,000 to 147 per 1,000), a third survey in 2004 (which showed a reduction from 147 to 112 deaths per 1,000 births), a subsequent survey in 2007 (which showed decline to 91 per 1,000), and the 2010 DHS survey, which shows continued decline to 81 per 1,000. Moreover, in

between each of the DHS point estimates presented in table 1 in the post-1999 period, the decline in mortality was statistically significant.¹⁷

Table 2.1: under 5 mortality estimates and standard errors in Tanzania and Uganda, 1995-2007

Tanzania	Under 5 mortality	standard error	95% confidence interval	
1996	136.5	5.8	124.8	148.1
1999	146.6	9.1	128.4	164.8
2004	112	4.7	102.6	121.5
2007	91.4	4.4	82.7	100.1
Uganda				
1995	147.3	6.1	135.1	159.5
2000	151.5	6.7	135.8	164.8
2006	137	5.0	126.8	146.6

A skeptic might suggest that even with three consecutive DHS surveys showing a defined and relatively dramatic trend, the trend might still somehow be spurious, or perhaps the continuation of a longer term process. However there are several reasons to believe that this is not the case. The first point to note is that there are actually *numerous* estimates of under-5 mortality for the period in question. As Murray et al. (2007) point out, each DHS survey has both mortality estimates for the immediately preceding five year period (this is the most commonly reported and cited under-5 mortality rate), as well as for periods much further in the past, since surveyed women are asked about their complete birth histories, not just about children born in the past five years. So under-5 mortality rates for the period 5-10 years and 10-15 years before the survey date are always reported in the

text of DHS reports. Thus for Tanzania, the 2004 survey also gives a point estimate for 1994-1999 and for 1989-1994. Likewise, the 2007 survey also gives a point estimate for 1997-2002 as well as 1992-1997. (Furthermore, the 2002 Population and Housing Census gives an “indirect” estimate in 2002 of 153 per 1,000.) These further back “recall” estimates are not reported in the DHS text with confidence intervals (which are likely larger than the current point estimates reported with each survey), but they still contain valuable information about mortality trends. When these 10 and 15 year “recall” estimates are combined with the point estimates from successive DHS surveys, the pattern of stagnation in the 1990s followed by a dramatic downward trend in the late 1990s and 2000s becomes is further reinforced. (see figure 3.1 in chapter 3 for graphical representation of this trend combining both data sources). Similarly, by combining both sets of estimates in Uganda, the trend of overall consistency between data sources and the absence of sharp mortality decline is equally clear. Adding in the 2002 Ugandan Population Census indirect estimate (of 156 per 1,000) further increases confidence that the trend has been accurately measured. Another estimate of under-5 mortality in Uganda during this period comes from Bjorkman and Svennson; in 25 communities in 9 districts in 2005 they found a child mortality rate of 144 per 1,000. This figure is not nationally representative (it is not clear whether the districts were randomly selected, and also all households were rural, for example), but nonetheless the point estimate is consistent with the pattern found in the DHS

A more systematic way of using all available DHS data in Tanzania comes from Masanja et al. (2008), who merge all Tanzania DHS surveys since 1992 and re-analyze the

resulting data to create year-by-year point estimates (rather than the 5 year averages that are typically reported by DHS). In doing so, they found the same trend described above: while under 5 mortality remains steady in the 140-150 per 1,000 range for most of the 1990s, beginning in 1999 the rate of decline had increased sharply. The authors find that “the reduction of mortality between 1990 and 1999 was 1.4% per year whereas from 2000 to 2005, this trend accelerated to 10.8% per year.”¹⁸ In addition, the decline is also consistent with similar declines found over the same period by Tanzanian demographic sentinel surveillance sites (DHS 2005). Masanja et al also model *expected* reduction in mortality, given Tanzania’s increase in coverage of key child survival interventions such as insecticide-treated bed nets, Vitamin A supplementation, and Integrated Management of Childhood Illnesses. Their model predicts a 1999-2004 reduction of 33%, relative to the actual 1999-2004 reduction of 24%. The 2004 DHS was also cross-checked by the DHS team in various ways, given that the rate of mortality reduction was faster than expected. They note that the ratio of neonatal to total under-five deaths (which is distorted when very early deaths are underreported) was in line with standard ratios, and the total number of births recorded matches a simultaneous HIV/AIDS prevalence household survey (DHS 2005).¹⁹

Tanzania’s surveys span the period from 1996 to 2007 (or 2009 if we include preliminary results from the most recent survey), while Uganda’s are separated by a slightly different period, from 1995 to 2006. If Uganda’s child mortality decline was rapid but somehow mis-measured in 2000 and 2006, its cumulative decline could be closer to the Tanzanian rate. One possibility is that the conflict in northern Uganda interfered with survey

implementation and thus mortality measurement at various points in time. For example, if conflict-affected regions were not surveyed in 1995 or 2000 (producing an artificially low mortality measurement), but then included in the 2006 survey (producing an accurate measurement), it would appear that there was slow mortality decline when in fact more a more rapid decline occurred. There are two reasons why this is not likely to be driving the trends presented here. First, several highly conflict affected districts were omitted from the 1995 and 2006 survey, but the time trends presented here omit those districts also from the 2006 data. As a result, in effect the picture that is presented of mortality trends in Uganda is actually *Uganda minus the five most conflict-affected districts*. Thus conflict-related survey irregularities could not be driving the results. Second, a time trend of mortality can also be constructed from the point estimate versus the “recall” estimates from the 2006 survey, which did cover the entire country. Since this is comparing mortality rates for the same population sample (which covers the entire country) over the 15 year period in question, there are no omitted regions that might bias the results. Adjusting for the omission of conflict areas improves Uganda’s performance, but not dramatically: the overall under-5 mortality decline goes from 7 percent to 12 percent (using adjusted point estimates) or to 15% (using recall estimates).²⁰

A 12 to 15% percent decline puts Uganda slightly below the sub-Saharan African average: according to IHME data, the average decline in child mortality in sub-Saharan Africa over the period 1996-2006 was 18%. The World Bank and WHO, using slightly different estimation techniques, estimate a 19% decline.²¹ Uganda’s decline was slightly worse than average, in other words, while Tanzania’s was roughly two times greater. It is

true that Tanzania is not the only country to demonstrate rapid progress: other fast mortality decline countries include Zambia, Ethiopia, Malawi, Madagascar, and Rwanda. There were also a number of other countries besides Uganda that showed sluggish mortality decline. However to gain leverage on causal factors, this study sought to focus on relatively similar countries that showed wide variation in their mortality declines.

Differing approaches to explaining child mortality levels and trends

Child mortality, like many health outcomes, is affected by a range of socioeconomic traits, by environmental and behavioral factors, and by the quality and coverage of essential health services. This means that untangling the contributions of each factor is extremely challenging, and all potential contributing factors must be accounted for (Mosley and Chen, 1984). A long-running debate in public health and epidemiology focuses on the relative contribution of economic growth versus provision of public health services in the reduction of mortality and increase in life expectancy. Since rich countries are likely to have low infant mortality, high levels of income (by definition), and high capacity public health sectors, there are clearly endogeneity and reverse causality issues that make it difficult to ascertain the direction of causality. A seminal contribution to this debate came from Preston (1975), who noted that the relationship between income and mortality is strong across countries and across time, but that the “Preston curve” that illustrates this relationship shifts out over time (i.e. mortality reduction gets “cheaper” over time as technology progresses). This has been interpreted as suggesting a role for factors beyond income, including new technologies and public health programs (Cutler,

Deaton, and Lleras-Muney 2005). Similarly, Dreze and Sen call attention to the dramatic differences between India and China, with China's mortality reduction rapidly outpacing that of India well before either country had started its economic growth (Sen, 1999). Caldwell and others cite examples such as Sri Lanka, Cuba, Jamaica, and Costa Rica, which have achieved low levels of mortality at low levels of income, suggesting that the activities of government can play an important role.

The "Wealthier is Healthier" School

The strongest challenge to the view that emphasizes public health services comes from a paper by Summers and Pritchett (1996), entitled "Wealthier is Healthier." The authors use an instrumental variables specification to show an independent relationship between growth rates and infant mortality reduction.²² Several years later, Pritchett and co-author Dean Filmer (1999) find that in fact 90% of the cross country variation in under-5 mortality levels can be explained by just five variables: income per capita, female education, income inequality, ethno-linguistic fractionalization, and religion.²³ The intuition behind this result was bolstered by the findings, from the same paper, that increased spending on health by governments did not appear to have any relationship to improved health outcomes.²⁴ The theory behind this is that economic growth enables individuals to achieve better health outcomes through their own agency: not only by purchasing private medical care, but also by drinking cleaner water, improving their sanitation situation, perhaps by buying bed nets or other health products, and taking other key preventive steps. This, the theory goes, is a much more effective route to improved health than public investment, since it sidesteps all the principle-agent problems

associated with public health provision. In addition, growth increases the resource base that governments can tax and thereby contribute to government health provision as well.

It is indeed true that economic variables capture much of the variation in *levels* of mortality; this is a robust result that comes up regularly in cross country analysis. It also holds for sub-Saharan Africa over the period of this study.²⁵ However, this is not dispositive for the purposes of this study, since the outcome of interest is the *change* in mortality, rather than the absolute *level* of mortality. In the empirical literature, there is a weaker consensus about the effect of growth on changes in mortality levels. An analogy can be drawn to the cross-country institutions and growth literature: while stronger institutions are quite clearly strongly correlated with higher income per capita, it does not necessarily hold that over a given time period, measures to improve institutional quality will increase economic growth (Rodrik, 2005). The process can be highly uncertain; there may be no short run relationship between periods of institutional strengthening and growth. Only over very long periods of time can the relationship that is apparent in a “levels” regression be reliably detected in a “changes” specification.

The same kind of relationship may well hold for income and under-5 mortality. McGuire (2010), for example, finds a strong relationship between income and the level of child mortality, but a much weaker relationship between change in income (or growth) and change in mortality levels. A similar relationship exists in sub-Saharan Africa over this study’s time period.²⁶ And in his case studies, McGuire also finds that growth rates are not closely correlated to mortality decline in his eight Asian and Latin American case

studies. Comparison of Tanzania and Uganda provides an interesting test of the relationship between growth and mortality reduction, since there is some divergence in the rates of economic growth, and dramatic divergence in rates of poverty reduction, between the two countries.

In line with the model of mortality presented by Mosley and Chen, and the cross country evidence generated by the “wealthier is healthier” school, this study will consider the potential effect of changes in the broader economic, environmental and social situation that may have affected mortality outcomes, such as changes in income per capita, poverty levels, access to clean water, reach of sanitation systems, levels of female education, and HIV prevalence (Victoria et al 2005). Both Tanzania and Uganda have had a series of Living Standards Measurement Surveys over this period, which make it possible to compare the evolution of poverty, sanitation, school enrollment, literacy, and other similar indicators. Since the survey data show that underlying socioeconomic and environmental factors improved much more *in Uganda* than in Tanzania over the time frame being considered here, at the same time that significant resources were invested in health by donors and the governments themselves, health system performance (or lack thereof) likely played an important role in explaining variation between the two cases. The evidence strongly points away from a “wealthier is healthier” dynamic, and as a result this theory will not be discussed at great length. Both the direction and the magnitudes of the changes in mortality suggest a situation analogous to that found by Caldwell (1986) in his classic study of rapid mortality declines in Costa Rica, Sri Lanka, and the Indian state of Kerala:

The value of studying breakthroughs, especially when mortality change occurred over such a short period that neither educational nor social attitudes could alter greatly, is that of a controlled experiment. There is a high probability that most of the change in mortality level can be attributed to additional health inputs.

I argue that it is plausible to infer that reasons for the differences in health outcomes can also be found in the size, scope, and nature of interventions implemented by the health systems of the two countries. It is these differences will be the focus of this study.

Differences will be examined both at the macro or system level, with respect to overall health sector budgets, policies and major initiatives (such as decentralization), as well as for specific interventions. In particular, I will focus on the 18 proven contributors to child mortality reduction that were identified by Jones et al (2003) under the aegis of the Bellagio Child Survival Study Group. As table 2.2 below show, nationally representative survey data tracking changes in coverage levels of these interventions over the period in question is available for 13 of the 18 interventions, and partial coverage is available for another two interventions.²⁷

Table 2.2: Child survival interventions and data coverage for Tanzania and Uganda, 1999-2007

	Data availability	Source
Insecticide-treated bed nets	Yes	DHS
Breastfeeding	Yes	DHS
PMTCT	Yes	DHS, PEPFAR
malaria treatment	Yes	DHS
antibiotics for dysentery	Partial	Service Provision Assessment
antibiotics for pneumonia	Partial	Service Provision Assessment
antibiotics for sepsis	No	None

Hib vaccine	Yes	DHS
measles vaccine	Yes	DHS
clean delivery location	Yes	DHS
complementary feeding	Yes	DHS
water/sanitation/hygiene	Yes	Household Budget Surveys, DHS
Zinc	No	None
Vitamin A	Yes	DHS
antenatal steroids	No	None
tetanus toxoid (2 doses)	Yes	DHS
IPT (2 doses)	Yes	DHS
Oral rehydration therapy	Yes	DHS

Even if it is possible to show that changes in child survival are highly correlated with the implementation of various key child survival interventions, this just pushes the explanation back one level: *Why* do some countries implement more effective health programs than others? If health is a technocratic, largely apolitical sector, then the task of building a functioning health sector is a technical task that requires resources and expertise. Countries that register major health-related gains will be those that receive large infusions of resources and well-designed technical assistance. Differences among the countries will likely be found in the details of which interventions were provided, the scale on which they were rolled out, the quality of the programs, and other related factors. The *public health-technocratic* literature, discussed below, largely views the health system in this way. On the other hand, if the health sector is in fact a deeply political enterprise, and subject to the same cross-pressures and forces as other public sector

agencies, then performance will be determined by deeper political and governance-related factors. Countries that strengthen their health sector performance will be those where the underlying political equilibrium is hospitable towards provision of health services. Many institutionalist political scientists and economists view public sector outputs, including health services, in this way.

The Institutional School

Health sector capacity is a subset of the broader category of *state capacity*; which has been widely studied in sub-Saharan Africa. A range of concepts have been adduced to explain state weakness in Africa, from various aspects of the colonial legacy (Young, 1994; Mamdani 1996; Engelbert 2000) to low population density (Herbst 2000) to the “resource curse” (Collier and Hoeffler 2005) to the persistence of ethnic and sub-national identities (Migdal 1988, Easterly and Levine 1997). Perhaps the central concept in the literature on state weakness in Africa is *neopatrimonialism*, whereby a formal Weberian bureaucracy exists side-by side with informal patron-client relationships. These personalistic, reciprocal relationships are sustained by the use of public resources and jobs for private gain and to maintain political power. Over time they erode the state’s ability to deliver public services in an impersonal and rule-bound manner (Van de Walle and Bratton, 1997).

While this state capacity literature may give some reason for pessimism about health service delivery, it does not address health directly. The aid effectiveness literature also

addresses health sector capacity indirectly. In recent years, a rough consensus began to form around the idea that aid is effective only in well-governed countries (Burnside and Dollar 1998).²⁸ According to this view, aid to poorly-governed, neopatrimonial states will likely be wasted in the absence of meaningful institutional reform. Moreover, donors came to believe that there must be internally-driven demand for reforms, rather than external pressure via donor conditionality. Yet this shift in ideas coincided with a sharp increase in the quantity of aid for social services (mostly health) in the past decade, even as it was clear that for most recipient countries, ownership and internally-generated demand for public services could not be assumed. A paradox emerged: Just as donors had converged around the idea that selectivity and good governance were keys to effective aid, they began to scale up aid for health with little regard to selectivity or governance. (The Global Fund for AIDS, Tuberculosis and Malaria is a partial exception to this trend).

This apparent contradiction has not been well explained. In fact, although a general academic consensus may hold that quality of governance is likely the underlying driver of development outcomes, there is a relatively thin literature on the relationship between governance and health service delivery. In particular, case studies that link institutional factors to health outcomes at the country level have been relatively rare.

The most comprehensive literature relating institutional and political economy factors to health outcomes deals with health sector reform (Frenk 1994; Cassels 1995). A common theme in this literature (which has deep similarities to the 1980s and 1990s literature on

economic policy reform) is that in many developing countries, urban elites and civil servants capture the benefits of public sector health expenditures, resulting in poor service provision for the rural poor. In his case studies of Brazil and Argentina, for example, McGuire shows that this urban formal sector coalition was a major reason for the regressive nature of public health expenditures in these countries in the 1970s and 1980s. Filmer, Pritchett, and Summers also cite this as a key reason why they find no link between increased expenditures on health care and improved outcomes in their widely-cited 1997 paper. Given this capture of health policy by interest groups, reformist governments need to summon political will to break these coalitions and finance primary health care for the rural poor. However, it is unclear how well this literature applies to sub-Saharan Africa. As Van de Walle has argued, post-colonial African states are unique in how little they are constrained by interest groups and civil society. This applies to the health sector: All over Africa, for example, governments cut real health worker salaries dramatically in the 1980s and 1990s, which is not consistent with formal sector/public sector union capture of the policy process. The Tanzania and Uganda cases suggest that in an environment of weak civil society, few health-focused interest groups, and heavy reliance on external health funding, the only powerful interest group that many African governments have to placate in health sector policymaking is the donor community. This suggests that existing models for health sector reform in the sub-Saharan African context are incomplete.

Another strand of research on the political economy of health services in Africa has emerged from study of the HIV/AIDS crisis. This has spurred some attention to country-

level variation in responses to the epidemic (Boone and Batsell 2001, De Waal 2006, Patterson 2006, Jones 2004; Gizelis 2004; Putzel 2004; Lieberman 2009). There is also a small literature on the political economy of broader health system performance, focused on mortality outcomes as the dependent variable. Shiffman (2007) examines the politics of maternal mortality across five countries, comparing two successful cases (Honduras and Indonesia) with one intermediate case (India) and two unsuccessful cases (Guatemala and Nigeria). Tendler (1997) examines the political economy of a community health worker program that reduced infant mortality sharply in northeastern Brazil. Levine et al. (2004) provide case studies of 17 successful public health interventions at the country level, emphasizing both political will and technological innovation. Perhaps the clearest models for this study are Caldwell (1986) and McGuire (2010). Caldwell examined Sri Lanka, Costa Rica, and the Indian state of Kerala - three societies that had achieved exceptionally low infant mortality rates and high life expectancy relative to their incomes. McGuire examines eight case studies (four from Latin America, four from East Asia) from 1960-2005, to determine the drivers of differing performance on infant mortality reduction. McGuire uses these case studies to informally test the “wealthier is healthier” thesis, finding that faster economic growth does not explain differences in infant mortality decline. Democracy, regime dynamics, and idiosyncratic factors such as the level of bureaucratic initiative all matter.

There is also a cross country empirical literature on the relationship between health outcomes and institutional factors: Boone (1996), Przeworski et al (2000), Navia and Zweifel (2000), Lake and Baum (2004), McGuire (2005), Gerring (2005), Kiessling

(2009) and Kudamatsu (2009) all find some association between democracy and child mortality.²⁹ Lewis (2006) shows associations between broader governance measures and both under-5 mortality and measles immunization coverage; Wagstaff and Claeson (2005) and Rajkumar and Swaroop (2002) draw similar conclusions. Gauri and Khalegian (2002) examines the determinants of immunization, finding again that overall levels of development and institutional quality (although not democracy) are strongly associated.

There is also a rapidly growing micro literature: In recent years, applied microeconomists have begun to examine the political economy of service delivery at the local level via randomized controlled trials. In the health sector, there are several such studies. Banerjee and Duflo (2006) review a range of these experiments, showing that while a time-stamped camera monitoring system linked to teacher pay was successful in reducing teacher absenteeism in Rajasthan, community monitoring of nurse attendance with was ineffective. Theorizing that the failure of this program may have been linked to collective action constraints, Bjorkman and Svensson (2009) evaluate a program in Uganda that facilitated community meetings for mobilization and information provision in a selection of health clinic catchment areas. This relatively modest facilitation of “bottom up” supervision was highly effective, resulting in a 33% decline in child mortality.

The public health-technocratic school

While institutionalism may be the mainstream approach in the academic economics and political science world, the *public health-technocratic* school is dominant in the practice of the global health world, especially in multilateral health organizations like the WHO and UNICEF, and in the health programs of large bilateral health donors. In this view, health is a technical sector, implemented by credentialed experts in an autonomous realm free from political interference. Organizational reforms, technical assistance, increased resources, and improved biomedical interventions can therefore improve health outcomes. The binding constraints are resources and expertise, and progress occurs when donors provide these scarce inputs. The vast majority of health-focused development projects follow this logic. Similarly, policy documents published by major health sector donors often follow this logic; see for example the discussion of capacity building in PEPFAR annual reports, which emphasizes training programs and facility refurbishment (OGAC 2009).

To understand how this school of thought came to its current dominant position, it is useful to track how thinking about international health has evolved over time. The main reference points can be marked by three influential international reports, the 1978 “Alma Ata Declaration,” the 1993 World Development Report, and the 2001 Commission on Macroeconomics and Health report. The Alma Ata Declaration of 1978 launched the “health for all” primary health care movement, capturing a new consensus about the need for developing countries to prioritize low-cost primary care interventions. The iconic figures of this movement were the “barefoot doctors” providing basic primary care throughout the Chinese countryside.³⁰ Unfortunately, the Alma Ata statement was

published just before the developing world economic crisis of the 1980s that decimated the health sector in Africa. Its recommendations were never fully implemented, as health took a back seat to structural adjustment and economic reform. Fifteen years later the World Bank's 1993 World Development Report put health back on the international agenda, placing its major focus on resource allocation. The Bank argued that countries could improve the efficiency and equity of their health system by focusing on highly cost-effective interventions in the form of an "essential health package." It also stressed the need for strategic use of the private sector in health care, as well as organizational reforms such as purchaser/provider splits, decentralization, and increased use of contracting (Cassell 1995).

The Commission on Macroeconomics and Health report (2001) is the next turning point, marking the rise of the global health movement and the current situation of large scale aid for health. This report provided the intellectual framework for a major infusion of resources into health, mostly targeted at HIV/AIDS, and to a lesser extent malaria, tuberculosis, and other infectious diseases. This aid scale up was largely implemented via "vertical programs" such as PEPFAR and the Global Fund. When these resources began to be delivered via vertical, disease-specific programs, the stage was set for another round of debate about health systems, this time framed as a debate between vertical and "horizontal" aid programs.³¹ This debate was perhaps inevitable because in the decade prior to the publication of the CMH report, many health sector specialists had come to view coordinated, on-budget sectoral support (referred to as "SWAPs") as the preferred mechanism for delivering health aid.

The Commission on Macroeconomics and Health (CMH) report marks the dominance of the public health-technocratic school in international health policy and practice in two ways. First, while it in some ways integrated the lessons of the earlier paradigms, its overall thrust is in line with public health-technocratic assumptions.³² Major emphasis is placed on increased resources, above all, followed by the increased use of information technology, increased numbers and training of health workers, and use of technical assistance to transfer managerial “best practice” to recipient countries. Second, many proponents of the CMH approach realized that to sustain their proposed interventions, deeper system strengthening was needed. Yet as the next section outlines, the “health system strengthening” policies that were adopted in many cases look very similar to the old public health-technocratic recommendations. In many ways, the institutionalism versus public health-technocratic debate is recapitulated in embryonic debate over health system strengthening. The second research question of this study addresses this debate.

III. HEALTH SECTOR FUNCTIONS LITERATURE REVIEW

The above discussion sets the stage for the cross-country comparison section of the dissertation, by outlining competing theories of the drivers of health sector progress and mortality decline. However, this study has a second area of inquiry, which seeks to improve our understanding of the process of health system strengthening. A similar divide, between institutional and technocratic approaches, characterizes this literature. In this section, I first continue the previous section’s discussion of the existing literature on

health systems, and argue that this literature is flawed in two ways: first, it treats institutions in a purely technocratic, apolitical way, and second, it is largely descriptive, and devoid of theory with testable predictions. Second, I propose a different conceptual apparatus, adapted from Pritchett and Woolcock (2002) and Fukuyama (2004), that generates testable predictions. Third, I infer predictions from my adaption of the Pritchett/Woolcock/Fukuyama theories. The material that will provide the grist for this test will be detailed narratives of the six primary health system functions (WHO, 2007) in the two countries over the period from 1996-2009. Finally, I discuss a final health systems-related controversy in recent years: the debate over whether PEPFAR and the Global Fund are strengthening or weakening health systems in countries where they operate.

The existing literature

The broad contours of thinking about health systems – from Alma Ata through the 1993 World Development Report to today’s debates between vertical and horizontal approaches – were outlined in the previous section. In this section I highlight aspects of the literature that are relevant for this dissertation.

Two things stand out in current discussions of health system strengthening. The first is that it is currently a very high priority, at least rhetorically, for the donor community. The largest global health donors (the US government, the Global Fund, the World Bank, GAVI) have recently shifted increased resources and programming towards systems,

rather than disease-specific programs.³³ The US government for example, has recently supplemented its flagship HIV/AIDS program, PEPFAR, with the Global Health Initiative, which has an explicit health systems focus. The Global Fund has likewise devoted new resources for health systems grants.

The second conclusion from the health systems literature is that practice has gotten out in front of theory. Donors are moving into a realm where there is little systematic knowledge about what works. Nor is there even a great deal of theory about what experts believe *should* work. Most of the frequently-cited case studies of successful system reforms come from middle-income countries such as Mexico or Indonesia, with limited relevance for most sub-Saharan African countries. Literature reviews and expert summaries continually emphasize that the evidence base is extremely limited. A few high profile examples from the literature demonstrate this. In 2000, Richard Feachem introduced that year's WHO World Health Report (entitled *Health Systems: Improving Performance*) in the WHO's flagship journal by noting that with regard to health systems, "the evidence is weak, no country has discovered an ideal model, and appropriate policies differ widely in different country settings."³⁴ In 2004, British medical journal *The Lancet* published a symposium on the state of knowledge about health systems (timed to coincide with an international ministerial conference on the same topic in Mexico) which emphasized that the current knowledge base was insufficient. A follow up *Lancet* article four years later confirmed that progress in generating usable knowledge since the 2004 conference had been slow (Bennett et al. 2008). On a similar note, the authoritative *Disease Control Priorities Project* (Mills et al 2006) states that "the current body of

knowledge [on health systems] represents a largely ad-hoc and disjointed collection of facts, figures, and points of view.” More recently, De Savigny and Adam (2010) note that “Despite strong global consensus on the need to strengthen health systems, there is no established framework for doing so in developing countries, and no formula to apply or package of interventions to implement.”

If there is little theory about what works, what, then, are health systems-oriented donors spending their money on? The shift to a health systems focus is quite recent, so it is in some sense too soon to tell. Thus far, it appears to be a mixed bag, with some funders moving ahead on innovative approaches while others seem poised to re-invent the “capacity building” wheel that the broader development community has already tested and found wanting over the past generation. The vast majority of proposals for health system strengthening fall into three categories. The least promising are straightforward capacity building or training exercises. Others are projects supporting cross-cutting “system” functions such as the supply chain or the health management information system. A third category seeks to address system-level constraints by shifting incentives in some way. These approaches are not easily summarized but sometimes include performance-based financing or support for sectoral accountability mechanisms. The first approach seems unpromising, both because of the general failure of supply-driven capacity building approaches, and because African health systems – especially vertical fund recipient countries – are already overrun with training, workshops, seminars, and similar manifestations of the “*per diem* culture.” The second approach is reasonable; most countries do have a human resources crisis, and supply chain and information

systems need strengthening. But this approach risks being overly supply- and donor-driven. Variations of all three approaches to health system strengthening programs can be seen in Tanzania and Uganda.

A different approach to the health systems problem starts with Pritchett and Woolcock (2002), World Bank (2004), and Fukuyama (2004). This literature considers the public sector more generally, rather than the health sector specifically, but it combines insights from both the institutionalist and public health schools. From the institutionalist school, it focuses on incentives and the agency problems inherent in public bureaucracies. From the public health-technocratic school, it focuses on specific conditions under which direct, supply-driven, technocratic aid interventions are likely to be successful.

To start out, consider Pritchett and Woolcock (hereafter PW). They argue that public sector services fail because of principle-agent problems, which are understood as a fundamental characteristic of hierarchy. They also note that there are a range of potential solutions to these problems, such as contracting out, inculcation of public service norms, performance-based financing, and decentralization or community ownership. The primary lever for improving system performance is thus not improved training for service providers or managers or increased resources, but rather changes in the incentives and accountability relationships that different actors in the system face.

So far, these are standard conclusions of the institutionalist school. However, PW go beyond this, by noting that different public services (and different job functions within

single organizations) have different classes of agency problems, depending on the nature of the service or job function. Therefore the solution to these agency problems must be matched closely to the nature of the service itself. They then classify these agency problems based on the categories of *transaction intensity* and *discretion*. Transaction intensity refers simply to the frequency with which a service is delivered: education services are highly transaction intensive, for example since they happen every day in thousands of schools across a country, while fiscal policy is not, since key decisions happen relatively infrequently. Discretionary services “are discretionary to the extent that their delivery requires decisions by providers to be made on the basis of information that is important but inherently imperfectly specified and incomplete, thereby rendering them unable to be mechanized.” Non-discretionary services, by contrast, can be routinized and thus delivered by non-expert providers who follow a simple script or routine. They conclude that providing transaction-intensive, discretionary services (of which health and education are the two key examples) is “the mother of all institutional and organizational design problems.”

Fukuyama (2004) alters this framework slightly, substituting the category of “specificity” in place of discretion; specificity describes whether a service output can be easily monitored or not.³⁵ His conclusions are similar: services with high transaction intensity but low specificity are again the most difficult for states to implement (although in a 2007 paper based on observation of several Western Pacific cases, he cites the health sector as a potential exception to this logic). I will follow Fukuyama in replacing discretion with specificity for the following reason: discretionary services are difficult to implement

because they cannot be routinized. But it is not clear that work practices *need* to be routinized. If the government can monitor and measure performance, it can set targets and let different organizations or individuals find their own way to reach them. But for this to happen, measurability or specificity is key.

Theory adaption

From these related frameworks, we can infer the following. First, health services are likely to be difficult to improve, since they largely fall in the transaction-intensive yet discretionary/low specificity category. In PWF's initial framework, health and education are prime examples of difficult-to-improve services. By contrast central banking is offered as a clear example of a high specificity, low transaction intensity (and therefore highly tractable) state function.

However, the framework as it exists, suggesting that health services are highly resistant to improvement, is of limited use to policymakers and donors who have already decided to work in health. It is my contention that the framework can also be adapted further, to generate additional predictions about the various functions *within the health system*. If this exercise is successful, it could provide a useful framework for organizing thinking about efforts to strengthen health systems. I therefore attempt to create new categories by disaggregating the health sector into six different functions. In doing so, I follow the WHO classification of the health sector into the functions of service delivery, products/technology, human resources for health, health information systems, health

financing, and leadership/governance. I then classify these services according to the specificity/transaction intensity framework. Below I present a matrix of the six principle sectoral functions matched with a preliminary classification on the specificity/transaction-intensity scale. Two functions (governance and service delivery) are further broken down into sub-functions.³⁶ The section below discusses why each function was placed in its position in the matrix.

Table 2.3: Sectoral functions classified by specificity and transaction intensity

Function	sub function	Specificity	transaction intensity
governance			
	budgeting, planning, policymaking	High	low
	supervision and monitoring	Low	high
	regulation of private sector and non-profit health providers	High	Low
service delivery			
	population-oriented prevention	Medium	low
	family-oriented self-care	Medium	low
	Individual-oriented clinical care: access	High	Low
	Individual-oriented clinical care: quality of care	Low	high
supply chain		High	medium-low
human resources		high	low
information systems		Medium-low	high
Financing		High	medium

This approach has the following advantages. First, it adapts the Pritchett, Woolcock and Fukuyama (hereafter, PWF) framework to the health sector, offering a new set of concepts for understanding health system strengthening. Second, the implications of this theory can be informally tested via the two case studies. The adapted framework predicts that some sectoral functions should be relatively likely to improve, such as the budgeting, planning, and policymaking aspects of governance, the supply chain, the human resources system, and population-oriented prevention activities, while other functions should lag, such as the HMIS, the curative care component of service delivery, and the monitoring/supervision aspect of governance. Of course, many factors will affect the relative progress of a given sectoral function, including the actual priority placed upon it by the country and donors, and idiosyncratic factors such as the quality and commitment of officials in key sectoral positions. Nonetheless, applying the theory may generate unexpected insights about the nature of health system improvement efforts.

Service delivery

Service delivery is in some ways a catch-all category, and the most challenging to measure or categorize. Even if all other aspects of the health system are functioning well, and health workers, medicines, and funding are all delivered to the point of service, there is still much that can go wrong in the actual process of service delivery. What happens at the service delivery level is a major component of both how much medical care is delivered, and the quality of that care.

At this level, transaction intensity is clearly high: 26% of Tanzanian households and 36% of Uganda households have had a sick member in a given month, and most sicknesses result in a visit to a health facility (HBS 2007, UNHS 2010). Yet service delivery is such a broad category that some further disaggregation is necessary. The four components of service delivery presented in table 3 come from the 2004 World Development Report, which generates these categories based on the Pritchett/Woolcock variables of transaction intensity and discretion. Their categories are population-oriented outreach services (transaction intensive but non-discretionary), family-oriented self-care (non-discretionary but higher transaction intensity), and individual-oriented clinical care (highly transaction intensive and highly discretionary).³⁷ Immunization is an example of the first category: it must be done several times in the life of each child but can be completely routinized and centralized. Support for household-level practices like bed net use or use of oral rehydration therapy (ORT) to treat diarrheal children is an example of the second category: provision of basic information can be routinized but must be done continuously. Curative care at the facility level is the third category: it is done tens of thousands of times per day, but often requires specialized, context-specific skills of diagnosis and treatment. This suggests a set of predictions for the service delivery level in Tanzania and Uganda. We should expect to see strongest gains in population-oriented services like immunization, intermediate gains in self-care (like bed nets or ORT usage) and weakest progress in clinical care.

These subcategories from World Bank (2004) are based on the Pritchett/Woolcock framework, meaning that they use discretion, rather than specificity, as their second

criterion (in addition to transaction intensity). This is useful for these functions because specificity of each of these categories is quite low. Governments have only indirect methods of learning about developments in all three service delivery categories. Household surveys give evidence of access to health services, and evidence of outcomes. Routine data from the HMIS also captures service outputs, but does not capture quality and is largely unreliable in both countries. Thus while governments have at least some knowledge of coverage of key interventions at the clinical care level, they have the least amount of knowledge about quality of care, which is most relevant for category of individual-oriented clinical care.³⁸ However, detailed facility surveys, such as the USAID-funded Service Provision Assessments that were carried out in both Tanzania and Uganda in 2006-2007 give an informative snapshot of quality of clinical care at the facility level.

Thus for a picture of the clinical care function, this dissertation will consider measures of *access* to services and *quality* of services. Governments generally improve access in two ways: by building more facilities closer to the population (often in rural areas), or by reducing financial barriers to access. These are both low transaction intensity, high specificity activities. By contrast, efforts to improve quality of care have very high transaction intensity and very low specificity.

Supply chain

The pharmaceutical supply chain corresponds to the “products/technology” dimension in the WHO typology. There are five main tasks that comprise supply chain management: Quantification/forecasting, procurement, storage, distribution, and information systems (Oomman et al, 2008). Specificity is relatively high because the agencies charged with supply chain management (Medical Stores Department in Tanzania and National Medical Stores in Uganda) receive quarterly or bi-monthly orders for medicines, and are thus aware when facilities experience stock outs of essential medicines. (In Tanzania, for example, the MSD collects annual information about drug expiration, while Uganda tracks the percentage of facilities that experience stock outs.) Transaction intensity is medium-low because of the frequency of the various tasks. The Tanzanian case illustrates this well: forecasting and quantification happen on a quarterly basis according to a set formula,³⁹ while distribution happens on a quarterly basis for a given district, but on a staggered schedule so that every month, shipments go out to one-third of the districts. The most transaction intensive portion of the tasks occurs when districts receive their shipments and must distribute the contents to the various health centers and dispensaries in the district. Storage is in some sense a continuous activity, but also passive and routine relative to other tasks. Overall this collection of tasks clearly falls in the high specificity, low transaction –intensity section of the matrix. If our conceptual apparatus is correct, the supply chain should have improved in both countries.

Human resources

After years of neglect, the topic of human resources for health (HRH) is enjoying a renaissance in the donor world (Joint Learning Initiative 2005; WHO 2006). The key human resources-related tasks are projecting human resource needs, educating and training health workers, assigning them to facilities, compensating them, and monitoring their performance. Human resource projection, compensation, and assignment are low transaction intensity, high specificity tasks. Being aware of health worker stocks and flows is a byproduct of routine administration. If administrative data that is used for payroll is kept reasonably up to date, for example, then the government should have an accurate picture of the size and distribution of its health workforce. (Both Tanzania and Uganda have conducted recent censuses of the health workforce.) This data is often incomplete, but at least in theory, information is available about the number, distribution and density of health workers throughout the country. If a country can add to this information about how many health worker graduates are produced in a given year, and how much attrition takes place (for which payroll records are again useful), then projections can be made for desired throughput of health workers, as well as the targeted distribution in terms of skill mix and geographic assignment. Targeting a number, and then increasing the production of workers to the necessary level, is therefore in theory a very achievable task.

Likewise, implementing a functional medical education system is also a relatively low transaction intensity, high specificity task: performance is clearly measurable, and education occurs at a number of highly specialized institutions.⁴⁰ (In both countries,

religious hospitals operate a large portion of nursing schools). Paying health workers is at most a monthly task, thus of similarly low transaction intensity and high specificity.

Performance monitoring, on the other hand, is both low specificity and high transaction-intensity, and is clearly the most difficult aspect of human resources management.

Indeed, if this was included under the category of human resources management, it would alter the placement of this category in the matrix, and it would become one of the most difficult to improve. For the purposes of this exercise, however, this function will be considered under the governance category. I categorize it in this way because in some sense, the problem of monitoring agents at various levels of bureaucratic hierarchy is *the* fundamental problem of governance.⁴¹

Sectoral governance

Governance is a complex, multidimensional concept and is therefore difficult to classify. On one hand, governance includes policy formulation and resource allocation. While these decisions are important and analytically challenging, they can be made by a small group of well-trained specialists in the Ministry. Budgetary decisions, which are closely related to policy, include a wider range of officials across Ministries, but are still elite-level decisions. For many of these cases it may be sufficient to have competent officials in the Permanent Secretary, Chief Medical Officer, and major department head positions, as well as in specialized policy offices the Policy and Planning department. Furthermore, at a general level the principles of sound health policy, responsible planning and

equitable resource allocation are well-understood and it can be observed whether the responsible officials are competent at their jobs. Thus *planning, budgeting, and policy formation* are all relatively low transaction intensity, high specificity activities.

Governance also involves the actions that the various “principals” within the bureaucratic hierarchy take to ensure that subordinates do not shirk their duties. This activity requires activity at virtually every level of the system, on a regular basis; it is clearly a high transaction intensity function. Politicians oversee the Minister; Ministers and deputy Ministers oversee senior civil servants such as the Permanent Secretary and the Chief Medical Officer; these leaders oversee the rest of the Ministry. At the district level, District Health Teams oversee facilities with their areas of responsibility, and within facilities, responsible officials oversee subordinates. Tanzania has an additional level of technical oversight above the district (Regional Health Management Teams) while Uganda has a level below the district (the Health Sub-district). At the highest level, monitoring is not particularly transaction intensive, because the number of relevant officials is quite small. At the district and facility levels, the picture changes. In theory, each of the several thousand health facilities would be visited on a regular basis by district level officials, while supervisors would monitor subordinates in their facilities quite closely. This increases the transaction intensity notably. Moreover, proper monitoring and supervision is a fairly discretionary task. It can and often is routinized through the creation of standardized supervisory checklists, but the difference between meaningful supervision and routine box checking is hard to specify. Furthermore, given

that many tasks that are being monitored are *themselves* are low specificity, monitoring these tasks is therefore a relatively low specificity activity.⁴²

The final component of sectoral governance is regulation of the private and non-profit health sector. The private sector in general, and non-profit religious health providers in particular, play a large role in health service provision in both Uganda and Tanzania. In fact, in both countries they play a semi-official role: In Tanzania for example, many religious hospitals are supported by the government and are made the official government “District-Designated Hospital,” while in Uganda, religious hospitals and dispensaries receive a direct budgetary subvention from the government on a quarterly basis. This study deals primarily with the efforts of governments to improve health. Therefore there will not be a heavy focus on the private sector *per se*.⁴³ Rather, the private sector will be considered in the context of overall sectoral governance, since regulation and oversight of the private sector is a responsibility of government. In the PWF framework, regulation is a low transaction-intensity, relatively high-specificity function (consisting of the promulgation of legislation and administrative directives, and standards for private health sector activity), while oversight of private providers is similar in nature to the challenges of oversight of public providers.

To summarize, we should expect that the planning, policymaking (including regulatory policy) and budgetary functions of sectoral governance would be relatively amenable to improvement, while the monitoring and supervision functions will likely lag.

Monitoring and Evaluation

The above dilemma is closely related to the functioning of the Health Management Information System (HMIS). While wealthy countries capture data on key outcomes such as mortality through vital registration systems, these systems have low coverage in most developing countries, leaving them reliant on either routine data from health service providers (known as the Health Management Information System or HMIS), or on information from periodic, donor-financed household surveys. Surveys are infrequent (around once every 5 years in many African countries), leaving the HMIS as the preferred source of current data. However, for an HMIS to work correctly, front line service providers must correctly and comprehensively fill in paper registers for each service provided, this data must be aggregated and then collected at the district level, and then sent up to the central Ministry level at monthly or quarterly intervals. A further problem is that the HMIS only captures activities that take place in health facilities. Nor are all data simple to gather: Some key indicators, such as those related to malaria case management for example, may require clinical or laboratory tests (WHO, 2008). Finally, for true comprehensiveness, health services data must be collected from the non-governmental facilities that in many African countries make up a large portion of the health system.

These problems together make operating health information systems a highly transaction-intensive activity, second perhaps only to clinical care. Specificity is also troublesome. While it is straightforward to observe whether facilities and districts have delivered their

HMIS reports on time, there is no obvious feedback system to inform the Ministry if front line providers are filling out forms accurately. Audits are possible, although resource and time-intensive. Thus ministries of health are typically aware that their HMIS produces incomplete information, but do not have specific and detailed knowledge about these gaps. Thus information systems can be understood as a high transaction intensity activity, medium-low specificity task.

Health financing

The health financing system determines who pays for health services and how they are paid for. It therefore has direct effects on the efficiency of the system, via the incentives it creates for service providers, and system equity, since out-of-pocket health expenditures are typically a significant burden on the poor. Key distinctions with respect to financing are between pre-paid and out-of-pocket expenditures, between private and government payment, and between government and donor funding. The key tasks for the government, or for designated third party entities, are to collect resources, pool them, and to purchase interventions (WHO, 2000).

In Tanzania and Uganda, public resources for health care come from general tax revenue, donor contributions (both to the overall budget, and to the health budget specifically), and from wage deductions and pre-payments by citizens participating in government-sponsored health insurance. Collection of general taxes is transaction-intensive, but is not a health sector function per se. Generating resources from donors is certainly transaction

intensive in some sense, given the proliferation of donors and projects, and the onerous reporting requirements that often accompany donor funds. That said, dealing with even the most intrusive donors should be significantly less transaction intensive than high frequency activities like clinical service delivery and HMIS. Generating funds for government-sponsored health insurance is likewise a moderately transaction-intensive task: in the case of Tanzania's Community Health Fund, between 5,000 and 10,000 Tanzanian shillings (Tsh) must be collected once a year from every member of the fund. Participation is voluntary, however, so collection is not coercive as taxation is. It is also not particularly transaction intense if very few people participate, as is currently the case in both countries.⁴⁴ Low participation in turn undermines the pooling function, which is also passive and not transaction-intensive. Finally, expenditure of resources is also a low transaction intensity activity: once funds are collected from participants, they are transferred to the districts, and from that point on are expended like any other resources.

Specificity, on the other hand, is quite high. In Tanzania for example, the two pre-payment schemes (the Community Health Fund and the National Health Insurance Fund) produce detailed information on participation and spending, and participation rates can be viewed via the fund bank accounts in the Bank of Tanzania. User fees are reported by district councils annually, although like all data reported by district councils, these reports are often incomplete. Out-of-pocket spending at private sector clinics or informal drug shops is more difficult to track, although the WHO provides annual estimates, and they can also be estimated based on periodic household budget surveys. On the expenditure side, there is close tracking of spending amounts and categories, presented in annual

health sector public expenditure reviews and the three year rolling Medium Term Expenditure Framework. In general, detailed information about the effect that health care costs have on household budgets may not be readily available, but the general progressivity and equity profile of health financing should be reasonably clear. Health financing is a highly complex function in most developed countries, where the public sector collects resources through taxation or social insurance (or regulates private groups that do this), aggregates payments into a single risk pool, and then pays health care providers or directly provides services. But given limited pre-payment and risk-pooling, and the dominance of public sector funding from general tax revenues and donor funds, the actual health finance situation is both less transaction-intensive and of higher specificity in Tanzania and Uganda.

¹⁶ Gerring et al use data on child mortality is from WDI 2007; life expectancy figures are from WDI 2006.

¹⁷ The full 2010 DHS report is not available yet, so confidence intervals for the most recent estimate of 81 deaths per 1,000 live births are not yet available.

¹⁸ This is based on a Lowess regression trend lines that they fit to the re-analyzed data.

¹⁹ Neonatal mortality refers to deaths occurring in the period between birth and one month of age.

²⁰ Nor is the story one of strong improvement in Uganda outside of the north balanced out by poor performance in the north. Even Kampala, the region with the best under-5 mortality rate in the whole country, had a higher rate of mortality in 2006 than did the entire country of Tanzania (94 per 1,000 to 91 per 1,000).

²¹ Author's calculation from Institute for Health Metrics and Evaluation data, available at <http://www.healthmetricsandevaluation.org/resources/datasets.html>

²² The instrument for economic growth are exogenous shocks to economic growth.

²³ Other authors like McKeown (1976) and Fogel (2004) had made the case for improved nutrition (linked to higher incomes and increased productivity) as the main driver of mortality reduction in the West.

²⁴ This finding is confirmed by McGuire (2010).

²⁵ Based on IHME child mortality and World Bank income data. Calculations available from author upon request.

²⁶ Based on IHME child mortality and World Bank income data. Calculations available from author upon request.

²⁷ Jones et al actually list 23 interventions. I consider 18 of the 23 because 3 of the interventions have, according to Jones et al, "limited evidence" of their effectiveness in reduction of under 5 mortality. Of the remaining 20 interventions, two of them are listed as both preventive and treatment interventions (Vitamin A and zinc).

²⁸ For a synthesis and critical evaluation of the empirical debate on this question, see Roodman 2007

²⁹ Ross (2006) is a skeptic, arguing that many of these papers omit controls for country and period fixed effects, and that their estimates of democracy's effect is further biased due to censored data from undemocratic regimes.

³⁰ Somewhat ironically, this was just at the moment that China had begun to phase out this cadre; see Filmer and Pritchett 1999.

³¹ As Mills (2005) notes, this debate predates the current controversy over PEPFAR and the Global Fund; she shows that it goes back almost to the beginning of global health efforts.

³² Like Alma Ata, it emphasized "close to the client" delivery mechanisms; like the 1993 World Development Report it emphasized a cost-effective minimum package and partnership with the private sector; like the institutionalists, it discusses the importance of governance.

³³ This trend can be seen in the 2007 formation of the "International Health Partnership," a group of mostly European donors that announced an explicitly health systems-focused aid initiative; the adoption of a "health systems strengthening" category for the Global Fund; the formation of a Global Health Workforce Alliance as well as the WHO's Health Metrics Network, and assorted other "system"-oriented international initiatives.

³⁴ Murray and Evans (2003) make a similar point.

³⁵ The category of specificity was adopted from Israel (1989).

³⁶ The services delivery sub-function breakdown is based on categories presented in World Bank (2004).

³⁷ The World Development Report is not fully clear about the placement of community-oriented self care on the matrix; I have presented my best interpretation of their framework.

³⁸ Even for researchers with small sample sizes and abundant time to design measurement methods, measuring quality of care is a challenge. It is possible to measure variables that are highly related to quality of care, such as physician effort, as the studies described in Hammer et al. (2008) show. However, this kind of expensive and time-consuming measurement is unlikely to be scaled up in the near future in countries like Tanzania or Uganda, where much more routine monitoring and supervision is still sorely lacking.

³⁹ In Tanzania, the formula is: Quantity to be ordered = 3*monthly consumption – stock on hand; see <http://www.msd.or.tz/pages/indent.html>.

⁴⁰ In Tanzania, only 200 doctors are trained each year.

⁴¹ This is what Fukuyama (2004) refers to as the problem of "delegated discretion."

⁴² One natural solution to this principle-agent problem is for the high level principals (such as the Ministry of Health) to contract out for services, and pay for results. This is the concept behind results-based financing (also known as pay-for-performance) schemes, which are a growing trend in the health systems world. However, these schemes typically rely on some form of functioning routine health information system, which does not currently exist in Tanzania or Uganda.

⁴³ Note however that all the major data sources used in this study, such as DHS, LSMS, and SPA, capture outcomes from the entire population, so the conclusions drawn valid for all segments of the population whether they attend public or private health facilities. The SPA facility surveys also survey both public and private facilities.

⁴⁴ Similarly, the social health insurance scheme that is envisioned in Uganda would rely on payroll deductions from formal sector workers.

Chapter 3: Child health programs and child survival in Tanzania, 1995-2009

A veritable graveyard of health plans
- the Titmuss Report (1964).

Tanzania could attain Millennium Development Goal Four if the trend of improved child survival were to be sustained.

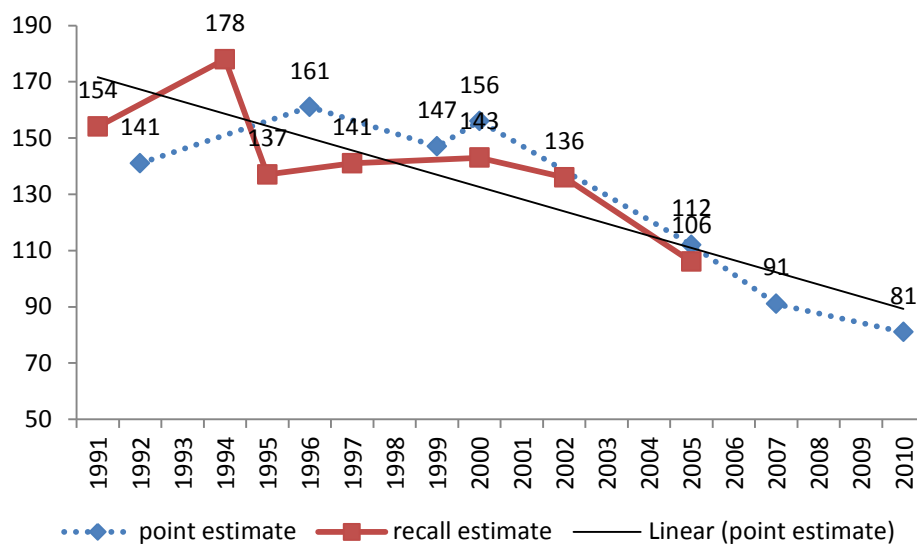
-Masanja et al. (2008), *The Lancet*

In this dissertation, I compare two African countries, Tanzania and Uganda, that are similar across a range of socioeconomic indicators, but which have demonstrated very divergent outcomes on key health outcome indicators in recent years. Tanzania's progress in health has far outpaced that of Uganda. Tanzania's mortality reduction between the 1999 DHS survey and the 2007 DHS survey was almost 40%, while Uganda's decline over a comparable period was between 10-15%. Consensus estimates from the WHO and the Institute for Health Metrics and Evaluation indicate that the average mortality decline across sub-Saharan African over this period was approximately 16%, dramatically slower than in Tanzania. What could possibly have caused this divergence, and what can it tell us about foreign aid, and about the prospects for strengthening health systems in Africa?

The international community has sharply increased its aid to Tanzania's health sector since the late 1990s, and in the years since, there is a clear record of improvement on key health indicators such as infant mortality and under-5 mortality (DHS 1999; DHS 2004-05; THMIS 2007-08; DHS 2010). The under-5 mortality rate decreased from 147 per 1,000 to 81 per 1,000, a decline that, given Tanzania's population and fertility rate, amounts to as many as 100,000 lives saved every year (Smithson, UNICEF, 2009). Infant mortality has decreased from 99 per 1,000 to 58 per 1,000 over the same period.

Preliminary data from the most recent DHS also shows that maternal mortality rate has declined from 578 per 100,000 to 454 per 100,000, although confidence intervals are not yet available to show if this is a statistically significant decline. In 2006 the National Bureau of Statistics revised its life expectancy figures upward: While in 2002 it projected life expectancy of 51 years for men and 52 for women, the new projections were for a male expectancy of 57 years, and female life expectancy of 59 years (Ministry of Health 2010). Since these 2006 predictions could not incorporate the mortality declines recorded in the 2007 and 2010 DHS surveys, further large upward revisions are in store.

Figure 3.1: under 5 mortality 1990-2010, all DHS point estimates



Do these statistics, especially Tanzania’s improved under-5 mortality rate, suggest that Tanzania is an example of fundamental and broad-based health system strengthening? Phrased differently, is Tanzania’s success a temporary, donor-enabled and -driven blip, or a more lasting example of institutional development? If so, what has enabled it, and what

form has it taken? This chapter will attempt to answer these questions. There is a large and inconclusive cross country literature on the relationship between aid and development outcomes. This study will take a different approach: By using the case study method to compare Tanzania with Uganda, I will attempt to understand the factors that enabled Tanzania's relative success in the health sector.

This study will examine the two cases through a variety of lenses. This chapter will attempt to explain divergence on child survival between Tanzania and Uganda. This question will be examined using the competing concepts, introduced in chapter 2, of *institutionalist* versus *public health-technocratic* approaches to the health sector.

Institutionalist approaches emphasize institutions and governance as the determinants of aid effectiveness and development outcomes, including health outcomes. *Public health-technocratic* approaches see health as a technical, relatively apolitical sector, and they emphasize resource levels, technical capacity, and specific biomedical interventions as the major determinants of health outcomes. By examining the first two of the six WHO health sector functions outlined in chapter 2 – sectoral governance and service delivery – we can gauge the relative explanatory power of these two approaches in explaining Tanzania's mortality reduction achievements.

The Tanzania case study's second chapter (chapter 4) deals with health system strengthening. In this chapter I will test the predictions derived in chapter 2 from the Pritchett/Woolcock/Fukuyama framework about institution-building. Considering these theories requires examining the six functions of the health system – human resources, the

pharmaceutical supply chain, health financing, and information systems, in addition to the previously considered governance and service delivery functions.

Third, in the course of this analysis of health system functions, I will pay special attention to the effect that vertical programs such as PEPFAR and the Global Fund have had on the health system. Since their initiation in 2004-05, they have deeply influenced the health system in both countries, and are important factors in any discussion of health system strengthening efforts.

The rest of the case study will proceed as follows. First I provide a brief narrative of recent developments in Tanzania. I then attempt to explain the divergence in child survival outcomes by focusing on two of the six health sector functions – sectoral governance and service delivery. This comparison sheds light on whether a public health-technocratic or institutionalist approach better explains the Tanzanian case. I then take a broader view in chapter 4, considering the health system as a whole. Examining all six health sector functions enables me to assess the trajectory of the system over the period in question, and thereby see whether the massive aid infusion and child mortality decline was accompanied by improvements in the entire system, or whether it was a more isolated phenomenon. It also allows a test of the predictions inferred in chapter 2 from the Pritchett/Woolcock/Fukuyama framework.

I. BACKGROUND

Tanzania, like most African countries, made encouraging progress on health in the first decades after independence, only to stagnate and begin to slip backwards in the 1980s and 1990s. Most African countries in the 1970s struggled with the global oil crisis, rapid population growth, and the decline in price of key commodity exports. Tanzania suffered from all these plus several problems of its own making, such as *ujamaa* socialism and the ill-fated “villagization” experiment, and even the costs associated with the invasion of Idi Amin’s Uganda in 1979. Tanzanian living standards fell by an estimated 40 to 50 percent between 1976 and 1983 (Cooper, 2002). Health spending was cut sharply, and health worker wages were swamped by inflation.⁴⁵ Just as the health sector was gravely weakened, the AIDS epidemic struck, also bringing in its wake a resurgence of tuberculosis. Meanwhile the malaria parasite was developing resistance to the most commonly-used therapies of chloroquine (CQ) and sulfadoxine pyrimethamine (SP).

The health sector began to turn around slowly: Economic reform began in earnest after Julius Nyerere’s 1985 retirement, and health emerged as a priority in the 1990s. By the mid-1990s, donors and the government had begun to plan for a sector wide approach (SWAP) and a major decentralization of health care services. The SWAP, initiated in 1999, involved not only donor spending in accordance with government priorities, but also aid delivery via a common on-budget health “basket” fund, much of which was channeled directly onto the district health budgets.⁴⁶

In addition to decentralization and the SWAP, there has also been a major infusion of resources, as government health spending per capita has more than tripled since 1995. At first glance, these three factors might seem to explain Tanzania's health progress – and indeed they are often credited with doing so. But viewing Tanzania in *comparative perspective* makes clear that the story must be more complicated. Uganda, for example, implemented decentralization and a SWAP, and increased health spending by a similar magnitude, without achieving similar results. The rest of this chapter will show that in addition to money, and standard institutional reforms like decentralization, several other factors helped Tanzania. These include strong health sector leadership, a relatively accommodating political climate, an evidence-based and adaptive malaria control effort, a creative “second best” institutional adaptation to the weakness of the routine health information system, and the presence of a strong research and health policy community (centered around malaria research and district-level Demographic Sentinel Surveillance systems) that had informal but highly influential links into the health policymaking process.

II. CHILD SURVIVAL DIVERGENCE

Before crediting the health system, it is first necessary to examine whether any broader socioeconomic trends could account for the child mortality reduction observed in Tanzania. Improvements in mortality outcomes are a complex function of environmental, social, and medical factors, and are deeply shaped by variables such as poverty, economic

growth, female literacy, and access to sanitation and clean water (Mosley and Chen, 1984).

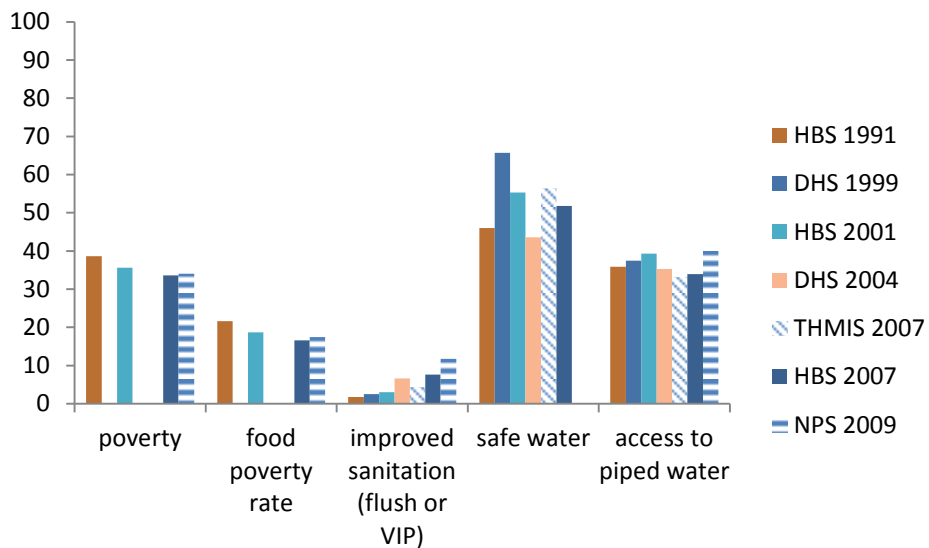
Socioeconomic factors

Simply examining Tanzania's growth rates in recent years might suggest that economic growth and poverty reduction has played a major role in Tanzania's child survival reduction: Real GDP growth has averaged 7% since 2000 (PHDR 2009). Yet a closer look at poverty statistics shows that economic growth alone is unlikely to have caused Tanzania's mortality reduction by itself. In the 2001 Household Budget Survey, 36% of Tanzanian households were poor, a number that barely decreased (to 34%) by 2007 and then stayed constant (again at 34%) in the 2010 National Panel Survey. An alternate measure, the food poverty rate, shows equally unimpressive decline (from 21% in 1992 to 17% in 2010). Meanwhile, Uganda was far outpacing Tanzania in this regard, more than halving its poverty rate over roughly the same period, from 56% in 1992 to 23% in 2010, without a corresponding mortality reduction. Taking a broader comparative perspective, economic growth accelerated across the vast majority of African countries in this period, yet the pace of mortality reduction varied widely.

Female education is often cited as a strong predictor of key child health outcomes. Yet female education statistics have registered slow progress: the Household Budget Surveys show that the number of women who have received any post-primary education went from 5% in 2001 to just 8% in 2007. Other poverty-related socioeconomic indicators

have also shown marginal improvements: The number of households with electricity has increased from 8% to 15%, while access to safe water has stagnated (access to piped water was 36% in 1992 and is only 40% today). Access to improved sanitation, either in the form of a flush toilet or a ventilated, improved (VIP) latrine has increased from 3% to 8%. In sum, Tanzania’s performance on non-health related indicators has been fairly lackluster. Indeed, Leo and Barmeier (2010) find that Tanzania is among the six worst performers in their Millennium Development Goals Progress Tracker, performing about as well as distinctly non-donor darling countries like DRC, Guinea-Bissau, and Zimbabwe. It seems clear that broader socioeconomic progress is not the chief factor driving child mortality reduction in Tanzania.

Figure 3.2: Selected socioeconomic indicators in Tanzania, 1991-2010



The clear implication of these statistics has been that Tanzania’s improvement in child mortality has come at least as much from factors that are directly linked to health services as it has from broader socioeconomic and environmental factors. This brings our

attention to the health system itself, and again raises the question outlined at length in chapter 2. Do technical interventions and resource levels alone drive progress in health outcomes, or is institution-building and improved governance more important? I will address this question by comparing developments in Tanzania with respect to two health sector functions: service delivery, and governance.

Service delivery

It's a combination of approaches. First of all it's the decentralization by devolution policy...the second thing has been all the work which has been done on malaria, which has definitely made a difference. Tanzania has made big efforts, be it in vector control, or care and treatment, and it's continuing. ..The third factor is IMCI. I think it has been scaled up in an appropriate way. And another thing which has also contributed and came very timely has been TEHIP.

-donor representative⁴⁷

The government wants to do [child survival interventions]. And we try as much as possible not to force, even if it is slow. And that's why people are saying, "Why is it taking long for the districts to implement IMCI?" Because we needed to people to understand that is it important, and that they need it for themselves. And then they demand for it, and when you introduce, it is easier to sustain.

-WHO child survival expert⁴⁸

Maybe it is some of those few magic bullets...I would give some credence to the arguments that Vitamin A and better malaria treatment have in the end benefitted kids, and therefore we've seen a drop in child mortality.

-donor health specialist⁴⁹

If economic growth and improved socioeconomic conditions did not drive Tanzania's mortality reduction, the next place to look is at the service delivery level. Fortunately there is a great deal of household survey data that shows the trends in service delivery coverage over time. In the section below, I discuss trends in service delivery in each of key programmatic areas related to child survival.

Immunizations

The health staff really are committed to immunization. These are wonder programs, and the government succeeds at maintaining an 85% immunization rate. This is an international thing that the government has bought into.

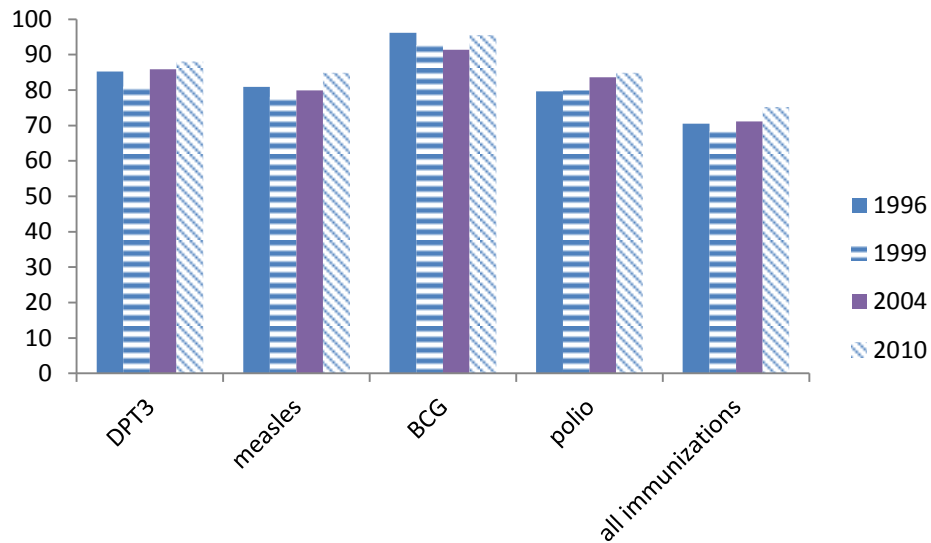
-donor representative⁵⁰

EPI [the Expanded Program for Immunizations] is...very results oriented, and I think that comes from international pressure, and an international culture in those programs, that is very results-oriented. They have to report their coverage rates...and they know that they will be judged by those.

-health sector analyst⁵¹

Immunizations are a highly cost-effective child survival intervention, and anecdotally, a number of interviewees cited strong immunization coverage as a likely cause of Tanzania's child mortality decline. Tanzania's coverage is in general relatively high, and has been for some time. DTP3 coverage was already 85% in 1996, increasing slightly to 88% by 2010. This is impressive by developing country standards: Lim et al (2008) estimate that among countries eligible for GAVI funding, DTP3 coverage was 74% in 2006. Yet while the *levels* are high, the *changes* in vaccination coverage over the past decade have been quite modest: the number of children with all required vaccinations, for example, increased from 70% in 1996 to 71% in 2004 to 75% in 2010. Similar patterns are evident in measles, polio, and BCG. Improvements of this magnitude are not large enough to be a major factor in the mortality reduction that Tanzania has experienced.

Figure 3.3: Immunization rates in Tanzania, 1996-2010



Maternal and newborn health

The main health sector evaluation itself said maternal health has made no progress and should rise on the agenda. Nothing significant has been done with it. Kikwete and the Prime Minister of Norway launched “Women Deliver”, the new roadmap. After that, for a year there was not even a meeting to discuss the roadmap. The roadmap has never been implemented. You know, the situation around maternal health has simply just not changed, despite evaluations, despite Kikwete himself launching this and that. There is no leadership on the issue of maternal health in this country.

-civil society activist⁵²

What hasn't moved? Maternal health, health systems issues, but these are long term issues. There are no quick wins. There's nothing like a quick win in maternal health. It's long term systematic things that you have to adjust.

-Tanzanian health NGO staffer⁵³

Maternal health care has important effects on child mortality: In 1996, for example, neonatal mortality (i.e. within the first week of life) comprised almost a quarter of all under-five mortality in Tanzania, and after the mortality reduction over that period, it comprised almost 50% of mortality by 2007. Yet despite this, maternal and newborn health was almost complete neglected until 2007-2008. Unsurprisingly, key indicators related to maternal health show essentially no change: the percentage of women that receive some form of antenatal care was very high to begin with (98%) and did not

improve; the number of women giving birth in a health facility is much lower and has barely changed at all (going from 47% to 50%), and the percentage assisted by a health professional (47% to 51%) while giving birth remained essentially unchanged as well. Given these very marginal changes, it is highly unlikely that any changes in service delivery related to maternal health had a meaningful effect on child survival outcomes.

Maternal health began to move back onto the international health policy agenda in the last 2-3 years, and Tanzania followed suit, introducing a National Roadmap to Accelerate Reduction of Maternal, Newborn, and Child Deaths in April 2008. However, as the above data show, this initiative had not yet resulted in major improvements in basic service delivery coverage for women. The 2010 DHS preliminary report presented a somewhat reduced maternal mortality rate of 454 per 100,000 (compared to 578 per 100,000 in 2004), but until the final report is produced, with confidence intervals, it is not possible to determine whether this is a statistically significant decline.

Nutrition

Folks tend to be rather fatalistic about [nutrition] – they say, well, this is all just poverty and food security and there's nothing we can do about it.

-health sector analyst⁵⁴

There's something called the Tanzanian Food and Nutrition Center, which has been going for about 40 years...in the last 10 years, there have been about 40 workshops and papers saying that we need to fortify food. The only thing that's fortified in Tanzania is salt. And we have pretty conclusive evidence that it kills probably 60,000 kids a year. And they haven't done anything.

-civil society activist⁵⁵

Poor nutrition is a major contributor to premature mortality, not because children literally starve but because poor nutrition weakens their immune system and makes them highly vulnerable to the broad range of childhood illnesses (Black et al, 2008). Improved

nutrition comes with economic growth and poverty reduction, but there are also a range of highly cost-effective programmatic interventions that can improve nutrition outcomes in the meantime.⁵⁶ However, despite the cost-effectiveness and potential impact of these interventions, nutrition programming has not been a priority in Tanzania in recent years. Key nutrition outcomes were essentially flat: the number of children stunted (low height-for-age) went from 43% in 1996 to 42% in 2010, and the percent of children suffering from wasting (low weight for height) went from 7% in 1996 to 5% in 2010. Adult malnutrition has also stagnated: 9% of women were malnourished in 1996, while 10% remained undernourished in 2004.

The two exceptions to this picture are the underweight indicator, and Vitamin A coverage. The percentage of children under 5 who were underweight (low weight for age) declined by almost half, from 31% in 1996 to 16% in 2010.⁵⁷ The reasons for this decline are unclear. Coverage of Vitamin A supplementation increased from 14% to 85% of children in 2004 (although preliminary results from 2010 indicate that coverage slipped back to 60%).⁵⁸

Tanzania's mixed progress can be attributed to several factors. On the positive side, improved Vitamin A coverage came about due to a switch from routine delivery to a policy of twice a year immunization-style mass distribution campaigns (Masanja et al, 2006). This was an important success and a likely contributor to reduced mortality, since Vitamin A deficiency harms normal growth and immune function, and increases susceptibility to common childhood illnesses especially diarrhea and measles.⁵⁹ Other

improvements in nutrition outcomes, such as the reduction in anemia, are likely due to reduced child illness levels overall rather than successful nutrition interventions, based on the age patterns of wasting, stunting, and low weight-for-age that are evident. (Smithson, UNICEF 2009).

But overall progress has been disappointing, and analysis by the NGO *Uwazi* (2009) points to missed opportunities, noting that Tanzania is the only country in the region that does not require comprehensive food fortification. Simple standard setting policy decisions would likely have a major impact on these lagging nutrition outcomes at minimal cost, but for some reason the government has failed to implement these standards. As the *Uwazi* briefing paper points out, there is a well-funded government nutrition institute, the Tanzania Food and Nutrition Center (TFNC), but the presence of this organization has not galvanized policy level action, despite donor funding and dozens of seminars, workshops, and trainings.⁶⁰ Msuya (2009) reaches similar conclusions, noting that nutrition has not been adequately prioritized by the Ministry of Health (perhaps because of its multisectoral nature), and criticizes the TFNC, noting that it has been largely focused on commissioning research and less on translation of research into policy.

Malaria control

We had, even before we got all the big money from the Global Fund, quite a well-developed malaria control program in this country.
-donor representative⁶¹

Malaria *has* to be a major contributor [to the mortality decline]. You can't reduce malaria transmission and prevalence rates by that much and not have some impact on the health burden

-malaria researcher⁶²

When we are very pragmatic, we say: There is a window of opportunity for malaria. There's a lot of money for prevention, treatment, diagnosis. Let's seize this opportunity and really bring malaria down. Because if the reservoir goes down, and if the country manages to maintain it at that level, it's no longer such a public health problem...it makes sense! It's a limited investment which really makes a big difference in the lives of the people.

-donor representative⁶³

Malaria control programming has almost certainly been a key factor in explaining Tanzania's under 5 mortality reduction. This conclusion is based on evidence from several sources. First, DHS and other household surveys show that malaria-related interventions are virtually the only child survival interventions that increased significantly over the past decade, and show sharp decline in intermediate outcomes (such as reported fever in under-5s) that are consistent with reduction in malaria mortality. Second, there is also more partial evidence from routine data systems and sentinel surveillance, which show dramatic declines in malaria prevalence and transmission. Third, the age pattern of mortality decline, concentrated as it is in the post-neonatal period, also coincides with the epidemiology of malaria: Masanja et al (2008) note that the fact that the decline in mortality is highest for post-neonatal infants (1-11 months) – the age group subject to the highest rates of malaria-specific mortality – also suggests the impact of malaria control.

Tanzania's malaria treatment and control programs have followed a range of strategies, including highly subsidized (and later free) distribution of insecticide-treated bed nets (ITNs), improved treatment for malaria patients with first line Artemisinin Combination Therapy (ACTs), intermittent preventive therapy for pregnant women, and some indoor residual spraying of houses. ITN coverage was promoted first through social marketing

projects, which went to scale nationally in 2002, followed by the first Global Fund program; a bed net voucher scheme for pregnant women, introduced in 2004 and known as “*Hati Punguzo*.” This enabled every pregnant woman to purchase a highly subsidized bed net at the time of her antenatal visit. The scheme was then opened up for children under 5 in 2006. (The logic of the voucher scheme was that it would not displace private sector net distribution while still subsidizing vulnerable populations.)⁶⁴ In 2009-2010, a mass distribution campaign of free bed nets was implemented; in 2009 nets were distributed to all under-5s, and in 2010 this was followed up with free distribution to all sleeping spaces. Intermittent Preventive Therapy (IPT) for pregnant women was started in 2002. The basic net coverage rates are quite high: household net ownership increased considerably, from 21% in 2004 to 75% in 2010, and the number of children sleeping under a bed net increased from 16% to an impressive 72%. (For expectant mothers, prevention progress has been mixed: Coverage for two or more doses of Intermittent Preventive Therapy (IPT) for pregnant women has only increased from 22% to 26%, but the number of pregnant women sleeping under a net more than doubled, from 32% to 68%).

On the treatment side, the government switched from the increasingly-ineffective chloroquine (CQ) to sulfadoxine pyrimethamine (SP) in 2002, and from SP to artemisinin combination therapy (ACTs) in 2007. The switch to SP was highly successful, resulting in reduced stock outs and improved treatment outcomes.⁶⁵ But as resistance to SP grew, the Ministry switched again to ACTs. ACTs are far more expensive than previous therapies, and therefore most Tanzanians access them in the

public sector. The overall percentage of under-5s with fever who receive any treatment has stagnated between 50-60%, but quality of treatment is slowly improving: Of the 60% percent of febrile under-5s who receive treatment, approximately two-thirds (37% out of 61%) are treated with ACTs, up from one third (21%) in 2007.

Based on DHS data alone, the most striking outcome that suggests successful malaria control is that the percent of children under 5 reporting fever in the two weeks before the survey has declined sharply: it went from 35% in 1999 to 19% in 2007 (although preliminary data from the 2010 DHS shows a slight uptick to 23%.) From peak (1999) to trough (2007) this represents a 50% drop in fever in under-5s. Alternatively, the drop from the average level recorded in 1990s (32%) to the 23% recorded in 2010 still represents a highly significant decline of almost one-third. DHS nutrition statistics also show that severe anemia in under-5s (which is closely linked to malaria) declined by approximately 30%.

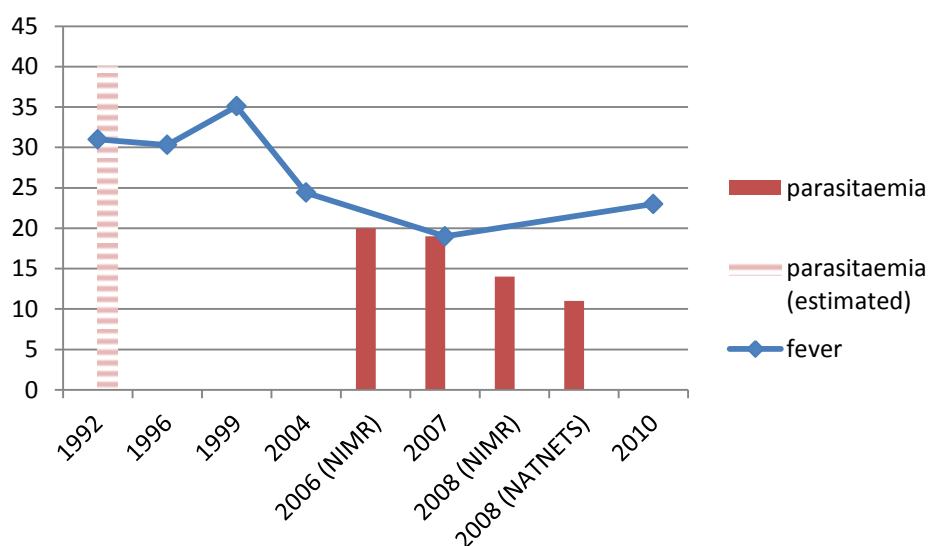
The case that malaria control strongly contributed to Tanzania's mortality reduction is best made by Smithson (2009), who brings previously unpublished data into the picture. He notes that measuring change over time in malaria parasitaemia is challenging, since the 2007 THMIS was the first nationally-representative survey. There is therefore no national baseline from the past. However, he notes that the mean prevalence rate in a Ministry of Health meta-analysis of 219 prevalence surveys in Tanzania was 39%. Therefore the DHS survey prevalence of 18% in 2007 likely represents a dramatic reduction, potentially of up to 50%. Unpublished sentinel data that Smithson presents

further supports the idea that prevalence has declined sharply, showing declines from 24% to 4% (in Dar es Salaam between 2004 and 2008), and from approximately 35% to between 10%-15% (in Rufiji and Ifakara DSS areas between 2000 and 2008). Moreover, he shows that in the 13 sentinel hospitals monitored by the National Malaria Control Program, the number of blood slides testing positive for malaria dropped by half between 2000/2001 and 2007.

Shortly after Smithson's work was published in 2009, the NMCP published the results of a group of surveys conducted by the NMCP and by evaluators of the Tanzania National Voucher Scheme. These show further evidence of progress on malaria; specifically, they record even lower levels of malaria prevalence than the 18% found in the THMIS. NIMR recorded 20% parasitaemia in 2005 and 14% parasitaemia in 2006, while the NATNETS survey found 11% parasitaemia in 2008. Both surveys also largely confirmed the trends found in the DHS and THMIS surveys about bed net ownership and use, and malaria treatment practices.

None of the aforementioned data are ironclad in their own right, or should be interpreted as definitive proof that malaria control caused Tanzania's mortality decline. (For one thing, the decline started in the late 1990s/early 2000s, before most malaria control interventions had reached scale). Yet taken together, they suggest a remarkable decrease in the prevalence of the illness that is Tanzania's largest single health problem, and indicate that malaria control was a major contributor to Tanzania's mortality decline.

Figure 3.4: prevalence of fever and parasitaemia (estimated and measured) in children under 5 years of age



Source: 1996, 1999, 2004-05 and 2010 DHS; 2007-08 THMIS; 2006/2008 NIMR and 2008 NATNETS surveys

Sectoral governance

This wouldn't have worked in Nigeria.
-former Ministry of Health official⁶⁶

There is corruption, absolutely, but it's not at the level of Zambia, Kenya, Zimbabwe...you know, it's not this grand corruption with health money – yet – that's really jeopardizing donor funding. And Lord knows, there's all sorts of corruption with with military deals and other things. But it's not this, "oh yeah, we accidentally ate \$100 million of Global Fund money."
-HIV/AIDS NGO deputy country director⁶⁷

While the above data provide good reason to think that malaria control has driven a significant part of the mortality reduction in Tanzania, it does not explain *why* malaria control was rolled out successfully in Tanzania. To understand that, we must first examine the governance picture more broadly. At least three governance-related factors are relevant to health sector developments over the past decade. First, there were overall improvements in institutional quality, starting from a level of governance that was

already slightly better than regional comparators. Second, there was a decentralization of health services. Third, this period also saw the emergence of an influential network of Tanzanian and international researchers and policymakers who were focused on child survival issues, and who had unusual levels of access to and influence on high-level policymakers.

In the most general terms, state capacity in Tanzania improved to a certain extent over the period in question. A clear example of this is macroeconomic policymaking, where a strong Ministry of Finance emerged under President Benjamin Mkapa (1995-2005). While observers on the ground dispute the IMF's 2009 judgment that Tanzania "is now considered to have one of the best public financial management systems in sub-Saharan Africa," the Tanzania Revenue Authority did increase revenue collection by 89% in real terms between 1993-94 and 2003-04 (Lawson et al. 2005) and has continued its upward trend since that point (World Bank 2010).⁶⁸ Elections are generally judged free and fair, and while the Chama cha Mapinduzi ("Party of the Revolution") has maintained its dominance, the presidency changes hands every 10 years (there have been three different presidents since Julius Nyerere's retirement in 1985). The press is generally free, if usually disinclined to challenge the state too vigorously. Political stability has been maintained, and Tanzania's 120-plus ethnic groups continue to live in peace.

These factors account for Tanzania's status as a donor darling. That said, in several key respects this reputation is about ten years out of date. In the 2008-10 period, political debate in Tanzania was almost completely dominated by discussions of grand corruption.

Several large scale scandals, involving massive embezzlement from the central bank and fraud in the implementation of government power generation contracts, had recently been uncovered. Trials of accused officials were ongoing but as yet inconclusive, and there was little way of knowing if the worst corruption had been revealed.⁶⁹ (No major health-related grand corruption scandals were discovered, however). Previously successful areas of reform such as public financial management reform and civil service reform were now seen by close observers as stalled.⁷⁰ And while Tanzania's elections continued to get high marks from outside observers, CCM continued to use a variety of "soft" but illiberal tactics to entrench its utter dominance (Hoffman and Robinson, 2009).⁷¹ The governance gains from the mid-1990s seemed to have reached a plateau.

Nonetheless, state capacity was clearly improved over its nadir in the 1980s and 1990s, and this improvement affected the health sector in the following ways. First, the combination of increased tax extraction, orthodox macroeconomic policy, and financial management reforms swelled public coffers, setting the stage for an overall fiscal expansion. It was this fiscal expansion, rather than any particular attention to health, that accounted for increased health spending in Tanzania: Health's share of the budget stayed roughly constant at around 10%, while overall government expenditures went from 11.2% of GDP in 1996 to 22.1% of GDP in 2006).⁷² Second, the reestablishment of a reasonable standard of governance (after a period of significant decline in the 1980s and early 1990s) meant that Tanzania was an obvious target when donors started looking for countries that could absorb the new influx of global health money. Finally, the reformist atmosphere of the early Mkapa years created a fertile environment for health sector

innovation, which began during this period. However, despite the contribution of these governance-related factors to the health sector, they were not enough to spark dramatic health system improvements.

There were, however, two additional governance-related developments in Tanzania that more directly affected the health sector in general, and child survival outcomes in particular. The first was Tanzania's decentralization program. The second was the emergence of an influential policy network focused on the issues of public health and mortality reduction, emerging from the world of malaria control research, and from the demographic surveillance systems that were set up in a handful of districts in Tanzania in the early-to-mid 1990s.

Health sector decentralization

I remember when I came first in 1997 to Tanga, we did a kind of evaluation of our interventions of there. While I was discussing with the DMOs [District Medical Officers] there and talking about management and better allocation of resources, they all laughed and said what are you talking about? We do not have a bit of control of resources. Everything is coming from the center. Whether these are the drugs we need or not is not the question! Whether we need a car or not is not the question. And so there was – and this is I think is very clear – a tremendous change in Tanzania.

-donor representative⁷³

There's been considerable effort to strengthen the district health planning and management capabilities, and provide meaningful guidelines, particularly for planning and budgeting and prioritizing. And while none of that is perfect, I think that it is a positive force. Certainly if you leave the money at the center, then central government bureaucracies have a way of pissing it away. So I'm not saying that there is no waste or sort of self-seeking behavior going on at the districts – I'm sure that there is – but I think [decentralization] is generally a positive thing.

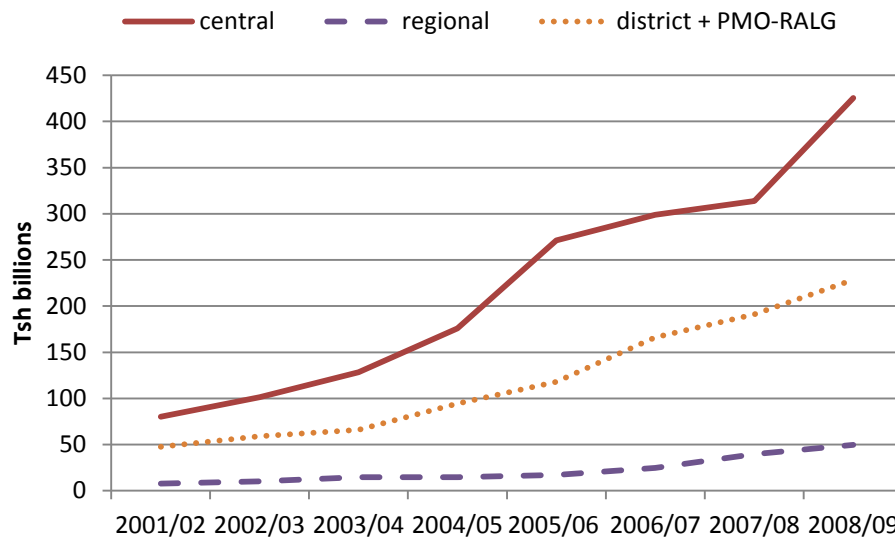
-health sector analyst⁷⁴

I talk to colleagues in Kenya. Jesus, what a mess! I mean how would you implement anything in your district, if no matter what you plan for, the government's just going to allocate you something random anyway?... The [district] planning process here for budgeting is grossly imperfect, but there is *some* point in planning. If you don't plan, you won't get your money. And what you get may actually bear some relationship to what you planned for, and what you tried to justify.

-malaria researcher⁷⁵

Decentralization was widely cited in informant interviews and in published reports as an important contributor to Tanzania's health sector progress (JEE 2007, Masanja et al 2008). Yet many African countries have decentralized their health sectors in recent years, often with very mixed results (World Bank 2004). On paper, Tanzania's decentralization was similar to that of many other countries. Lower level health facilities were shifted from central control to the joint authority of district governments and the Prime Minister's Office for Regional and Local Government (PMO-RALG).⁷⁶ These new district health services were funded by central government block grants, "top ups" from the basket fund, and district council tax revenues. While the bulk of revenue still arrived from the center, genuine responsibility for planning, resource allocation, and supervision was devolved to new bodies known as Council Health Management Teams, which were made up of senior district-level health personnel.

Figure 3.5: Health spending by government level, 2001-2006



Source: Ministry of Health Public Expenditure Review, various years

What was unique about the Tanzanian experience was less the design of its decentralization program than its origins. Tanzania’s approach was based on the lessons learned from a series of district-level programs that took place in the 1990s. The most prominent of these was a project called the Tanzania Essential Health Interventions Program (TEHIP), which was highly influential and is worth describing in some detail. This project, conducted jointly by Canada’s International Development Research Centre (IDRC) and Tanzania’s Ifakara Health Institute, came about when researchers from the IDRC set out to test the theory behind the 1993 World Development Report. The report contended that major improvements in health could result simply from instituting a decentralized budgeting process that allowed health spending to more closely match the local burden of disease, and the provision of an “essential health package” of evidence-based, cost-effective interventions.

The TEHIP project had five key components. First, council health managements teams (CHMTs) in two districts were given simple planning tools that allowed them to plan and budget with knowledge of the actual burden of disease in their district, using data from the Demographic Surveillance System. Second, district health budgets were topped up, by a small increment, on a per capita basis. Third, health workers were trained in a new WHO-promoted protocol for treating sick children known as Integrated Management of Childhood Illnesses (IMCI).⁷⁷ Fourth, top down accountability was targeted through a “cascade” management system, which made officials at each level of the district system – from the district hospital to the health center to village dispensaries – responsible for supervising the level directly below them. Finally, bottom-up accountability was targeted through a community voice tool. Each of these project components found their way into the eventual design of Tanzania’s decentralization reforms (De Savigny et al 2004).

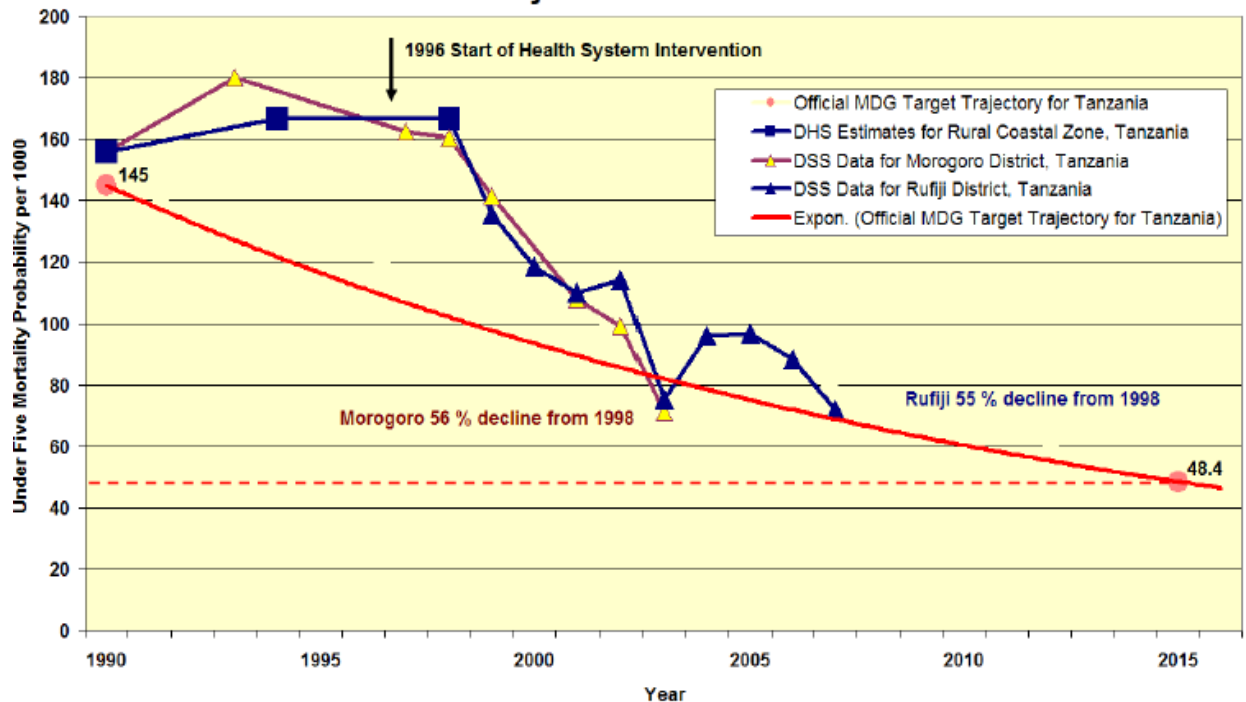
Two things are noteworthy about this experience. The first is that the TEHIP project was stunningly successful: Child mortality fell by 40% over 4 years, presaging the national decline of the same magnitude over the past decade. Yet successful pilot projects are not uncommon. The second, even more notable aspect is that the lessons of the project were fairly quickly integrated into national policy. The Ministry of Health was clearly open to learning TEHIP’s lessons, and before long decided to roll out the district planning tool nationally, resulting in the current system of Comprehensive Council Health Plans (CCHPs), along with other TEHIP interventions such as IMCI and bed net distribution. In gaining Ministry confidence, the use of DSS data was crucial: Real time, population-based data that showed mortality was dropping rapidly, in a country with practically non-

existent routine data and once-every-five-years DHS data, had a galvanizing effect on Ministry leaders. The TEHIP leaders were also unusually concerned about achieving successful translation of their results into policy. To this end they funded a special unit within the Ministry of Health charged with ensuring the adoption of project lessons. This was an effective and unusual step. For many projects, dissemination strategies are based on conference presentations and publications, rather than embedding alumni within ministries.

The donors also signed on, copying TEHIP's per capita budget "top up" with basket funding to district budgets. This model of placing significant resources directly onto district health budgets, while at the same time training District Health Management Teams on prioritization of cost-effective, child survival-targeting interventions, has been widely identified as an important contributor to Tanzania's mortality decline. Masanja et al (2008) for example hypothesize that "increased public expenditure on health could also be especially powerful in decentralized health systems when such resources are targeted towards essential cost-effective interventions...By introducing sector-wide capitation grants that gave districts substantial financial resources...[Tanzania] opened opportunities for local problem solving and provided resources for districts to selectively increase resources for key interventions."

Figure 3.6: under-5 mortality trends in TEHIP districts

Reversing the trend in child mortality - After District Health System-level interventions in Tanzania -



Source: Don De Savigny (2010), "MDGs Four and Five: What Can HDSS Sites Contribute?" accessed at <http://www.indepth-network.org/AGM%202010/Presentations/day1/parallel1/INDEPTH%202010%20AGM%20MDG%20keynote.pdf>

Sectoral governance and child survival

The credit goes to a big extent to Hassan Mshinda... The guy is outstanding. He was a researcher, and he became director of Ifakara, and this is kind of a networking person. You sit with him and you have ten ideas; he's throwing ideas out and putting people in touch, and he says: Oh, you could do that, why don't you contact this person! Whatever you come with, he will turn it into something to be done. So he's really good, and he managed to motivate new sources of funding. And of course, there are big new players like the Gates Foundation, and he really managed to gain their trust and get new mandates from them.

-donor representative⁷⁸

There has been that sort of informal networking and the Ministry is very, very open to that. They don't say, we're going to hide in a corner and write our strategy and then ask you what you think of it. They do tend to say: Well, let's get everyone around table and put our ideas together. And if there are people who are ready and willing to put some effort into that, then they do of course have an influence on strategy development.

-health sector researcher⁷⁹

[Ifakara's founder] was really a visionary, he came 52 years ago to Tanzania... from the first day, he said my aim is not to make a field laboratory, my aim is to build the capacities of the people to manage it, from the very beginning... And thanks to the fact that Ifakara is a district-based facility, not Dar-based, that makes a difference... the researchers went there, they stayed there for years, they started to speak Kiswahili, the "went native" in a positive sense, and they empowered their Tanzanian colleagues and said, yes, you can do it! And I think that has been an excellent process. And the link to the policy, that's interesting, how

has it developed? Well, you see that now Ifakara is now recruiting people that have returned from the Ministry ... there has been a continuous flow of information between Ifakara and the Ministry, and it's quite informal.

-donor representative⁸⁰

However successful and influential TEHIP may have been, the ability of one project to trigger dramatic health system change is limited. The broader reason for Tanzania's embrace of district-level prioritization of child survival programming was because TEHIP was only the highest profile of a number of similar contemporaneous projects. The German aid agency GTZ had highly-regarded district health programs in Mbeya and Tanga, the Dutch (SNV) worked in the Lake Zone, while the Swiss and the Danish had regional programs as well. But the most similar to TEHIP in design and influence was a DFID-funded project known as the Adult and Maternal Morbidity Project. This project, like TEHIP, created DSS systems and measured the burden of disease in several districts, including Dar es Salaam (where it was known as the Dar Urban Health Project), and Hai district, in Kilimanjaro region. The personnel from these various projects internalized an intense focus on child survival and on prioritization of an essential health package. When they moved into key positions of influence, both inside and outside of the Ministry, it signaled the rise of a cadre of highly committed, technically strong policymakers. For example, the current Chief Medical Officer, a highly regarded leader in the health sector, is an alumnus of the Dar Urban Health Project, while TEHIP managers now staff the Ministry's Health Sector Reform Secretariat. Former Ifakara head Hassan Mshinda was tapped to head the Tanzania's science and technology ministry, known as COSTECH. Of course, the Ministry of Health still has capacity problems, endless red tape, and other attributes of a typical developing country bureaucracy. But it also had "pockets of efficiency" (Geddes, 1986) that were able to drive progress in certain selected areas such

as child survival programming. Thus beyond paving the way for implementation of decentralization itself, this investment in district-level systems strengthening created an influential policy network that drove sectoral policy throughout the period of mortality decline from 1999 to present.

This other source of highly qualified, highly committed health sector researchers and program managers came from the malaria community, which in Tanzania is largely centered around a research organization known as the Ifakara Health Institute.⁸¹ Ifakara has been a center for high level malaria research for many years. More so than many field research sites, it has had a particularly strong focus on the training of Tanzanian researchers, scientists, and health policymakers. The technical experts and implementers associated with Ifakara, and with malaria research more generally, have been highly involved with policy in Tanzania, and have had major influence over National Malaria Control Program. The NMCP, in turn, thanks to enlightened leadership, has been very open to outside assistance, in a number of ways. One example is the way in which the NMCP invited a project implementation unit known as the “ITN cell” to embed itself. This small, Swiss-funded unit has played a major role in ensuring that the roll out of various bed net-related programs has been highly effective. The NMCP has also hosted other embedded technical experts, and otherwise made good use of the expertise available in the malaria research community in Tanzania. Given that malaria control has almost certainly been a major contributor to the child survival gains of the past decade, this functional mix of Ministry and external personnel and resources has been a major reason why.

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- ⁴⁵ From 1978 to 1983, rural health spending per capita was halved (Iliffe, 205).
- ⁴⁶ Not all SWAPs include common “basket funds;” In many cases the recipient government produces a strategic plan for the sector, which donor fund via project-based aid (Hutton and Tanner, 2004).
- ⁴⁷ Author interview, October 6, 2009, Dar es Salaam.
- ⁴⁸ Author interview, November 11, 2009, Dar es Salaam.
- ⁴⁹ Author interview, October 16, 2009, Dar es Salaam.
- ⁵⁰ Ibid.
- ⁵¹ Author interview, September 2, 2009, Dar es Salaam.
- ⁵² Author interview, August 31, 2009, Dar es Salaam.
- ⁵³ Author interview, September 14, 2009, Dar es Salaam.
- ⁵⁴ Author interview, September 2, 2009, Dar es Salaam.
- ⁵⁵ Author interview, February 17, 2010, Dar es Salaam.
- ⁵⁶ The Copenhagen Consensus found that the first, third, fifth, sixth, and ninth most cost-effective potential interventions were all nutrition-related; see Uwazi 2009.
- ⁵⁷ The prevalence of severe stunting and wasting (-3 SD from reference weight) has also declined over this period.
- ⁵⁸ The percent of children 0-6 months who were exclusively breastfed went from 8% to 23%, but this statistic is difficult to interpret. It might represent an impressive increase, but it is difficult to know, since DHS surveys caution that due to changes in question wording, this statistic is not comparable across time.
- ⁵⁹ A meta-analysis of several trials finds that Vitamin A supplementation can reduce mortality among children six months to five years old by 23-34% if the supplement is distribution twice annually with coverage of 80% or higher (Fawzi et al. 1993). See also <http://www.who.int/vaccines/en/vitamina.shtml>.
- ⁶⁰ Other informants argued that nutrition’s low priority was in part a function of international policy trends. Since the Tanzanian health sector agenda is heavily donor-driven, the relative neglect of nutrition in international health policy meant that it simply fell off Tanzania’s health agenda.
- ⁶¹ Author interview, November 16, 2009, Dar es Salaam.
- ⁶² Author interview, December 15, 2009, Dar es Salaam.
- ⁶³ Author interview, October 26, 2009, Dar es Salaam.
- ⁶⁴ In 2006, PMI started funding a new voucher at the 9 month measles vaccination point.
- ⁶⁵ Author interview, December 2010 Dar es Salaam.
- ⁶⁶ Author interview, May 19 2009, Dar es Salaam.
- ⁶⁷ Author interview, December 2 2009, Dar es Salaam.
- ⁶⁸ Civil service reform, while problematic, was at least more successful than it was in similar countries. Stevens and Teggerman (2004) describe it as a success story, but stakeholder interviews give reason for skepticism.
- ⁶⁹ A major political dynamic in the election year of 2010 was an intra-CCM fight between good governance advocates and the “fisadi” and their allies who were inclined to downplay grand corruption.
- ⁷⁰ Interview, donor representative, September 18, 2009; Barkan 2000; see also “Dar’s Budget Faulty, World Bank Says.” *The Citizen* (Tanzania), February 20, 2010, Samuel Kamndaya.
- ⁷¹ CCM’s share of the presidential vote has increased from 61.8% in 1995 to 71.7% in 2000 to 80.3% in 2005, before dropping to 61% again in 2010.
- ⁷² I thank Paul Smithson of Ifakara Health Institute for this point.
- ⁷³ Author interview, November 16 2009, Dar es Salaam.
- ⁷⁴ Author interview, September 2 2009, Dar es Salaam.
- ⁷⁵ Author interview, December 15 2009, Dar es Salaam.
- ⁷⁶ Regional and referral hospitals remained under the authority of the Ministry of Health.
- ⁷⁷ Given the non-experimental design, there is no way to prove that the TEHIP model *caused* these declines. Critics argue that the TEHIP districts are not unique – mortality was declining everywhere in Tanzania around this time. According to De Savigny et al., however, “the staggered patterns of mortality rate declines in the test districts and in the rest of the country” suggests that the TEHIP approach was a major contributor to the decrease in infant and child mortality.
- ⁷⁸ Author interview, October 26 2009, Dar es Salaam.

⁷⁹ Author interview, September 2 2009, Dar es Salaam.

⁸⁰ Author interview, October 26 2009, Dar es Salaam.

⁸¹ This overlaps to a considerable agree with the group mentioned above; much malaria research was done in the Rufiji DSS where TEHIP also took place for example; key TEHIP researchers (such as Don de Savigny of the Swiss Tropical Institute) are also prominent malaria experts, and so on.

Chapter 4: Health sector reform and health system development in Tanzania, 1995-2009

There is a benign policy environment, in the sense that there is a genuine political and bureaucratic commitment to basic health services, to making those as universal as possible, and making measurable progress towards MDGs. So that lot is not in doubt.

-health sector analyst⁸²

In the health sector, we have a SWAP, and we have eight years of successful harmonization. It's not perfect, it's not 100%, and if you go in details you will even become angry, and say, why are we talking since more than seven years about the HRH crisis and so little has been done? Why do we not have an HMIS system which gives up reliable figures? ... But in general I think that this has made a difference in a country where before, do not forget, you had 1,500 projects, and each project with its own concept.

-donor official⁸³

The PEPFAR and Global Fund money and HIV/AIDS money in general, has completely swamped and created a tidal wave, that overshadows absolutely everything else, which is partially why maternal health is not making any progress and why the health system is not making any progress

-women's health NGO representative⁸⁴

The preceding chapter shows that child survival gains in Tanzania have been impressive to date. But what about the overall health system? Has it been the key mechanism through which improved mortality outcomes have come about? An often-heard critique from skeptical interlocutors was that the Tanzanian health system as a whole had not improved, and that any mortality decline was purely a function of one or two unsustainable, verticalized interventions. This section will consider whether this pessimistic view has merit. It will also attempt to test this dissertation's theoretical framework. Recall that in chapter 2, the literature on health sector reform and health systems development was reviewed, and a theoretical framework based on Pritchett/Woolcock and Fukuyama's institution-building theory was developed. In this chapter, I will present evidence about the dynamics of six health sector functions over the

period in question, and test whether the predictions generated by chapter 2's theoretical framework hold true for Tanzania.

Service delivery

Much of the evidence on service delivery coverage for the under-5 population has already been presented in the first section. In this section I first discuss two categories of child health service delivery highlighted in chapter 2: population-oriented prevention and family-oriented support for self care. Then I discuss quality (rather than coverage) of child health services, as well as coverage and quality of services for the over-5 population, including key drivers of the adult burden of disease such as HIV/AIDS and TB.

Following Pritchett and Woolcock's transaction intensity/specificity framework, the 2004 World Development Report identifies immunization and vitamin A supplementation as the key examples of population-oriented prevention services.⁸⁵ Community-oriented self care interventions include promotion of exclusive breastfeeding for children under 6 months, contraceptive use and safe sexual practices, and proper treatment practices relating to diarrheal disease.

As chapter 3 details, Tanzania's immunization performance has been strong over the period in question, and on Vitamin A supplementation, coverage increased dramatically between 1999 and 2004. On support for family self-care, Tanzania's performance was

mixed over the period in question. Treatment of diarrheal disease and promotion of exclusive breastfeeding are good test indicators for the success of health promotion activities, since both are virtually free but have large health benefits. As table 1 shows, there have been some gains in treatment of diarrhea and exclusive breastfeeding. Diarrhea treatment in particular has improved, with 90% of children received either oral rehydration therapy or increased fluids.

Table 4.1: Family-oriented self care in Tanzania

	% children treated with oral rehydration therapy (ORT) or increased fluids	% taken to health facility	% mothers aware of ORT	median months exclusive breastfeeding	% exclusively breastfed until 6 months
1996	0.74	0.56	0.86	1.0	0.29
1999	0.87	0.63	n/a	1.1	0.32
2004	0.90	0.45	0.94	1.8	0.41

Service delivery: Quality of clinical child health services

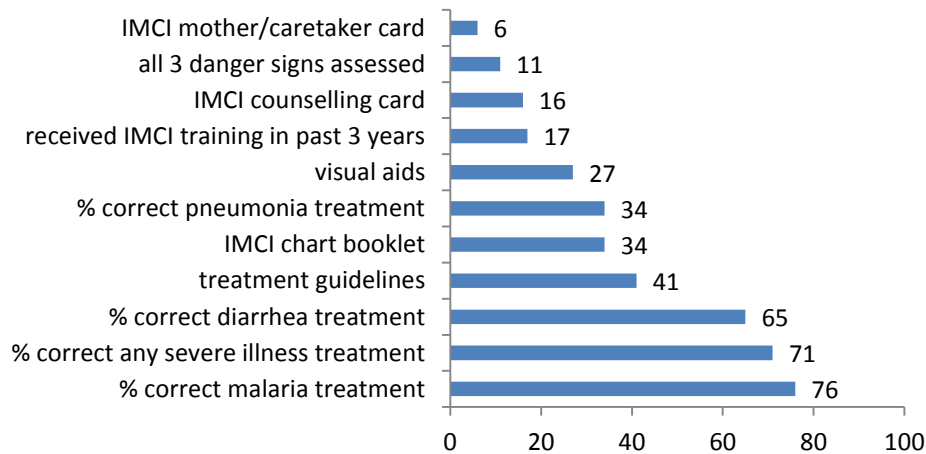
Quality of care is extremely difficult to measure, and definitive evidence on trends in the quality of clinical care in Tanzania does not exist. The most relevant evidence comes from Tanzania's efforts to implement Integrated Management of Childhood Illnesses (IMCI). IMCI is a treatment protocol developed by the WHO to minimize the

discretionary nature of curative care (and to integrate treatment of closely-related and concurrent illnesses), and by doing so improve the diagnosis and treatment of sick children. It was introduced when Tanzania was selected for the WHO's Multi-Country Evaluation of IMCI, and piloted in several districts. Based on perceived success in pilot districts, the program was rolled out nationally starting in 1998. By 2005, 83% of districts had done at least one training course (Prosper et al 2009). Results from the pilot districts raised high hopes for the effects of IMCI on quality of care: Schellenberg et al. (2004a) showed child mortality was 13% lower in IMCI districts than in two comparison districts,⁸⁶ and quality of care was dramatically higher: correct treatment of pneumonia, malaria and anemia was 75%, 88%, and 44% in the two IMCI districts, versus 40%, 25%, and 4% in two neighboring control districts.

The results from national rollout of IMCI appear to be quite different, however. The 2006 Tanzania Service Provision Assessment was a nationally-representative survey of facilities, in which trained enumerators actually observed consultations with sick patients, allowing the enumerators to note whether IMCI protocols were followed. The results provided sobering information about adherence to IMCI guidelines in actual observed clinical practice: while 46% of observed service providers tested for the three IMCI-suggested symptoms, only 11% checked for all three required "danger signs," all four basic exams were only carried out in 11% of consultations, and only 6% of consultations resulted in all three required pieces of advice being given to parents. 76% of malarial children received correct treatment, while just 65% of children presenting with diarrhea received correct treatment, and an incredible 34% of children presenting with pneumonia

– one of the top causes of child mortality in Tanzania – received correct diagnosis and treatment.

Figure 4.1: quality of care for sick children and IMCI program coverage



Source: Tanzania Service Provision Assessment (TSPA) Survey, 2006

Similar evidence about poor penetration of IMCI comes from Walter et al. (2009), who review 402 cases of severely ill children in Pwani region and find that none received full IMCI treatment. There is some localized evidence that, while quality of care is still quite low, it is better for those who have received IMCI training. Maestad et al, for example, shows that clinicians in Dodoma and Morogoro regions that had received IMCI training demonstrated a 24% increase in provider effort (measured by use of diagnostic questions and tests), even when controlling for a range of relevant characteristics. Smithson (2009) cites this and similar evidence to support his contention that “IMCI-trained health workers are providing ‘less bad’ rather than ‘good’ clinical care.”⁸⁷

More broadly, there is no baseline for these aforementioned studies, so it is certainly plausible that quality was significantly lower a decade ago, and has improved somewhat with IMCI introduction, or thanks to broader health sector improvements. Indeed, the Joint External Evaluation (2007) finds that all 16 of their surveyed districts report quality improvements over this period, citing improved infrastructure and drug supply (rather than training programs such as IMCI) as the main driver. Using this broader understanding of service quality, it is clear that after a long period of total neglect in the 1980s and 1990s (and with support by district-level basket funds, and from PEPFAR), many facilities have been refurbished (Smithson 2004).⁸⁸ One long-time sector observer offered the following observation:

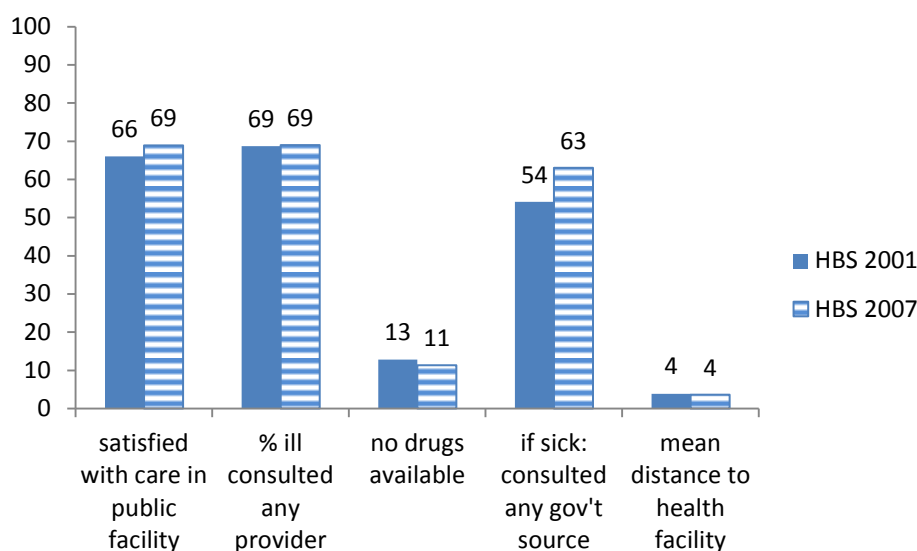
If people had seen what I have seen, they would see as well the tremendous change. Figures tell you only one story, your eyes tell you the other story. I remember a place, in Korogwe [in Tanga region]...I remember I had been in the hospital, and I would not have done surgery on my dog in this hospital. And a couple of years later: complete change.⁸⁹

Service delivery coverage and quality for the general population

There is much less data about coverage of health services for the over-5 population, because the DHS focuses primarily on maternal and child health. However, relevant information comes from several sources: General living standards-focused household surveys (from 2001, 2007, and 2009) that include short health modules, from PEPFAR and Global Fund reporting, and in some cases from the HMIS. The living standards surveys capture basic trends in morbidity and health services usage, while PEPFAR, Global Fund and HMIS data show trends in coverage of services related to the main drivers of the adult burden of disease: HIV/AIDS, TB, and malaria. The household

budget surveys show a picture of stasis in overall morbidity (in contrast to the rapidly changing mortality picture): the percentage of Tanzanians reporting sickness or injury over the course of a month is essentially unchanged (2001: 27%, 2007: 26%), and the percentage of sick people who seek care is also static (2001: 69%, 2007: 69%), while the mean distance to a health facility declined slightly from 3.9 km to 3.6 km. Perceptions of health services did not change dramatically. The percentage reporting no problems or satisfaction at government facilities in the 2001 and 2007 Household Budget Surveys also remained roughly constant (66%, 69%), although Afrobarometer found that the percentage of Tanzanians who thought the government was doing well or very well in improving basic health services increased from 50% in 2000 to 63% in 2008. The other notable conclusion from the livings standards surveys is that the percentage using government facilities has increased from 54% to 63% of all facility visits, which is consistent with the general pattern of increased funding, infrastructure, and services in the public health sector.

Figure 4.2: Access, use and patient perceptions of government health services, 2001 and 2007



Source: Household Budget Surveys 2001, 2007

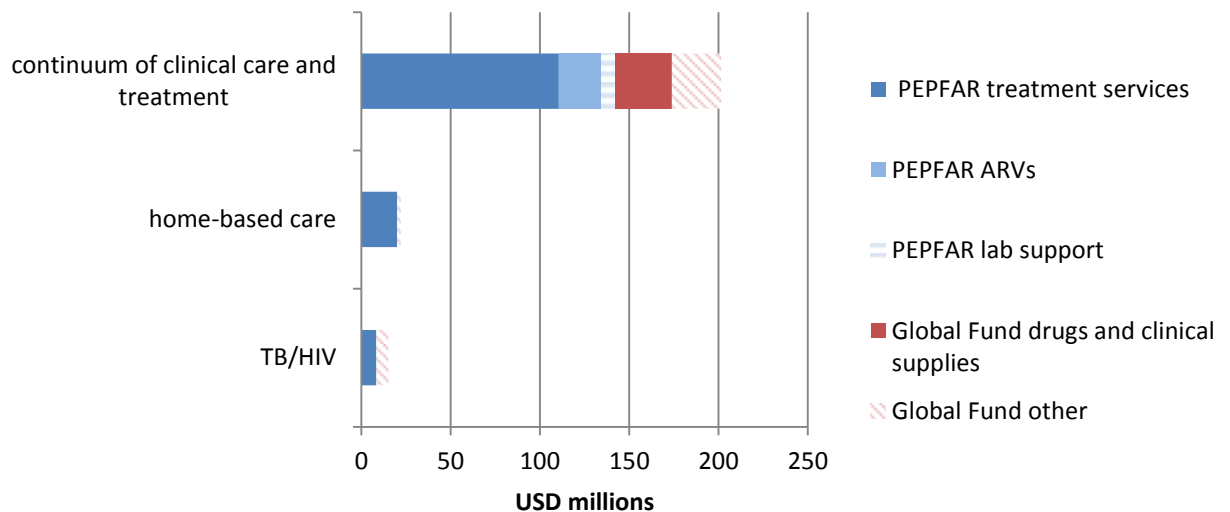
The important changes in coverage of health services for Tanzanian adults relate not to overall access or use of general services, but to HIV/AIDS, TB, and malaria. The most striking progress can be seen in the care and treatment of HIV/AIDS. According to Ministry of Health data, as of May 2010, a cumulative total of 664,115 patients have been enrolled in care and treatment, while over 341,667 people have initiated antiretroviral therapy, out of an estimated 440,000 Tanzanians who are in need of treatment.

Coverage of prevention interventions has increased sharply as well. By 2007 37% of Tanzanian women (age 15-49) and 27% of men had been tested for HIV,⁹⁰ while by April 2009, the PMTCT program had been rolled out to 65% of all facilities in Tanzania. By 2007, 30% of pregnant women were tested for HIV (THMIS 2007), and by 2009, 54% of the HIV positive women identified through these programs were receiving antiretroviral prophylaxis (PEPFAR 2009). Tanzania's tuberculosis program has also improved,

increasing its case finding rate from 50% to 71%, and its treatment completion rate from 78% in 1998 to 88% in 2009 (Smithson 2004; Rubona 2010), while the total number of TB cases has declined (PHDR 2009). Coverage of malaria interventions is discussed above in the child health section.

Regarding quality of care, there is widespread belief that quality of HIV services is significantly better than that of non-HIV health services. Data on quality and key related measures like lost-to-follow up rates are not publicly available, but simple observation of care and treatment facilities compared to other public dispensaries and health centers leaves little doubt that quality of care is much higher in vertical fund-supported sites. The way that this has been achieved, however, highlights the gaps in the broader health system. For HIV/AIDS, PEPFAR has essentially built a massive supervision and quality assurance and (to an extent) service delivery structure onto the health system. PEPFAR works through partners (which are international, usually US-based NGOs), and in Tanzania each partner is assigned to support care and treatment activities in 4 regions. The partners then create a large (often 100+ person) organization, based in Dar and the in the regions, to supervise, monitor, report, and provide technical assistance to the health facilities and clinicians that are delivering HIV/AIDS-related services. With this massive structure, it is indeed possible to deliver complex, high transaction intensity, low specificity services. However, it is at massive budgetary cost: below is a chart showing the breakdown of PEPFAR and Global Fund care and treatment activities into drug costs versus supporting activities: well over 50% of the costs go to PEPFAR “treatment services,” with a significantly smaller fraction going to drug and commodity costs.

Figure 4.3: PEPFAR and Global Fund HIV/AIDS treatment spending by category (2008)



Author's calculations based on PEPFAR and Global Fund data

The effect of vertical programs on other, non-HIV/AIDS or tuberculosis health service coverage and quality is difficult to ascertain with any great degree of certainty. As discussed below in the human resources, supply chain, and governance sections, it is reasonably clear that scarce skilled health workers have been pulled away from general health activities into ART and VCT, and that parallelization in general has strained the health system. On the other hand, beyond simple delivery of services, there are also positive spillover effects. A number of respondents described the use of PEPFAR funds for improvements in infrastructure, equipment, and for construction of laboratories that benefit health services more broadly. As one Tanzanian health NGO leader noted:

Generally I think these global grants have made a big impact on service delivery in Tanzania...in terms of improving not only HIV, TB, and malaria but even other services. And of course I say other services

because... if you improve the lab, it will also serve the mother, it will also serve the child. So it's a more systemic approach.⁹¹

Others pointed out that the ancillary benefits came with large opportunity costs:

If you look at cost efficiency in this context, forget about it, I'm sorry. If you go to Mtwara in the south, you will find a very nice blood bank there, which is made of marble. It really is the nicest thing you can find. And you can say, well, this is an improvement. But then go to the neighboring maternity ward, and you can say: Wouldn't it have been a better use of resources to improve the maternity ward? So it's easy to say, if you have this big amount of resources: Ah, but this has helped us! It would be *incredible* if it didn't have some spillover effects. But again: are they lasting? Are they structural? Are they helping the system as a whole?⁹²

More broadly, it is also clear that the worst predictions of vertical fund critics did not come true in Tanzania. Garrett's (2007) warning that mortality rates could actually rise if vertical programs genuinely hollowed out health systems did not come to pass: In Tanzania, under 5 mortality rates continued to decline rapidly, and intermediate outcome indicators continued to improve, although slowly in many cases. In addition, the Tanzanian experience shows that it is misleading to paint all vertical programs with a broad brush. Interventions as different as antiretroviral therapy and the ITN voucher scheme are signature vertical fund projects in Tanzania, but have completely different cost-effectiveness, sustainability, and burden of disease profiles.

A balanced summary of the effects of vertical programs on service delivery came from another interlocutor, who pointed to both the huge benefits of malaria and HIV/AIDS activities as well as the stresses that verticalized delivery systems have placed on the system as a whole:

Well, thanks to the PMI (President's Malaria Initiative), to the Global Fund, we'll have universal coverage [of bed nets], we'll have rapid diagnostic tests, we'll have Coartem. Thanks to PEPAR, access to CD-4 count and ARVs is improved. Also on prevention: prevalence is likely dropping. So I wouldn't blame them for all the bad, but I wouldn't give them credit for all the good. And in terms of distortions, I think yes, they are creating distortions, which we actually see at the health facility level very clearly. And still this

[separate] approach of HIV after so many years: It should be mainstreamed. It's not acceptable that you have a dispensary with a brand new HIV building with separate consultations and things like that. I mean, come on. We should stop that.⁹³

At the time of writing, the most pressing issue on the vertical fund side is the future financing of antiretroviral therapy, given that Tanzania was still experiencing something on the order of 120,000 new HIV infections annually. This will be discussed in more detail in the health financing section below.

Sectoral governance

Like service delivery, governance is a challenging health system function to categorize, since it is complex and multidimensional. The analysis in chapter 3 suggests that Tanzania was able to implement child survival interventions because sectoral governance had reached a threshold that enabled absorption of donor-funded increases in health spending. This naturally raises questions about what occurred in the health sector over the period in question to enable this, and whether it was limited to one or two priority departments or programs or whether it was a broader-based improvement. The answers have important implications for whether governance is a function that can be meaningfully bolstered from the outside. I will follow the framework outlined in chapter 2 by dividing sectoral governance into two components: a low transaction intensity, high specificity set of functions (planning, budgeting, policy formation, and regulation), and a high transaction intensity, low specificity set of functions (monitoring, supervision, and performance management).

Governance: Planning, budgeting, and policy formation

Planning, budgeting, and policy formation are all relatively low transaction intensity, high specificity activities. We should therefore expect that they were significantly improved in the course of health sector reform. This appears to be the case. Planning and budgeting were a mess in the Tanzania in the early 1990s. As one interviewee put it:

In the beginning of the 1990s, the state of the health sector was appalling in Tanzania. It was a catastrophe. Complete catastrophe. It was balkanized, and the government didn't have an overview. Each donor had its own area: the Swiss area, the German area, the Netherlands and the Danish area. So it was really crazy, and there were a lot of conflicts and discrepancies, and it was not manageable.⁹⁴

Planning and resource allocation improved when the donors moved towards a SWAP, which was designed to be based on a government plan. This in turn drove the government to write a Health Sector Strategic Plan, and to create budgets that supported the plan. The planning and budgeting practices associated with the Medium Term Expenditure Framework, the Public Expenditure Review, and the retrospective Joint Annual Health Sector Review are all widely seen to be improvements over past practice.

The quality of policymaking in general appears to be relatively strong. The Ministry produces coherent planning documents and technical guidelines for lower level facilities (JEE, 2007), and a number of major policy changes, such as the decision to decentralize the health sector, to prioritize an essential health package, to adopt new first line anti-malarial treatments, to move towards a SWAP aid modality, and to implement the Integrated Management of Childhood Illnesses treatment protocol, are directly in line with the recommendations of international technical organizations like the WHO and the

World Bank. It is therefore difficult to separate completely the issues of policy making quality and *ownership*. Technically-sound policies are unlikely be effectively implemented if they are imposed by donors on an unwilling government. This has not been the rule in Tanzania, however. At the policy level, there is a healthy tension between the ministry and the views of the SWAP donors. Seen up close, it was often a picture of frustration, and to a degree dependent on individual personalities and relationships between the two groups. Yet viewed from a distance (and certainly compared to the analogous structures in Uganda), it is actually a reasonably functional process. The donors have their own priorities and bureaucratic demands, but the fact that they must form a common position for the health donors group (represented by a “troika” that engage the government directly) restrains their worst instincts. They push the government when they see a major gap; for example in recent years they have pushed the Ministry to focus more on maternal health, and on human resources for health. Slowly, and in keeping with their own interests and political constraints, the government typically begins to shift. It is by no means an ideal situation. Much better would a robust network of Tanzanian civil society groups that engaged with health policy and held the ministry to account. But since this does not exist, the Ministry-DPG Health relationship is a kind of second-best institutional arrangement.

The HIV/AIDS sector is a different story, for at least four reasons. First, while the trend prior to vertical funds was of *integration* of planning and policymaking structures, with vertical approaches to HIV/AIDS, the process has fragmented again, with new, separate structures created for HIV that were separate from the other health sector structures. Thus

some of the improvements to the planning and prioritization functions that took place thanks to the SWAP have been eroded. Now instead of a single process, high level ministry leaders have to go through separate planning with the SWAP donors, and *two separate* vertical fund processes. The first is with the Global Fund Country Coordinating Mechanism, and the second is with PEPFAR. (The only saving grace of this arrangement was that in the early years, ministry officials often barely participated in PEPFAR planning at all).

PEPFAR and the Global Fund also had clear effects on the *resource allocation and prioritization* process. All health sector resource allocation decisions are sensitive, given that they can mean life or death for people who depend on a particular service. PEPFAR in particular has affected this allocation process in two ways: first with its emphasis on HIV/AIDS services versus other health interventions, and second in its degree of emphasis on treatment versus prevention. PEPFAR was widely criticized in its early years for its earmarked prevention resources for “abstinence and faithfulness” programming. But even beyond this question of prevention strategies, the correct mix of HIV/AIDS versus other health services, and of treatment versus prevention programming, is a fraught moral and practical question that surely should be decided with significant input from a country’s legitimately elected representatives, even if they are not the funders of the interventions. For the first five years of PEPFAR in Tanzania, this was not the case.⁹⁵

PEPFAR and health sector governance

Prior to reforms that were implemented in 2010, PEPFAR incorporated very little government planning input, because its priorities were determined by targets set in Washington. It compounded this by operating off budget and out of the MTEF, and by being extremely reluctant to share information in its early years, even with the Tanzania government.⁹⁶ Moreover, the PEPFAR structure itself is so fragmented – between State, USAID, CDC, DOD, and dozens of implementing NGOs – that the increase in fragmentation and transactions costs went far beyond that which would be expected from the simple addition of one more bilateral donor. The ability of the government of Tanzania to engage in rational resource allocation, coherent medium-term budgeting, and legitimate and country-owned policymaking has been clearly disrupted. That said, two caveats should be noted. The first is that various individuals within PEPFAR had established solid working relationships with their government counterparts, allowing for some level of coordination and mitigating some of the fragmenting effects of PEPFAR’s structure. Second, by early 2010 PEPFAR had instituted a new structure known as the “Partnership Framework,” which entailed extensive consultation with government, via technical working groups and (in theory) though regular, high level meetings with government. The government of Tanzania, however, was reluctant to set up yet another regular, high level donor government health forum, given that it already had to manage the monthly DPG meetings and the quarterly Global Fund TNCM meetings, in addition to numerous working level forums. At the time of writing, the issue had not been resolved, and the future PEPFAR-government of Tanzania decision-making structure remained unresolved.

The other area where verticalized processes have disrupted sectoral governance is at the district level. As a matter of policy, PEPFAR is supposed to sign financial agreements with district authorities, co-signed by the District Executive Director and the Regional Administration Secretary. In reality, implementors described varying degrees of adherence to this model in different regions, a pattern which appeared to depend largely on the policy of the partner NGO or on the preferences of the country director. Creating a coherent planning process at the district level has been the one of the most challenging aspects of Tanzania's health sector decentralization, and vertical programs have clearly made this problem worse at the margin.

The Global Fund and sectoral governance

The Global Fund is a somewhat different story, bringing with it distinct strengths and weaknesses. Like PEPFAR, it is not included in the government's annual budget, but since 2007, public sector Global Fund resources are at least integrated into the government's Medium Term Expenditure Framework (MTEF), which is a rolling 3 year budget. (In fact, Global Fund money cannot be spent unless it has been integrated into a given ministry's MTEF). For the government's planning and resource allocation purposes, it also helps that the government (together with donors, consultants, and other stakeholders) generates its own Global Fund applications, allowing it to emphasize the areas within the three disease programs that it prioritizes. As a result, there is a priority-setting process, explicit attention to filling gaps in the overall HIV/AIDS, TB, and

malaria response, and some degree of visibility from the government into what activities are likely to be funded in coming years.

The weakness of Global Fund governance in Tanzania was that on the operational side, responsibility was fragmented across at least four institutions: the Ministry of Finance, the Tanzania Commission on HIV/AIDS (TACAIDS), the Ministry of Health, and the Prime Minister's Office for Regional and Local Government (PMO-RALG). The essential problem was that the Ministry of Finance, which was mandated by law to be the main recipient of Global Fund resources, had shifted the responsibility to TACAIDS, which lacked the staff or resources to manage such large grants with strict reporting requirements. The Ministry of Health ended up doing much of the actual monitoring and reporting, but the inter-ministerial confusion harmed performance and had begun to jeopardize Tanzania's ability to win continued grants. The other major weakness of Global Fund governance was that recipient ministries found the contingent (i.e. performance-based) nature of Global Fund programming to be a planning nightmare, and delays in disbursement and reporting between the country and Geneva was a constant source of frustration. (PEPFAR is at least predictable and moves money relatively quickly.) But plenty of those delays were due to the dispersion of responsibility on the government of Tanzania side, and it is hard to see how much the uncertainty could be reduced without losing the performance-based nature of the Global Fund.

A final relatively strong point of the Global Fund in Tanzania is that its mandated governance structure – a group of government, donor, NGO, and private sector

stakeholders known as the Country Coordinating Mechanism – has developed into a reasonably functional institution. Chaired by the Permanent Secretary of the Prime Minister’s Office, the TNCM had its share of problems, and by 2010, it was struggling to manage success, as the volume of Global Fund grants that Tanzania had won threatened to overwhelm its processes. But it at least provides a forum for government involvement in planning and monitoring of otherwise verticalized activities, for meetings between the regular health sector and the vertical fund world, and for some upward accountability (to the Prime Minister’s Office and senior Ministry of Health management) of Global Fund grantees.

Both PEPFAR and the Global Fund, somewhat ironically, have also had a pernicious effect on government capacity through their capacity building activities. Their preferred method for strengthening institutions is to hold seminars and workshops in which government officials and service providers sit in hotels and conference rooms all around the country, having their capacity built and collecting travel and sitting allowances. This ironically has opposite effect, taking them away from their line responsibilities and fostering cynicism and opportunism about aid. To many involved in the sector, the dominance of the “per diem culture” has become a bitter joke. It also erodes the government’s clearly expressed preference, in numerous official documents, for aid that is on budget or delivered through government structures. While the government as a corporate body prefers this as policy, individual officials often prefer projects, and the attendant consulting fees, salary top-ups, travel allowances, per diems, sitting fees, and training opportunities that accompany them. As one informant put it, the “hidden interests

on all levels” emerge in favor of projectized aid; “you will never refuse...people are very much bought.” The problem of donor-funded training is a perpetual problem, not unique to vertical funds. However, in the early part of the decade, the Ministry had plans (originating from the TEHIP project) of moving towards a consolidated in-service training structure, built around training centers in each of the seven administrative zones of the country (De Savigny et al, 2004). A more coordinated approach by PEPFAR and the Global Fund might have used the embryonic zonal training center scheme as a way to support a more rational training process.

Nonetheless, despite the disruptive effects that were present, it is also clear that the sectoral governance structures had not been completely overwhelmed by PEPFAR and the Global Fund. Particularly for malaria, the government had found a way to use the Global Fund for its own purposes. And there have been several instances where even PEPFAR was forced to back down when challenged by the government. For example, PEPFAR initially wanted to procure brand name first line ARVs. The government refused, insisting on procuring generic first line ARVs with Global Fund money. PEPFAR was forced to relent. A second example was PEPFAR’s regionalization of care and treatment activities: Initially PEPFAR partners were distributed haphazardly throughout the country, causing overcrowding at the best facilities and huge gaps in rural areas. The government insisted on a regionalization plan whereby different NGOs were assigned to specific regions.⁹⁷ The contrast with Uganda, where the government was completely unable to push back on PEPFAR at all and HIV/AIDS services remain completely unrationalized, is striking.

Governance: monitoring, supervision and performance management

Even if we stipulate that the Tanzanian health sector has improved its policymaking, planning and budgeting functions, the more transaction-intensive problem of *supervising and monitoring service providers* remains. Tanzania is a large country with poor transportation infrastructure, and supervising all 5,663 health facilities is a challenge. There have been attempts to improve accountability in the health system from both the bottom up and from the top down. Neither have been particularly successful.

The main bottom up accountability initiative was part of the decentralization reform. In addition to creating district-level management teams (as described above), new structures known as council health services boards (CHSBs) were created. These boards, composed jointly of health workers, elected community representatives, representatives of faith-based health facilities, and the private health sector, were designed to be the main mechanism for increased community input into health sector governance at the district level. So far, this has not happened. The Council Health Services Boards often do not exist, and they are usually weak where they do exist.⁹⁸ They meet infrequently, and when they do meet, they are often not given the opportunity to approve budgets or the use of locally-generated resources like user fees, as is their right. Any high hopes that donors had that decentralization would mean genuine community input were overly optimistic (PHDR 2009). Below the council board level, Tanzania's local mechanisms for community input into health governance are the long-standing facility governing

committees. These are more widely present, but their meetings are similarly infrequent and they rarely perform needed oversight. Since budgets are decided at the district level, they have little control over resources, and they rely on health workers to convene meetings. (JEE 2007, Uwazi, 2010). PHDR 2009).⁹⁹ In 2006, 77% of facilities reported that they conduct management meetings at least every six months, and 60% reported routine community participation in these meetings, but only 29% could provide documentation of a recent meeting (TSPA 2006). Clearly neither district boards nor facility committees are currently providing meaningful oversight of health services at the local level.

Top down accountability, from the district or regional government to facilities, did not fare much better.¹⁰⁰ Tanzania has a regional level of government, in between the central level and the district. At this level, a Regional Medical Officer and Regional Health Management Teams are supposed to supervise the district health teams in the 4-6 districts in their area of responsibility. However, this regional level was largely ignored in the rush to strengthen districts for decentralization, and has seen relatively modest funding increases for the better part of a decade. Where supervision does occur, respondents typically described it as pro-forma: regional officials sign the facility visitor's book and fill out forms, but do not spend time offering clinical support, management assistance, or meaningful oversight.¹⁰¹

Beyond routine supervision from the regional level, there was another high-profile, failed attempt to improve upward accountability over the period in question. This was to be via

a pay-for-performance scheme proposed by Norway in 2007-2008. The idea was that facilities that showed improvement on four key outcomes indicators would receive twice-yearly bonus payments. This scheme quickly unraveled, however, over differing views of country ownership and ineffective donor coordination. The Norwegians proposed channeling the results-based payments to district governments through the basket fund. But they quickly ran into problems with the other donors, and with the government. First, the other basket donors believed that earmarking basket money for performance incentives would undermine the principle of untied basket funding, were skeptical that pay for performance could work with Tanzania's extremely weak HMIS, and resented that Norway, a newcomer to the health sector, was now driving the agenda based on a political commitment made by the Norwegian Prime Minister. The government of Tanzania was not particularly interested in pay-for-performance, was not interested in a slow rollout involving a pilot region and rigorous evaluation, and was not interested in hosting a project implementation unit within the Ministry to run the project. But they saw a loosely enforced scheme as a way to boost health worker salaries, which they *were* interested in. They revised the donors' proposed plan to reflect their priorities, and the donors balked. Agreement could not be reached, the scheme remains in limbo, and an opportunity to enhance upward accountability went by the wayside.

Management and regulation of the private sector is the final component of sectoral governance. This is an area in which Tanzania had made relatively limited progress. The health sector in Tanzania has always been relatively public-sector dominated, although religious health providers have traditionally played an important role. Private for-profit

medical services were banned from 1977 to 1991. They have expanded since being legalized, and now play a role, especially in Dar es Salaam, Arusha, Mwanza, and other urban areas. Many of the larger faith-based organization (FBO) providers are directly supported by the government. For example, in 19 districts, a religious hospital has been requested to act as the government's district hospital (these are known as District Designated Hospitals or DDHs). These hospitals receive subventions from the government both for staff costs and on a per-bed basis. District governments are also permitted to use their funding to support other FBO hospitals within their districts with up to 15% of their basket fund grants. However, two challenges are evident. First, the FBO providers are under stress as wages rise in the public sector and they lose staff. Second, the level of their subvention from the government has largely stagnated even as overall health funding has gone up dramatically. The result is that Tanzanians have been shifting away from private sector health providers: in 2001 just over half of visits were to public facilities; by 2007 almost two-thirds were to public facilities.

While in large part the function of oversight and regulation of the private sector has lagged, there has been some progress in accreditation, both for private sector health facilities but more dramatically for drug shops. Many Tanzanians go to informal drug shops for basic treatment, including for illnesses like malaria. The Ministry of Health and the Tanzania Food and Drug Authority, with Gates Foundation and USAID support, have implemented a national program of training and accreditation to turn informal drug shops (known as *duka la dawa baridi*, or “cold medicine shops”) into a new category of drug outlets, below the official pharmacy level but above the level of informal, unregulated

shops. These new shops are known as *duka la dawa muhimu*, or “essential medicine shops.” By 2009, almost 1,500 drug shops had been accredited (JAHSR 2010). There is no conclusive evidence on the overall impact of the program, but Reveillon et al (2006) found that drug availability improved in participating shops in the pilot region of Ruvuma.

Yet while the ADDO program was generally seen as a success, in overall terms the Tanzania Ministry of Health was still fairly slow in coming to terms with the major role played by the non-profit and faith-based sector in health (JEE 2006). Stakeholders frequently described a deeply-ingrained preference for public provision of services. Given that private facilities still accounted for a third of all Tanzanian health facility visits, policymakers have likely missed out on opportunities to improve a key category of health services.

Supply chain

Obviously, what made a difference in Tanzania was getting drugs into facilities.

-World Bank official¹⁰²

There continues to be a pervasive dissatisfaction with the medical supplies system, manifest in recurring complaints by health managers and occasional adverse coverage in the media...stock outs, affecting the full range of essential commodities, remain disappointingly common.

-UNICEF Health, Nutrition, Water, and Sanitation Situation Analysis (2009)

MSD is getting relatively better – I should use the word *relatively* – but they still have not delivered to the satisfaction of their customers.

-Tanzanian NGO representative¹⁰³

The supply chain for medicine and medical supplies is another key support function of the health system. On the specificity/transaction intensity scale, the drug supply chain is a

high-specificity, medium-to low-transaction intensity task. As such, it is a function that should be amenable to improvement.

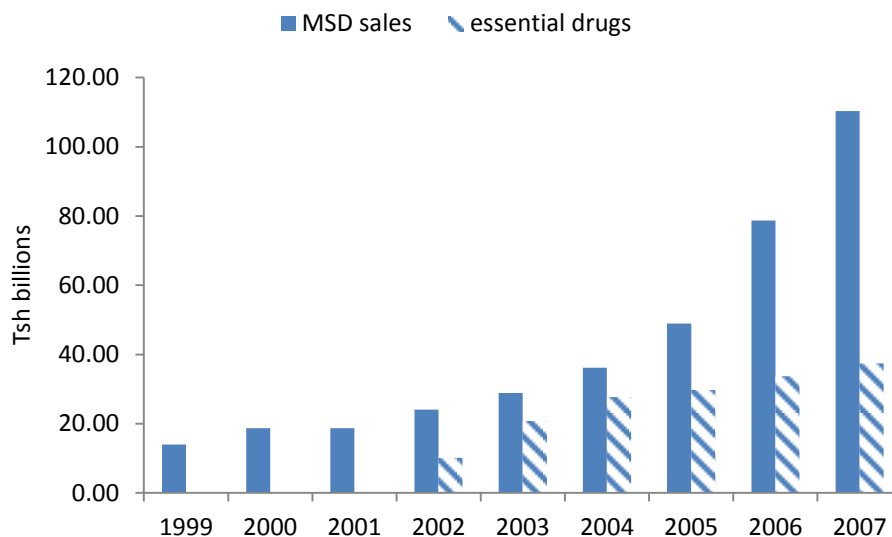
While reliable measures of supply chain performance over time are scarce in Tanzania, a variety of sources suggest that performance improved to a degree. Interviewees were largely in agreement that there had been improvement.¹⁰⁴ 11 of the 16 district councils surveyed by the Joint External Evaluation team (2007) also confirmed that drug supply had improved. The government's Health Sector Strategic Plan II (2003-2008) states that "drug and commodity availability improved at district levels." In 1993-94, 63% of respondents rated drug availability in public facilities as "poor" or "very poor," while in the 2000-01 Household Budget Survey, only 13% described lack of drugs as a problem at health facilities (although in the 2007 HBS this number was virtually unchanged at 11%, and in the 2006 TSPA the comparable number was 12%).¹⁰⁵ Studies from the WHO (2002) as well as numerous Ministry technical and planning documents all cite improvements in drug supply. In a 2005 speech, then-President Mkapa singled out the supply chain, noting that "In my tours around the country, I have witnessed how our health services continue to improve day by day...Complaints about shortages of medicines have greatly diminished when compared with the situation ten years ago." That said, the dramatic improvement recorded in the routine data is highly suspect: the 2008-2009 Health Sector Performance Report reports that no facilities in the country report stock outs of the four "tracer" drugs and the one tracer vaccine. A more realistic assessment of drug availability likely comes from the 2006 Service Provision Assessment, which showed strong availability of key child survival medicines but weaker

availability of higher level drugs: 77% of facilities had all three required child survival medications (ORS, antimalarials, and antibiotics), but only 45% of facilities had a set of required pre-referral medicines (first-line injectable antibiotics, second-line injectable antibiotic, and intravenous solution.)

Reform of the Tanzanian medical supply system began in the early 1990s, when the government took most medical supply functions out of the Ministry of Health and created a new, semi-autonomous agency known as the Medical Stores Department. However, despite technical assistance and financial support from DANIDA and infrastructure support from the World Bank, drug supply remained highly problematic for most of the 1990s. The drug supply system got more attention once broader health sector reform began in the late 1990s. Two main things happened to the supply chain over this period: a series of systemic and process reforms, and a significant increase in resources. Beginning in 2003, the government shifted from the “kit” system, where each health facility received a fixed quantity of medicine and supplies per period regardless of their needs or usage, to an “indent” system, where facilities order drugs based on usage and need. The indent system was later broadened to include all medical commodities, and is now known as the Integrated Logistics System or ILS. Roll out of this system was gradual but by 2006 a majority of facilities had begun to order based on their usage. A further element of reform was that starting in the late 1990s, various aspects of the supply chain which were previously parallelized under the project-based aid regime of the 1980s and 1990s were gradually rationalized and integrated. And in 2002 an electronic data system replaced the manual, paper-based system that MSD used up until that point.

The reforms took place in the context of a sharp increase in resources available for drug procurement. From 2002-2004, the pharmaceutical budget doubled, and by 2006 it had tripled. MSD sales rapidly outpace even this dramatic increase, showing an almost ten-fold increase in sale volumes (by dollar amount), from 14 billion Tsh in 1999 to 110 billion Tsh in 2007.

Figure 4.4: essential drugs budget and MSD sales figures, 1999-2007

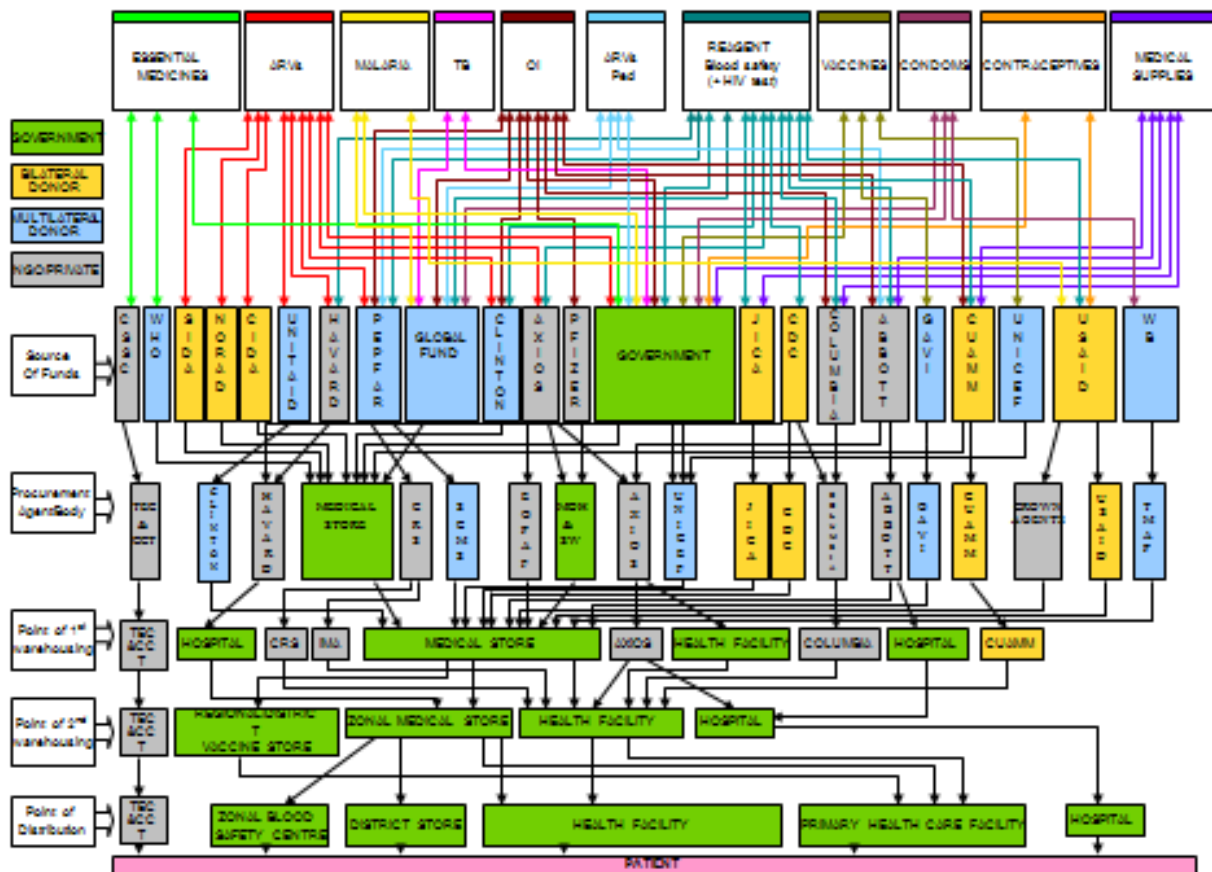


Of these two, it appears that the increased resources have been more valuable than the indent reform, which has received mixed reviews. Only two of the 16 districts surveyed by JEE (2007), for example, said that the indent system had improved things, while a number of stakeholders argued that the indent system pushed too much responsibility to the health facility level, which was not ready to take on the new responsibility of quantification and drug ordering. While the kit system had been inefficient (and almost

certainly too small to last a full month), it may have been more robust to low capacity at the district level. Another persistent source of complaints was MSD's monopoly over public sector drug supply. While districts used their own revenue (generated from user fees or health insurance payments) to procure outside the MSD system, many health sector managers were eager to be able to do this not just with additional funding, with their core drug budget lines (JEE 2007, HERA 2006). But to date this reform has not been implemented.

As figure 4.4 shows, the dominant trend affecting the drug supply chain in Tanzania since 2005 has been the massive increase in medicines outside the essential medicines list. These are largely drugs and commodities from PEPFAR and the Global Fund, including ARVs and ACTs. From the start, both PEPFAR and the Global Fund were bound to make major demands on the supply chain.¹⁰⁶ PEPFAR's response was to outsource its supply chain-related needs to a consortium of US-based aid contractors known as Supply Chain Management Systems (SCMS). At first glance, this appears to be a classic example of the kind of parallelism that PEPFAR has been typically criticized for. However, the picture is somewhat more complex. The government of Tanzania itself procures most first-line ARVs using Global Fund money, while PEPFAR procures second-line drugs via SCMS.¹⁰⁷ Both PEPFAR and the Global Fund use the parastatal Medical Stores Department's facilities for storage and for distribution down to the district level. PEPFAR implementing partners make their own emergency procurements when their facilities have stock outs. Overall, there is broad consensus that for the task of ensuring uninterrupted ARV supply, this system has worked very well.

Figure 4.5: Tanzania's health sector supply chain (WHO 2008)



Did this parallelization of the supply chain have negative impact on the functioning of the essential medicine supply chain in Tanzania? It certainly increased the complexity of the system, as figure 4.5 (above) shows, and various interlocutors believed that it weakened the system as well. As one MSD employee noted:

There are plans going on in practice to expand the warehouses, build more warehouses, but I don't believe if they match...the growth of the logistics needs... At the end of the day the MSD fleet is not enough... You see, I believe that the growth [in logistics needs associate with AIDS treatment] has been so big in comparison to the developments that we have been doing. We have bought new trucks, I am told, four or five 30-ton trucks to be put into the system, but they are not enough.¹⁰⁸

Other donor supply chain specialists, and the Global Fund Inspector General's report on Tanzania (2009), agreed with this depiction. The most systematic work on this question so far comes from a study done by the Euro Health Group (2007), which shows that Global Fund fees do not cover the full marginal costs of MSD's Global Fund-related activities, meaning that the essential medicines supply chain subsidizes the vertical program one.¹⁰⁹ Another supply chain specialists concurred with this interpretation, noting that over its first five years, PEPFAR had added very little infrastructure or delivery capacity to make up for its heavy use of MSD facilities. PEPFAR's supply chain-related activities – technical assistance to special ARV units in the Medical Stores Department, employees in each zone charged with liaising between PEPFAR facilities and the MSD, installation of an Integrated Logistics System, programs to support private sector distribution networks – were in his view worthy projects but did not address this basic capacity constraint.¹¹⁰ A relatively crude metric of the capacity gap is that while total sales have increase ten-fold, the number and tonnage of truck transport has roughly doubled and storage has quadrupled, suggested that capacity expansion has not kept pace with expansion.

Yet it is far from an open and shut case. Two different high level MSD officials argued that the Global Fund in particular has been beneficial to the supply chain. One described the parlous financial condition of the MSD circa 2003, and argued that MSD has returned to financial health thanks to fees that it receives from the Global Fund. Both cited capacity building resources provided by Global Fund round 4, which supported the

expansion of storage capacity, transportation, information technology upgrades, and training for staff.

It was probably, I can say, a blessing for MSD. Because when Global Fund was issuing this money, it was actually also ready to support MSD in trying to develop infrastructure, and also some investments in capacity building, so for example... we have been expanding storage capacity though the Global Fund, we have actually even procured some distribution vehicles though the Global Fund, and also we went to some trainings.¹¹¹

The overall picture is mixed. Donors by and large seem to believe that vertical programs are dangerously straining the supply chain, while MSD officials maintained that the opposite was true. It seems likely that while the system is not, as one particularly pessimistic donor official suggested, on the verge of collapse, neither did it maintain the momentum from the improvements that began in the pre-2005 period of health reform. And by late 2009, the picture seemed set to shift again, as vertical fund donors decided to shift into supporting capacity expansion of the supply chain system. Between 2005 and 2009, the Global Fund spent \$6.6 million on storage, transport, and information technology for MSD, but this initial investment will be superseded by supply chain support contained in Tanzania's successful Round 9 Global Fund proposal. PEPFAR has also signaled that it will be sharply increasing its aid to the supply chain, as part of an expanded "cross cutting" category of funding.

Human Resources

You know, everyone's been crying about this problem, and the PO-PSM isn't solving it and I think there must be reasons why there're not solving it. But I don't know what those are, and I think somebody needs to do really a good political analysis of what the hell is going on and why they're frozen on this issue, why they are not interested in implementing a hardship allowance. There's got to be a reason.

-NGO representative¹¹²

So long as I've been here, the government's been talking about it [human resources for health] as a crisis. Crisis, crisis, crisis! Well every year it's a crisis, and it doesn't move, and the situation is as grim as it even was.

-donor representative¹¹³

I think [per diem culture] is very, very bad, I think it's a very, very, very bad thing for civil service productivity, and for a culture of public service. But I think that Ministry of Finance has done it deliberately – this is my reading of the situation – in order to essentially extract a slice of donor money to prop up their payroll. Which they can't do directly, and so they do it indirectly, by setting high rates of per diem that they know are going to be paid largely by project funds.

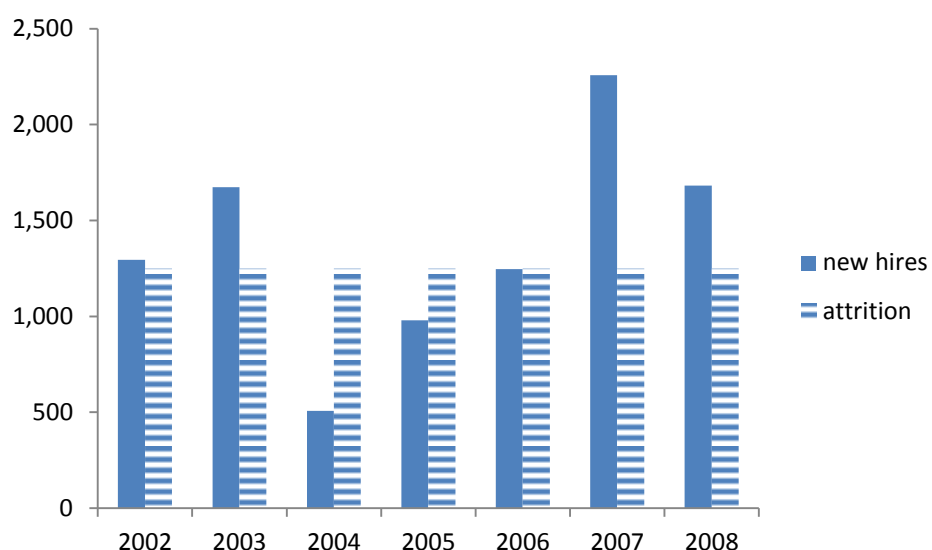
-Health sector analyst¹¹⁴

There's a lot of friction in the system. And they call the friction capacity building. That's how you spend the money on yourself. Trainings, sitting fees, buying vehicles that you're going to use, having a secretary do your personal business, all kinds of things like that. So anything that's called capacity building also has a large, or decent, element of siphoning or friction...The donors made it worse, they brought the term capacity building, and the Tanzanians have seen how beneficial it is. Everyone in Africa has seen how beneficial it is to build your own capacity.

-Advisor to President's Office-Public Service Management¹¹⁵

In the course of research, it was very common for interviewees to state the opinion that the human resources shortage is the largest problem in the Tanzanian health sector. Most also believed that the situation has not improved since the initiation of health sector reform.¹¹⁶ Indeed, the data bear this out. Figure 4.6 (below) shows hiring of health workers by district governments, based on payroll data, plotted against the average attrition rate, as estimated by Smithson (2009).¹¹⁷ Clearly, any increase in human resource numbers has been marginal at best, in the context of rising population and increasing demand on health services.¹¹⁸

Figure 4.6: Health worker hiring and estimated attrition, district level, 2002-2008



Some basic statistics outline the scope of the challenge: Tanzania has approximately 25,000 skilled health care workers, which includes 1,339 doctors, approximately 1,000 assistant medical officers, 7,000 clinical officers and 12,000 nurses, for a population of almost 38 million (WHO 2004).¹¹⁹ This means that Tanzania has just 38% of the staff required by the Ministry of Health's staffing norms. The distribution of these health workers is also highly inequitable: in 2002 Dar es Salaam region had just under 7 doctors per 100,000 residents, while most other regions had less than one doctor per 100,000. Put differently, the public sector has just 884 doctors, and at least 300 work at Muhimbili National Hospital (JEE, 2007). This leaves just 500 doctors for the other 5,000-plus government health facilities.

While the human resources shortfall dates back to the collapse of the economy in the 1980s, the initiation of health sector reform in the 1990s was accompanied by a donor-enforced public sector hiring freeze (from 1993 to 1999) and the redundancy of several thousand low skilled health workers. The result was at least a 5% decline in nurses and clinicians (Wyss, 2004), in the context of rapid population growth and an emerging AIDS crisis. Tanzanian interlocutors repeatedly referred to the donor-enforced hiring freeze as the main reason for the current human resources crisis; one former Ministry official asked, “What did they *think* was going to happen?” The dramatic decline in public sector hiring is illustrated starkly by the 2001-2002 Health Worker Census, which shows that hiring by the public sector went from roughly 1,500 new workers per year in 1992, to 100-200 per year at the low point of 1997-98 (Wyss 2004). The situation worsened further when in the course of the decentralization process, district governments were given responsibility for human resources management. As in Uganda, this was disastrous in practice, and (unlike in Uganda), the human resources function was recentralized after several years.

Human resources for health have become a government priority very recently, and some progress has been made in the past two years. There is now a national HRH Strategic Plan; approval for the hiring of 3,600 new health care workers has been granted; and public sector salaries were raised for both doctors and nurses every year from 2003 to 2008.¹²⁰ In 2003 certain cadres of medical officers (*daktari daraja la pili*) made less than 200,000 Tsh per month (\$150). By 2008, base salary for this cadre was between 600,000 and 700,000 Tsh per month (approximately \$450-\$525). Over the same period, one of the

nursing cadres (*afisa muuguzi*) received increases from approximately 100,000 Tsh per month (\$75) to 300,000 (\$225). This pattern of substantial salary increases is a notably better policy than the compensation decisions made in the late 1990s and early 2000s, when salaries were held constant but allowances were raised sharply, to disastrous effect (Smithson 2004). Some progress has also been made on training as well. New student intake nationally has increased from 2,500 students to 3,500, and capacity expansion in medical and nursing schools is finally underway. But despite this recent activity, staffing levels remain far below both national targets and international standards.

Given the depth of the problem, human resources might have seemed a natural entry point for Tanzania's health sector donors. And according to the theoretical framework introduced in chapter 2, improving the human resources situation should be an achievable task: Most human resource activities are high specificity, low transaction intensity activities. Yet the human resources picture *did not* improve over the period in question in Tanzania. This, in a superficial sense at least, runs counter to the theory that high specificity, low transactions intensity services should be the easier sectoral functions to improve.

There are a number of reasons why this was not the case in Tanzania. The simplest reason is the Tanzanian health agenda is deeply influenced by donor priorities, and the donors were not interested in human resources for health for most of the period in question. With little donor attention, the Ministry naturally turned its attention and capacity towards higher profile areas, and the Human Resources Department languished.

But it is not just the donors' fault. The Tanzanian government has also performed poorly on the human resources front. One indicator of this is that there is a persistent problem of funded but vacant posts. A second is the failure to implement a scheme to attract health workers to rural areas. Despite numerous feasibility studies, the government has not created an incentive package to incentivize rural service. Donor hostility to investment in human resources explains only some of Tanzania's persistent difficulties in this area.

There are several competing explanations for this. The biggest problem is simply the fact that human resources policy involves multiple agencies, including the Ministries of Health, Education, and Finance, the President's Office for Public Service Management, PMO-RALG, and district governments. This makes it extremely difficult to coordinate and implement new policies. According to one respondent, "It's extraordinarily difficult because you automatically fall into a realm of many activities, many components, many ministries, and many departments that you have to deal with," noting further that within the Ministry of Health, the Human Resources Department, the Planning Secretariat, and the Department of Administration and Personnel were involved, while outside the ministry the landscape was even more crowded, requiring buy-in from Ministries of Finance, and Education, as well as from the President's Office for Public Service Management and the Prime Minister's Office for Regional and Local Government.

A second factor relates to the political economy of the civil service wage bill. The theory advanced by a number of respondents is that certain factions within government are wary of incentive pay for rural health workers, for two reasons. The first is the fear that if rural

health workers receive incentives, rural civil servants throughout the entire government (i.e. most civil servants) will claim the same benefits. Rural teachers, for example, a bigger, more politically powerful group, might immediately begin agitating for benefits. In a similar dynamic, better-organized, politically more powerful urban health cadres could immediately demand the same increase as rural cadres, thereby inflating the wage bill and eliminating the incentive effect. This means that the obstacle to incentive pay is ultimately the Ministry of Finance: as one person noted, “you’re at the mercy of Ministry of Finance to get the budget, to get the people.” Others suspected subtle IMF pressure on the Ministry of Finance: “Finance felt that their hands were tied by the IMF... and the IMF keeps saying no, no, no, it isn’t true. But you talk to people and they say it *is* true, but not talked about.”

A further challenge to the human resource picture over the past decade has been the arrival of vertical funds. Actors involved with the system typically describe a negative effect. Government documents decry “an unfortunate attrition of talent from the Ministry of Health to donor and NGO programs,”¹²¹ as vertical programs “continue to take away staff from traditional health service delivery” and into newer interventions like voluntary counseling and testing.¹²² Interviews also described widespread attrition from the government to PEPFAR programs. As one former Ministry official observed: “So much training, so much money, it’s diverting even the attention from the priority interventions to the HIV agenda. Basically that’s another story. It’s no secret! All the resources that go to the facilities, they have been diverted to HIV. People are not paying attention to the routine, other services.... We have so many players in the HIV arena, pulling people from

A, B, C, and D. It creates havoc at the district level.” Another noted that HIV/AIDS programming “has really diverted a huge bulk of staff into counseling, into all sorts of training, which was needed, but which has been detrimental for other priorities, like maternal mortality.”

For some sense of the scale of this attrition, consider that a typical PEPFAR care and treatment NGO consists of a technical and administrative staff based in Dar es Salaam, in addition to a group of financial, medical, monitoring and evaluation and support staff (10-12 people/region) based in each region of the 3-4 regions in which the NGO works. Such an NGO could easily have 80-100 staff working on HIV/AIDS activities.¹²³

Moreover PEPFAR and the Global Fund indirectly employ many more medical professionals, who work at government facilities, but in ART care and treatment units rather than in general health care. These workers are paid an “extra duty allowance” by PEPFAR; one PEPFAR NGO, for example, paid a flat fee of 10,000 Tanzanian shillings per day (\$7.50). Clearly to maintain over 200,000 people on ART requires a great deal of staff time. Hirschhorn et al (2006) estimates that every 1,000 people on ART requires from 1-2 physicians or clinical officers, and 2-7 nurses. If we estimate, based on this, a ratio of 1.5 doctors per 1,000 ART recipients, then antiretroviral therapy may be employing in the range of 25-30% of Tanzania’s stock of MDs. This is without considering other PEPFAR and Global Fund activities, such as counseling and testing, prevention campaigns, orphan care, TB treatment, and so on. Estimates from government of Tanzania planning documents yield similar ratios: According to the Government of Tanzania’s HRH Strategic Plan, Tanzania’s public sector health facilities have a total of

29,063 skilled health professionals, while the National HIV/AIDS Care and Treatment Plan estimated that 9,299 skilled medical personnel will be needed for HIV/AIDS care and treatment.¹²⁴

PEPFAR's major human resources-related activities have been to provide in-service training for HIV/AIDS related staff, to support the rehiring of retired staff, the provision of technical assistance for HR management and the installation of a human resources information system. The only program that actually added to the stock of Tanzanian health workers is the re-hiring of retired workers – by 2007, this had resulted in the addition of 8 previously-retired clinicians and 16 nurses.¹²⁵ PEPFAR implementers stress that the in-service training that they provide has led to improved workforce skills¹²⁶, but other interlocutors point out that training itself takes clinical professionals away from their main responsibilities.

The net effect is impossible to determine: Given the 1990s hiring freeze, there was almost certainly “slack” in the system in the form of unemployed health workers (23,474 health workers graduated from training institutions in the 1995-2005 period, yet only 3,836 were hired into government service.¹²⁷) Some were hired in the private health sector, and some probably emigrated, but there was likely a pool of health care workers who were either unemployed or in other sectors.¹²⁸ Yet in the short term, given the clear diversion of dozens of qualified clinical professionals into NGO support functions – to say nothing of doctors or AMOs have shifted into care and treatment – it is likely that PEPFAR's

parallel operational structure and lack of HRH programming added to the stress on an already strained human resources system.

Monitoring and Evaluation

We have an extremely weak M&E system, which is fundamental... if you want to be able to tell the story of where to put your resources, you have to have evidence.

-donor official¹²⁹

The routine monitoring system has been never working...I used to sit in the health sector review meetings 3 or 4 years ago and it wasn't pushed from either side...it was always being discussed, the weakness of the routine system. There didn't seem to be any push from the donors or the government to get to the routine system working. So in my naïve mind I kind of raised the question, maybe it's not meant to be working. Nobody wants to know what's happening or not happening down there.

-Tanzanian civil society representative¹³⁰

There has been a continuous flow of information between Ifakara and the Ministry...Ifakara was feeding them this evidence. The DSS (Demographic Surveillance System) – it's a fantastic tool.

-donor representative¹³¹

You can get results [from the DSS system] translated, and you can make sure that the Minister and everyone is fully briefed, and can proudly raise the Tanzanian flag over these results. It's much easier for the Ministry to take on results that come from inside the country, and are presented by national scientists, then something that comes from far, far away.

-malaria researcher¹³²

Tanzania's Health Management Information System (HMIS) was universally described as an aspect of the health system that had not improved meaningfully; it remains “the weakest link,” and has suffered from “a complete lack of attention.”¹³³ The inclusion of data from faith-based and other private facilities appears to be the only improvement of note over the past decade (JEE, 2007).

Yet despite the fact that the HMIS remained unreliable, Tanzania's progress was nonetheless heavily dependent on data. What explains this paradox? The answer is in Tanzania's use of a creative “second best” institutional adaptation to the weakness of

their routine data system. This was the avid use of Demographic Surveillance Systems (DSS) sites to evaluate promising health interventions. A Demographic Surveillance System is a field epidemiology site that collects vital statistics on the health of the entire population of a small area, by means of periodic home visits by outreach workers. Every birth and death is recorded, along with information on cause of death, collected via a standardized verbal autopsy protocol. The importance of the DSS sites to the major health initiatives in Tanzania cannot be overemphasized. Almost all of the key service delivery interventions were piloted and evaluated in DSS districts: TEHIP took place in Rufiji and Morogoro districts. (Rufiji already had a DSS, and one was built in Morogoro as part of the project). IMCI was evaluated via the DSS (Schellenberg et al, 2004), as was the switch to the mass campaign method of delivering Vitamin A (Masanja et al 2006). Above all, extensive highly policy-relevant malaria research was pioneered through use of the DSS, including numerous influential studies on ITN usage. A DSS is not a panacea; eighteen countries worldwide (including Uganda) have at least one site, and in many cases the sites are valuable research sites but do not play a large role in policy formation. Moreover, surveillance data is not nationally representative and does not provide the kind of comprehensive overview needed for the effective day-to-day management of a health system. However, the Tanzanian experience shows that in the right circumstances, they can be a valuable tool for policy-relevant research, and a second-best short cut when a nationally representative routine data system is out of reach.

The other significant development relating to the health information system over this period was the arrival of PEPFAR and the Global Fund, each of which brought detailed

reporting requirements, and which resulted in the creation of parallel monitoring systems.

Numerous interviews argued that duplication of M&E was harmful to the development of the HMIS. One Tanzania HIV/AIDS NGO manager noted the following:

They came with so many vertical systems, with getting their own information system. And I can understand why, in some areas, because even our system, the HMIS is not strong enough. It's weak. But I always ask, so do you run away from the weak system and you start your own, or do you try and improve that system? ... So I felt it paralyzed totally the existing system of monitoring, because this is where the money is coming, this is where you have to report. So it was very vertical. This was the biggest challenge.¹³⁴

Other donors echoed this point:

The Americans will tell you, and it's one of the problems with the PEPFAR project: They have all these indicators that they have to report on, so they have to set up parallel systems. So they distort the system to get the workers that are recipient of their funds to deliver on these things. The problem, then, is that this detracts particularly from the government level.¹³⁵

Like the vertical supply chain, the vertical reporting system was not completely parallel to the government system. Especially for PEPFAR, it consisted of additional M&E personnel and structures bolted on to the government system, but which were paid by and responsive to the priorities of PEPFAR rather than the Ministry. HIV/AIDS care and treatment implementers, for example, made a point of emphasizing that they used the forms and registers from the National AIDS Control Program Care and Treatment system. PEPFAR partners typically paid the salary of a data clerks at the district level, and an M&E staffer at the regional level. When the government collects ART data on a monthly basis for its own reporting, the PEPFAR-funded data clerk helps input the data electronically, and the regional M&E officer helps ensure that the data was complete and accurate and ensured that it was passed up NGO headquarters, where it is then reported to PEPFAR headquarters.¹³⁶

Given the dubious functionality of the HMIS prior to the arrival of vertical funds, it is not clear that they actually did much damage. However, the missed opportunity is clear. The parallel system that was set up instead may not have damaged existing capacity, but neither did it add value. However, by 2010 the picture looked considerably brighter, because of two developments. The first was gradual coalescence of a group of donors committed to a program of HMIS strengthening. In recent years the Dutch, the Japanese, the Norwegians, and the US (via CDC) were all promoting their own HMIS reform programs, and took several years to reach agreement on a joint strategy among all involved donors and with the Ministry of Health. The second and potentially more transformative development was the provision for an expanded, nationally-representative Demographic Sentinel Surveillance system to be financed by Tanzania's Global Fund Round 9 proposal. As with the supply chain, vertical programs initially put considerable stress on routine systems through parallelization, but Tanzania's reasonably functional Global Fund process led to money and momentum eventually dedicated to strengthening of this function.

Overall, the extremely slow progress of the health information system in Tanzania supports the predictions derived from the PWF framework in chapter 2. Routine data systems are highly transaction-intensive, since numerous forms and registers must be filled out for each health center or hospital visit that occurs (in Tanzania there are 12 separate registers at each facility), after which the data must be aggregated and put into usable form. They also have low specificity: It is difficult to know whether routine data systems are capturing health statistics accurately unless you do regular audits or have

solid population-based data for comparison purposes, which most poor countries do not have. As a result, the prediction in chapter 2 was that the HMIS function would be one of the weakest elements of the health sector reform program, and this was indeed the case in Tanzania.

Health financing

Tanzania had had the CHF [Community Health Fund] and the NHIF [National Health Insurance Fund] for a long time, just about 10 years... But you have maybe 10% of the population that has some sort of coverage, and despite all the hullabaloo of the CHF, the penetration is not great, the turnover is huge, and the benefits being offered better than nothing.... And there really isn't a plan for going to scale with these things.

-multilateral donor official¹³⁷

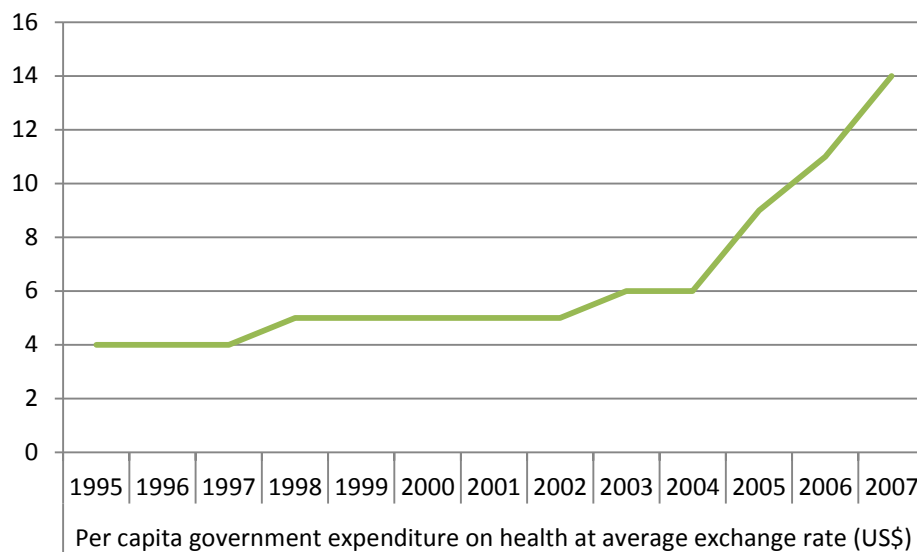
The National Health Insurance Fund is not especially popular, it essentially only covers civil servants, it's regarded as a payroll tax, and it's only putting back in health care about a third of what it collects in premiums Meanwhile you've got these little Community Health Fund schemes, which in my view have been a bit of a disaster. They have very, very low, and possibly even declining, coverage. The premium varies from district to district, because they can basically choose what to collect. Money's been piling up in the districts...so they've basically been collecting money but have not been plowing it back into health care. So I'm not hugely impressed with that in practice.

-health sector analyst¹³⁸

There have been four main trends in health financing in Tanzania. The first has been a major increase in funding in the sector, from \$5 per capita in 1999 to \$14 per capita by 2007. Second, the donor share of the health budget has increased dramatically: on-budget donor funding such as the basket fund comprises 10-20% of the health budget, and HIV/AIDS funding from PEPFAR and the Global Fund equals and may exceed the total non-HIV/AIDS health budget. While the health sector SWAP funding started at \$20.9 million/year, and has totaled \$234 million in the 2002-2007 period,¹³⁹ PEPFAR started at \$50 million in 2004 and quickly rose to over \$300 million *annually* by 2008. And the Global Fund, by late 2008, had disbursed a cumulative total of \$308 million. Third, decentralization has resulted in a greater absolute level of resources allocated to district

health services, assisted by the donor basket fund, which puts aid money directly on district budgets. Fourth, the government of Tanzania has attempted to increase local financing via the introduction of user fees (in 1993), and via two national social insurance schemes, the Community Based Health Fund, and the National Health Insurance Fund.

Figure 4.7: Government health spending per capita 1995-2006



Source: WHO Statistical Information Service and World Health Report 2010

The increase in funding has been dramatic. It has been financed by overall fiscal expansion and donor largesse, rather than increased domestic commitment to health per se, since health has remained steady at roughly 10% of the budget. Nonetheless, it has resulted in a serious increase in the absolute level of resources available to health policymakers, and would seem to be in itself the explanation for Tanzania’s health progress – were it not for the fact that other countries, Uganda included, have expanded spending in similar ways with less impressive results. Spending alone is not enough to

improve basic health outcomes, as the cross country literature has shown (Filmer and Pritchett 1999).

However, the modality by which increased resources were provided was important in Tanzania. In both Tanzania and Uganda, health sector aid was consolidated into a SWAP. But whereas in Uganda, aid was directed towards the national government, in Tanzania a substantial portion was directed to district health budgets via the basket fund. The percentage of expenditures used at the local level has not increased dramatically over the past decade: it remained relatively constant at around 35-40% of the total (although this is significantly higher than in the previous decade). Rather it seems to be the absolute rather than the relative level of resources at the district level that made a difference; the effect of dramatic increases in previously meager district budgets seems to have made more of a tangible difference than comparable percentage increases in the Ministry budget. In addition, the donor basket fund has been a source of predictable and stable funding for district health services, specifically development rather than recurrent funding, as well as (to a lesser extent) the non-wage portion of the recurrent budget. In Uganda, where the donors made the decision to shift out of sectoral support and into general budget support (and where no district basket fund was ever instituted), the districts often complain that they are starved of resources, and indeed the increase in funding for districts in Uganda has been exclusively for the wage bill. Development and non-wage recurrent funding has actually decreased (Public Expenditure Review, 2009). In Tanzania, the existence of the donor-funded district basket fund means that this has not been the case. Smithson (2004)

points to a four-fold increase in operations and maintenance funding between 1999/2000 and 2003/04, largely due to the advent of the basket fund.¹⁴⁰

The other notable development in health financing relates to Tanzania's efforts to raise domestic resources for health, initially through the imposition of user fees and then via several health insurance schemes. The first of these, the imposition of user fees in 1993, is another clear point of divergence with Uganda. When Tanzania imposed the fees, they were in line with international policy trends, but international policy trends shifted over the 1990s. By the early 2000s, there was strong donor pressure (particularly from DFID) to drop user fees again, and loud plaudits and additional aid for countries, like Uganda, that followed this course. Tanzania held its ground against this pressure. As one interlocutor noted:

When there was all this discussion on abolition of user fees, the government was very clear, saying: For us, we know. We have had free services, and that equaled to no services. So okay, thank you. We have had this experience. Now we want to embark on a system that provides some resources to the facilities.¹⁴¹

In the current system, care is free for children under 5, adults over 60, pregnant women, adults with certain chronic diseases, and for the extremely poor. Survey evidence shows relatively high adherence to the free services for children policy (TSPA 2006), although other aspects of the waivers and exemptions policy (such as free services for the very poor) are essentially ignored.

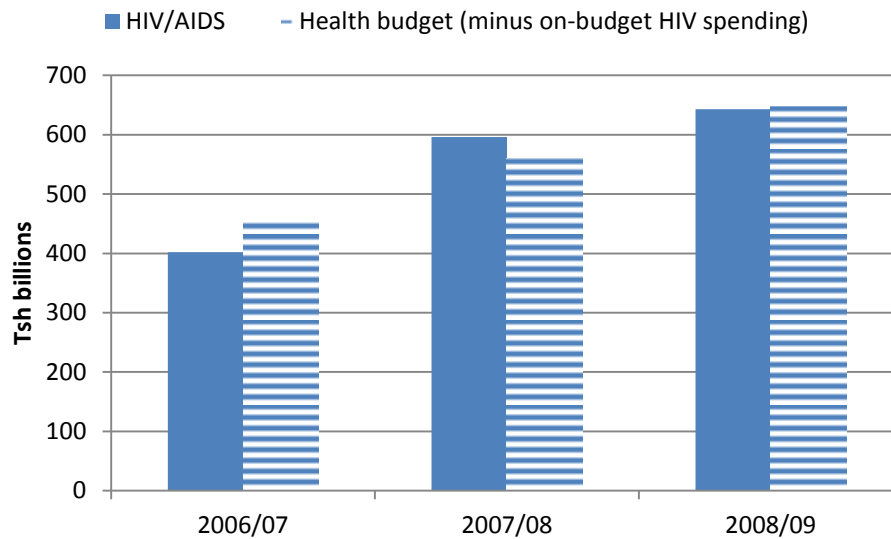
The other strategy to inject domestic resources into health services has been via the National Health Insurance Fund (NHIF) and the Community Based Health Fund. The National Health Insurance Fund was started in 1999/2000 as a scheme for civil servants,

designed to be extended eventually to all formal sector employees. The Community Health Finance system is a pre-payment plan for the vast majority of people employed outside the formal sector in rural Tanzania (there is a counterpart urban version known as TIKA). In the CHF, participants pay between 5,000-10,000 shillings per year to receive a health card that entitles them to free treatment across a range of basic services for the year. Both the National Health Insurance Fund and the Community Based Health Fund have failed to gain large memberships. Only 5.6% of the Tanzanian population was covered by CHF or TIKA by 2009 (HSSPR 2008-2009), while the NHIF has similarly failed to reach critical mass. In addition, both funds have had trouble spending the resources that they collect. By 2010, a National Health Financing Strategy had been commissioned, and there was discussion of consolidating management of the two funds. In general however, the continued weakness of social insurance mechanisms meant that there has been continued reliance on more regressive user fees.

The final issue is the enormous HIV/AIDS budget, equal in size to the entire non-HIV health budget (see figure 4.8). Tanzanian interlocutors also frequently voiced suspicion that huge amounts of PEPFAR funding was spent on overhead for the twenty-plus largely US-based NGOs that serve as PEPFAR “implementing partners” in the country. Aside from overhead, there is also no question that the cost-effectiveness of these programs is low, when compared to other life-saving health interventions. For much of the period in question, the imbalance in funding was generally accepted as unsustainable in the long run, but unavoidable in the short run, given that seemingly unlimited resources were available from PEPFAR and the Global Fund for HIV/AIDS programming. However,

starting around late 2009, the conversation began to change, when it became apparent that PEPFAR and Global Fund resources were not going to increase further. By 2010 Tanzania had enrolled over 340,000 cumulative patients on ART (out of an estimated need of 440,000), but no one knew how many current ART patients there were. The goal of universal access seemed to be slipping away, even as costs threatened to rise further. PEPFAR had begun to encourage Tanzania to consider taking on a greater share of the HIV/AIDS funding burden out of domestic resources, but that raised the possibility of HIV spending crowding out other health resources. Advocates for a renewed focus on prevention (such as TACAIDS head Dr. Fatma Mrisho) began to receive a more sympathetic hearing, although donors and government seemed at a loss for ideas about effective prevention programming, beyond the biomedical interventions (such as PMTCT) that encompassed 80% of PEPFAR's prevention budget. At the time of writing, it was a dilemma that threatened to overshadow and even reverse the success that Tanzania had achieved in its national HIV/AIDS response up until that point.

Figure 4.8: HIV/AIDS spending vs. rest of health budget



Source: HIV/AIDS data from the 2009 HIV Public Expenditure Review; health spending data from the 2008 Ministry of Health Public Expenditure Review

IV: CONCLUSION: INSTITUTIONS, POLICY NETWORKS, AND POLITICS

Mtu ni afya (Humanity is health).
-Julius Nyerere

Nyerere had a lot to do with it...Nyerere's personal commitment not only to equitable services, and basic services to the rural poor, and a general commitment to the Tanzanian peasantry, but also his interest in health specifically.

-health sector analyst¹⁴²

Health is very political. Distribution of mosquito nets will be very timely in the electoral campaign. It's better to distribute a mosquito net than a t-shirt - unless the t-shirt is impregnated with insecticide!

-donor official¹⁴³

Full analysis of the causes of Tanzania's progress awaits comparison with the Uganda case, and will be presented in the final chapter. However, the following is a preliminary discussion of several key factors and themes, drawing comparative conclusions about the role of malaria control, decentralization, health system functions (HRH, supply chain, HMIS, and health finance), and finally broader issues of governance and political economy, and their effect on the health sector in both countries.

Malaria control

In the service delivery section, we see that malaria control has been a major contributor to Tanzania's mortality decline. Yet this simply raises the question of why was Tanzania able to implement better malaria control measures than other countries. Comparison with the Ugandan case highlights the extent to which the key factors are deeply institutional in nature. While the Tanzanian National Malaria Control Program is a relatively strong institution, with continuity in leadership, a degree of autonomy from political interference, and openness to outside interventions and assistance, the contrast with Uganda's NMCP is stark. Uganda's National Malaria Control Program had poor relationships with most donors and malaria stakeholders, and was not particularly open to outside technical assistance: It did not host any embedded technical units or advisors, for example, and there is no analogous institution to Tanzania's ITN cell. More importantly, it was an intensely politicized institution. Key decisions about technical issues, such as procurement of drugs and the specifications of bed nets, were decided at the presidential level. Together with Uganda's Global Fund embezzlement scandal (described in more detail in chapter 5), this politicization of technical procurement issues resulted in a turbulent relationship with the Global Fund. These issues may have all been symptoms of deeper problems, symbolized by the arrest in early 2010 of the head of the NMCP and another colleague on charges relating to the misuse of donated antimalarial drugs for personal gain. Given the dramatic differences in the quality of institutions response for

implementing malaria programs, it is not surprising that these programs were more successful in Tanzania than in Uganda.

Decentralization

Decentralization is another aspect of the Tanzanian case that comes sharply into focus when compared to Uganda. The roots of Tanzania's decentralization in the TEHIP and other district-level system-strengthening projects highlight several programmatic lessons, discussed in chapter 3, related to the importance of evaluation, of policy translation, and of genuine, long term investment in capacity building of local counterparts. Another structural factor that aided decentralization in Tanzania was the lack of politicized ethnicity. Tanzania's unusually strong national identity meant that decentralization never devolved into a tool for politicians to direct resources to favored ethnic groups. Yet what the contrast with Uganda's decentralization experience shows is that the most important thing was what Tanzanian leaders *did not* do, and this is related to the broader political economy of Tanzania. Tanzanian politicians did not politicize the decentralization process by turning it into a tool for patronage, as Yoweri Museveni did in Uganda. There was undoubtedly opportunism in the Tanzanian implementation of decentralization, but it pales in comparison to Museveni's out-of-control proliferation of new districts (Uganda had 38 districts in 1991, today it has 114). Museveni's machinations threw the technical work of line ministries attempting to decentralize their functions into utter chaos.

Decentralization in the health sector of poor countries can only work if the center invests

time and money training district health management teams. This was impossible in Uganda due to the constant creation of new districts.

Health system functions

Full comparative analysis of the broader health system functions and health system strengthening section will again be presented after considering the Uganda case.

However, several conclusions can be drawn from Tanzania's experience. Overall, the Pritchett/Woolcock/Fukuyama framework for understanding health system strengthening performs well. Tanzania underperforms relative to the predictions derived from the theory on the low-transaction intensity, high specificity function of human resources for health. But the framework is essentially on target on the inherent difficulties of performance monitoring, of building routine information systems, of improving quality of services, and of developing a system of health insurance based on pre-payment. It also accurately predicts that the two relatively tractable functions would be the budgeting/planning/policymaking functions in the governance category, and the supply chain function.

Governance

Ultimately, the differences between Tanzania and Uganda in child mortality outcomes and in health system development have the same source: governance, institutions, and politics. Here there are factors that differentiate Tanzania and Uganda. Chief among these

is Tanzania political culture, mediated through the legacy of Nyerere and *ujamaa* socialism. The post-independence Tanzanian state had an unusually strong ideological commitment to basic social services, rooted in Nyerere's distinct brand of humanistic socialism. Most post-independence African leaders propounded some form of socialism. Nyerere appears to have actually believed in it, to the point of pushing the health system in a progressive, primary health care-oriented direction before it was on the donor agenda. Even his disastrous villagization experiment of 1973-1976 was in part motivated by the desire to make social services more accessible.

Nyerere left the presidency in 1985 and Tanzania has long since discarded socialism. But this welfarist legacy lives on in several ways via the institutions that Nyerere created, especially the ruling party, CCM. The party's political culture is still influenced by the priorities of its founder, and this helps explain the priority attached to health services in Tanzanian politics. This can be seen in the way CCM still uses health-related promises as an electoral tactic: The Ministry of Health, for example, produced its highly ambitious Primary Health Care Development Plan ("MMAM," or *Mpango ya Maendeleo ya Huduma za Afya za Msingi*), which promises a dispensary in every village by 2017, in response to a commitment in the last CCM election platform (Smithson, UNICEF 2009). While the thrust is on building structures rather than improving services (an identical plan in education resulted in an unfortunate quality/quantity tradeoff), it is at least a manifestation of some degree of popular responsiveness on health issues. Party leaders also talk quite a bit about health services in public. President Kikwete, for example, has taken an active role in international forums on malaria control, interacting with donors,

and generally signaling that health was a priority. A good portion of this is for the benefit of donors, but some of it is genuine. The contrast with Museveni's lack of interest in the health sector (and unwillingness to take the simplest steps required to keep donor health money flowing) is glaring.

This aspect of the ruling party's political culture affects the priority given to health issues, and helps ensure that health sector actors are granted some degree of technical autonomy. The comparison with Uganda is stark. Since health was not a priority, the influx of money into the health sector was seen as more of an opportunity for corruption and patronage, symbolized by the arrest of top health sector leaders for embezzlement in 2005. In Tanzania over the period in question, there was genuine quality at the top levels. One example of this was the high opinion that various respondents expressed about the last previous three Chief Medical Officers (Dr. Peter Kilima, Dr. Gabriel Upunda, and Dr. Deo Mtasiwa). In stark contrast to Uganda, there was strong continuity at the top of the Ministry, and also unlike Uganda, there were no high profile corruption scandals.¹⁴⁴ Corruption at the service delivery level was common, with side payments and bribes a fact of life. Moreover, grand corruption is by definition hidden and definitive conclusions are difficult to draw. But over the course of dozens of interviews with stakeholders in both countries, it became clear that large scale corruption at the Ministry level was not a common occurrence in Tanzania over the period in question, while it was almost routine in Uganda.

A second institutional/political legacy relates to CCM as a political institution. The strength and institutionalized nature of the ruling party helps to de-personalize power in Tanzania, and limit opportunism by individual politicians to a certain extent. For example, it is a well-established norm that post-Nyerere Tanzanian presidents serve only two terms. The importance of this for the health sector is not obvious, especially from simply observing the Tanzanian case. But the comparison with Uganda is instructive. The single most critical turning point in the Ugandan health sector was when, in the 2004-2005 lead up to a referendum on the elimination of presidential term limits, Museveni replaced Ministry of Health leaders with his political allies from the military and intelligence services. This led directly to the embezzlement of Global Fund and GAVI funds, and triggered the exodus of key technical staff and the general demoralization and capacity decline in the Ministry. The institutionalization of the succession process in Tanzania has enabled Tanzania to avoid this particular form of politicization and capacity destruction.

⁸² Author interview, September 2 2009, Dar es Salaam.

⁸³ Author interview, November 16, 2009, Dar es Salaam.

⁸⁴ Author interview, August 31 2009, Dar es Salaam.

⁸⁵ Malaria vector control is the other example they provide.

⁸⁶ Note that the study was not powered to capture a decline of this size, meaning that the 13% mortality decline was not statistically significant.

⁸⁷ There are two additional pieces of evidence that suggest that clinical care did not improve significantly. First, the *distribution* of the child mortality decline is suggestive. Mortality decline across categories but the decline was smallest in the neonatal period (the neonatal period is the first month of life). Neonatal mortality is linked “to the adequacy of obstetric care at delivery, as well as to inadequate management of common neonatal complications including preterm delivery, infections, and birth asphyxia.” (Smithson, UNICEF, 2009) Reduction of maternal mortality requires emergency obstetric care, which requires adequate surgical facilities and skilled clinicians. This suggests that important aspects of clinical, curative care have not improved. (Manji 2009).

⁸⁸ PMO-RALG also pitched in with the Rehabilitation Strategy and Funding Mechanism for Health Facilities (JEE p 65). Note also that there were 4,844 health facilities in 1999, increasing to 5,379 in 2006 (JEE 2007).

⁸⁹ Author interview, October 26 2009, Dar es Salaam.

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- ⁹⁰ By 2010 over 7.3 million Tanzanians have been tested for HIV at 1,743 voluntary counseling and testing sites, with provider-initiated counseling and testing available in 21 regions and home-based testing in 10 regions (Ministry of Health 2010).
- ⁹¹ Author interview, October 29 2009, Dar es Salaam.
- ⁹² Author interview, November 16, 2009, Dar es Salaam.
- ⁹³ Author interview, October 26, 2009, Dar es Salaam.
- ⁹⁴ Author interview, November 16, 2009, Dar es Salaam.
- ⁹⁵ A further prioritization issue related to the balance of activities within prevention. Approximately 80% of HIV transmission in Tanzania is through sexual contact. The vast majority of PEPFAR's prevention programming, however, is biomedical in nature.
- ⁹⁶ Interview TACAIDS May 2009 Dar es Salaam; Booth et al (2008); interview donor representative May 2009.
- ⁹⁷ Former TACAIDS official interview; also World Bank interview, May 2009 Dar es Salaam and July 2009 Washington DC.
- ⁹⁸ They are also supposed to meet 4 times/year, and are composed of community members, and the facility in charge as secretary.)
- ⁹⁹ A number of stakeholders have advocated sending budgetary resources down to the facility level (analogous to the way resources are spent at the facility level in the education sector), but this has not yet happened.
- ¹⁰⁰ WHO interview; civil society activist interview.
- ¹⁰¹ A contributing factor is that PMO-RALG is supposed to play a major role in coordinating district health services. But it is widely seen a weak ministry, especially in technical areas, and not up to the job of supporting the health sector. Author interview, October 29, 2009, Dar es Salaam.
- ¹⁰² Author interview, July 8 2009, Washington DC.
- ¹⁰³ Author interview, May 2010, Dar es Salaam.
- ¹⁰⁴ World Bank interview; former Ministry official interview, PEPFAR implementor interview, MSD interview.
- ¹⁰⁵ Note that in the 2001 survey respondents were allowed to give more than one response to this question.
- ¹⁰⁶ Antiretroviral therapy must be administered to recipients for life and without interruption, both to ensure good clinical outcomes and to forestall the emergence of drug resistant strains of the HIV virus. In fact this was a major reason why many were pessimistic about the feasibility of mass ART provision in sub-Saharan Africa.
- ¹⁰⁷ PEPFAR is also responsible for procurement of alternate first line and pediatric ARVs.
- ¹⁰⁸ Author interview, September 23 2009, Dar es Salaam.
- ¹⁰⁹ The Global Fund pays an 8% fee on donated drugs, while the MOHSW covered the other 6%.
- ¹¹⁰ Adding to the perception that this influx of money and commodities had strained MSD was the Global Fund's 2009 audit, which discovered serious irregularities in supply chain management and possible fraud: Over \$800,000 worth of malaria drugs had disappeared, and over \$100,000 worth had expired (Mkinga, 2009). However, these estimates were adjusted downwards upon further examination, and the Global Fund later praised Tanzania for its response to these allegations of supply chain problems.
- ¹¹¹ Author interview, May 19 2009, Dar es Salaam.
- ¹¹² Author interview, September 2 2009, Dar es Salaam.
- ¹¹³ Author interview, October 16 2009, Dar es Salaam.
- ¹¹⁴ Author interview, September 2 2009, Dar es Salaam.
- ¹¹⁵ Author interview, September 18 2009, Dar es Salaam.
- ¹¹⁶ TACAIDS interview, MSH interview, IHI interview, various dates Dar es Salaam. See also Smithson (2004).
- ¹¹⁷ Smithson estimates attrition at 1,000-1,500; I plot the midpoint of 1,250.
- ¹¹⁸ One notable initiative to hire workers for underserved rural areas, known as the Mkapa Plan, has added over 200 workers, with 94% retention. But as figure 9 shows, this is a drop in the bucket.
- ¹¹⁹ Note that the HRH Strategic Plan records 29,000 working in public sector; the source of this discrepancy is unclear, although it may be that the 29,000 figure includes unskilled workers.
- ¹²⁰ The HRHSP notes that, of the 1,200 new health workers that the POPSM has approved, "there is inadequate data in terms of the number of staff who actually reported to their stations."
- ¹²¹ Global Fund Round 8 proposal.

¹²² Joint External Evaluation. Also TACAIDS interview, USAID interview, SDC interview, GTZ interview, various dates 2009, Dar es Salaam.

¹²³ Family Health International, for example, has 95 staff (Global Fund round 9 proposal), while Columbia-ICAP had over 100.

¹²⁴ Kuroswki et al (2003) estimated that HIV intervention scale-up in Tanzania would require 17,000 – 33,000 health workers.

¹²⁵ FHI (2007). This program was scheduled to expand; see *Daily News* (Tanzania), Sept 14, 2009.

¹²⁶ Cowi et al (2007), also author interview, May 2009 Dar es Salaam, TACAIDS representative personal communication.

¹²⁷ Annual Health Statistical Abstract, p. 14.

¹²⁸ Maestad (2006) estimates a pool of 8,700 health care workers not currently working in the sector. The government's Human Resources for Health Strategic Plan notes that "going forward, the government may run into difficulties of getting enough applicants for these positions as the pool of unemployed health workers is mopped up."

¹²⁹ Author interview, October 16 2009, Dar es Salaam.

¹³⁰ Author interview, September 14 2009, Dar es Salaam.

¹³¹ Author interview, October 26 2009, Dar es Salaam.

¹³² Author interview, December 15 2009, Dar es Salaam.

¹³³ Author interviews with ICAP, World Bank, USAID, TACAIDS, and CRS interview, various dates, Dar es Salaam.

¹³⁴ Author interview, October 29 2009, Dar es Salaam.

¹³⁵ Author interview, October 16 2009, Dar es Salaam.

¹³⁶ PEPAR partners highlight this integration, while also stressing that PEPFAR has also purchased computers for many district hospitals, which can be used more broadly.

¹³⁷ Author interview, March 4 2010, Dar es Salaam.

¹³⁸ Author interview, September 2 2009, Dar es Salaam.

¹³⁹ Figure accessed from <http://hdptz.esealtd.com/index.php?id=17>.

¹⁴⁰ Basket funding also provided a mechanism for audit of district health budgets, with helpful consequences: The number of adverse audits from the Controller Auditor General went from 66% in 2000 to zero in 2009.

¹⁴¹ Author interview, November 16 2009, Dar es Salaam.

¹⁴² Author interview, September 2009, Dar es Salaam.

¹⁴³ Author interview, October 26 2009, Dar es Salaam.

¹⁴⁴ While Uganda, for example, had rapid changes in the NMCP leadership, Dr. Mwita of Tanzania had been in his office for over 15 years before being re-assigned in 2011, possibly making him the longest serving NMCP head in sub-Saharan Africa by the time he left the position.

Chapter 5: Child health programs and child survival in Uganda, 1995-2009

You could have heard of the MDGs? We are finding it a very big challenge, I think even as a country, to achieve MDG Four and Five, the reduction of infant mortality, the reduction of maternal mortality, and even MDG 6, reversing the spread of HIV/AIDS and other diseases – serious challenges.

-district health administrator, interview¹⁴⁵

Of course health services around the country are deteriorating rapidly. I think you've read this in the newspapers; the newspapers are full of this all the time. Services are deteriorating rapidly in Uganda.

-former Ministry of Health official¹⁴⁶

While the Tanzanian experience shows both the possibilities and limitations of health sector aid, it is difficult to understand *causality* without putting this case in a comparative context. The following chapter will consider Uganda's experience. Both Tanzania and Uganda have been major recipients of the global scale-up of foreign aid for health that has taken place over the last 10 years, both have implemented very similar health sector reform programs, and both have scaled up disease-specific programs for HIV/AIDS, TB, and malaria. Yet while Tanzania has made major progress on key population health outcomes (most notably child mortality and morbidity), Uganda has stagnated.

This chapter will attempt to uncover the factors that explain the dramatic divergence on this key human development outcome. Positive change in the Tanzanian health sector was centered in the areas of malaria control, decentralization, and sectoral governance. These are all areas that show very different trajectories in the Ugandan context. Building on the theoretical framework presented in chapter 2, I will consider whether factors consistent with either *institutional* or *public health-technocratic* theories of health system development better explain the divergence between Tanzania and Uganda. Several

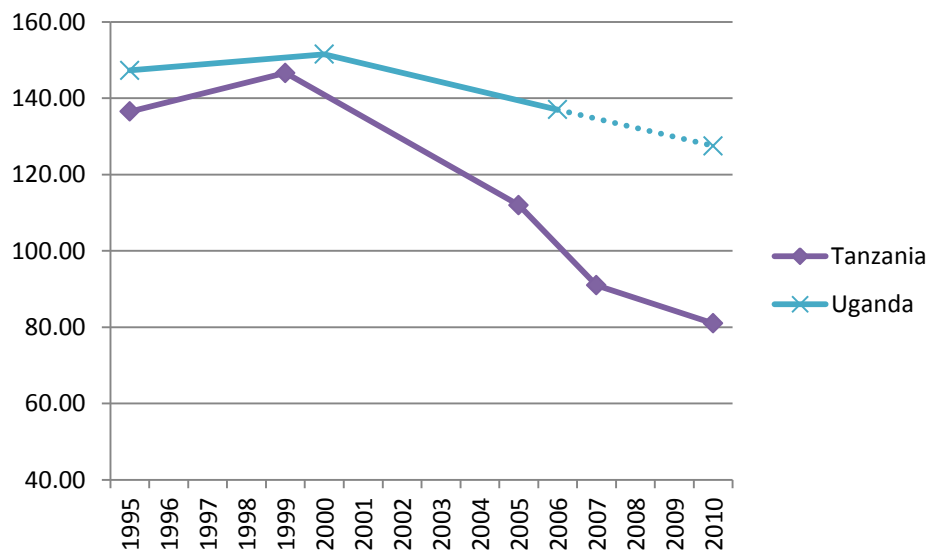
related questions suggest themselves. Do differences in socioeconomic factors such as economic growth or poverty reduction (the so-called “wealthier is healthier” thesis) explain the divergence? Is there divergence across the entire health system, or only on child-survival related programming?

Along these lines, chapter 6 will then seek to answer a series of health systems-related questions. First, it is widely assumed that child mortality is a strong indicator of overall health system performance (or even more broadly, of socioeconomic development *in toto*). A corresponding assumption would be that, given the sharp child mortality reduction, Tanzania’s health system *as a whole* improved dramatically over the period in question, while Uganda’s health system stagnated. I will test this theory, by examining the 6 principal health system functions in detail over the period in question. In addition, examining the health systems functions enables analysis of questions raised by the application of the Pritchett/Woolcock/Fukuyama framework described in chapter 2, related to the transaction intensity and specificity of various health systems functions.

On child survival, my findings point to the importance of *governance* as the key differentiating factor. Uganda’s failures in child survival can be traced in part to the failure of malaria control programming, which can be in turn traced to the politicization of the health sector that occurred over the 2004-2006 period. This politicization is in turn linked to regime dynamics, specifically the increased patrimonialism of Yoweri Museveni’s National Resistance Movement, and the scramble for patronage resources that occurred in advance of the 2005 referendum on presidential term limits and the 2006

presidential election. Greater politicization of the health sector can also be traced to differential patrimonial dynamics associated with the decentralization process in both countries. Yet while the failures of malaria control are the most visible manifestation of the poor governance and high levels of corruption associated with health in Uganda, these governance factors have been undermining health services since before 2004-2006. Before that period, there were accomplished and committed technical staff in place in the Ministry of Health, but also corrosive patrimonial dynamics in the sector. Finally, the views of individual political leaders, and the political culture of the ruling parties in both countries, played an important role in determining the priority given to health services over the period in question.

Figure 5.3: Under 5 mortality in Uganda and Tanzania, 1995-2007



Source: 1995, 2000 and 2006 point estimates from DHS; 2009 Uganda figure is World Bank projection from 2010 World Development Indicators.

On the question of broader health systems development, I find that despite Tanzania's rapid mortality reduction and Uganda's stagnation, neither Tanzania nor Uganda showed broad-based improvements across the major health systems components, although on balance Tanzania showed greater health systems progress. Tanzania moved ahead of Uganda in several areas (sectoral governance, pharmaceutical supply, and use of sentinel surveillance for policy formation) while Uganda was stronger in others (notably the routine health management information system). This suggests a more complex relationship between the "health system" as conceptualized by international bodies (such as the WHO), and key population health outcomes such as child mortality.

1. BACKGROUND

In the post-independence era, Uganda had East Africa's strongest health system. Makerere University in Kampala hosted the region's first medical school, making Uganda the first country in the region to produce a sizable cadre of skilled clinicians (Iliffe, 1998). This head start was erased, however, when the economy and most institutions of state essentially collapsed during the period of Idi Amin's rule and the subsequent civil war years (1971-1986). Peace was largely restored (except in the northern region) and recovery began in 1986, when Yoweri Museveni's National Resistance Movement (NRM) took power. Uganda's resurgence under Museveni has been rapid, with economic growth averaging 6% in real terms over the past 15 years. So while Uganda suffered an even greater economic crisis than Tanzania did in the late

1970s and early 1980s (and unlike Tanzania, suffered from intense political turmoil), its economic recovery was even stronger than that of its neighbor.

As in Tanzania, economic reform preceded revived growth. The statist economic thinking that Museveni had absorbed as a young Marxist at the University of Dar es Salaam gave way to the market orthodoxy of his key advisors, and the NRM quickly jettisoned socialist ideas for economic orthodoxy. Agriculture was liberalized, state enterprises were privatized, and macroeconomic balance was restored. By the 1990s the ambit of reform was widened to include the health sector. This was badly needed: the health sector was no exception to the general collapse of state institutions in the 1970s. In 1977, Idi Amin took personal control of the Ministry of Health, targeting doctors for political repression and at times assassination. Amin's 1972 expulsion of Uganda's Asian community resulted in the loss of many medical professionals, and over time many non-Asian doctors fled as well. Between 1972 and 1982, the World Bank estimates that health spending per capita dropped by 85% (Iliffe, 1998).¹⁴⁷

Health sector reform in Uganda from the start bore a close resemblance to health sector reform in Tanzania, with similar institutional structures, plans, and programmatic reforms, such as the essential health package, decentralization, a SWAP, and a Health Sector Strategic Plan. Like Tanzania, Uganda reached early agreement with donors on the creation of a SWAP (instituted in both countries in 1999), which followed the creation of the first five year Health Sector Strategic Plan (HSSP 1). A major decentralization of the sector was also implemented. And as in Tanzania, government health spending per capita

increased sharply (due to overall fiscal expansion), while staying roughly constant as a percentage of the budget, at around 10 percent of total expenditure.

At the same time that these reforms were taking shape, Uganda was being hailed internationally for its success in the fight against HIV/AIDS. Uganda is one of the few African countries to experience a major decline in HIV prevalence, from an estimated 18% at the height of the epidemic to the most recent estimate of 6% (UACP 2007).¹⁴⁸ While there is a lively debate about how much credit the Ugandan government deserves for this, it is clear that Uganda was a pioneer in early and visible presidential leadership on HIV/AIDS policy. It was also a leader in implementing a prevention campaign that focused on reduction of concurrent sexual relationships, well over a decade before the international AIDS establishment keyed in on concurrent relationships as a key driver of the epidemic (Epstein, 2007). Uganda's HIV prevention success (and its deeply *political* origins) is an important development in its own right and as a potential model for other countries. But it is also highly significant for the purposes of this study, because it demonstrates that *major progress on key health outcomes is possible in Uganda, given the necessary political commitment*. This only makes the slow progress on child survival all the more puzzling.

This brings us back to the original question of divergent performance: Have Tanzania and Uganda diverged in important ways in their ability to capitalize on health sector aid? If so, what explains the difference between these two countries?

2. CHILD SURVIVAL DIVERGENCE

As discussed in chapter 2, child survival outcomes are a complex function of socioeconomic and biomedical factors. It is therefore possible in theory that the divergence between Tanzania and Uganda could be driven by divergence in broader socioeconomic variables, either via differences in economic growth rates or poverty reduction, or via changes in related outcomes such as access to clean water, improved sanitation, lower fertility rates, or higher levels of female education. Before addressing the health-related elements of child survival, it is first necessary to examine trends in these socioeconomic factors that affect child survival.

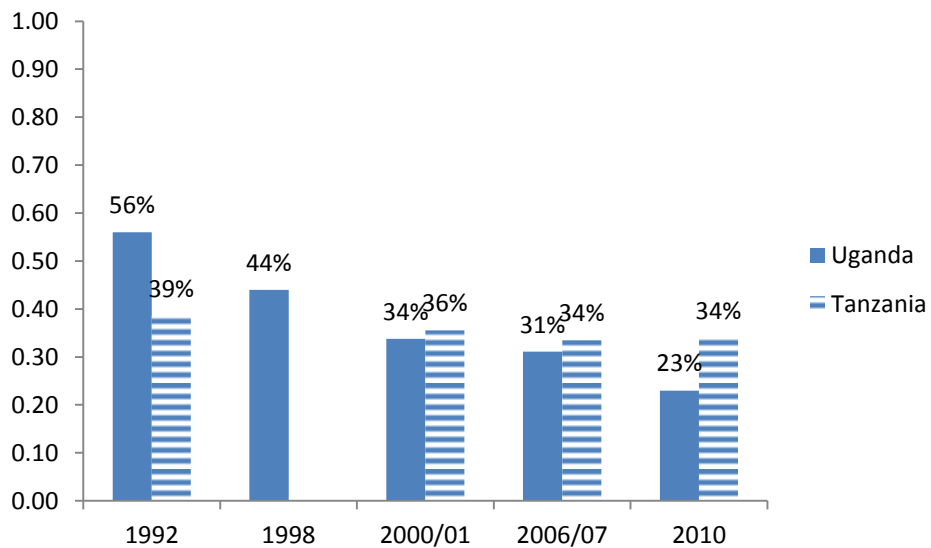
SOCIOECONOMIC FACTORS

Uganda has had rapid economic growth since 1986 (averaging over 6% in real terms),¹⁴⁹ and dramatic poverty reduction: Poverty dropped from 56% (in 1992) to 23% in 2010.¹⁵⁰ While this decline was fastest during the 1990s (see figure 5.2 below), it is on balance an impressive achievement, and dramatically outpaces Tanzania's lackluster poverty reduction over the same period. Based on this statistic alone, we should expect markedly *faster* mortality reduction in Uganda than in Tanzania, not the other way around. Nor do other socioeconomic mortality-linked outcomes related to sanitation, water, fertility and education give any reason to expect worse performance in Uganda than in Tanzania: The percent of households with access to safe water went from 60% in 2000 to 70% in 2009¹⁵¹ (while declining from 66% to 56% in Tanzania), while the percentage of

households with safe sanitation has increased from 4% to 11% (roughly equaling Tanzania's increase from 3% in 1999 to 12% in the 2009 National Panel Survey).¹⁵² The percentage of households with access to electricity increased slowly, from 7% in 1995 to 10% in 2009.

The one major socioeconomic determinant of child mortality where Uganda is at a disadvantage is its higher total fertility rate, which was 6.9 children per woman in both 1995 and 2000, and remained extremely high at 6.7 children per woman in 2006, compared to Tanzania's slightly lower 5.6 children per woman.¹⁵³ There was essentially no change in median birth interval over the 1995-2006 period. On the positive side for Ugandan women, the percentage of women with higher levels of education increased. In 1995 7% of women had at least some secondary education; by 2009 25% of women had at least some secondary education. Median years of female schooling over the same period went from 1.9 to 5.1.

Figure 5.4: Poverty rates in Tanzania and Uganda



Data from Household Budget Surveys and National Panel Survey (Tanzania) and Integrated Household Surveys, Monitoring Surveys, and National Household Surveys (Uganda)¹⁵⁴

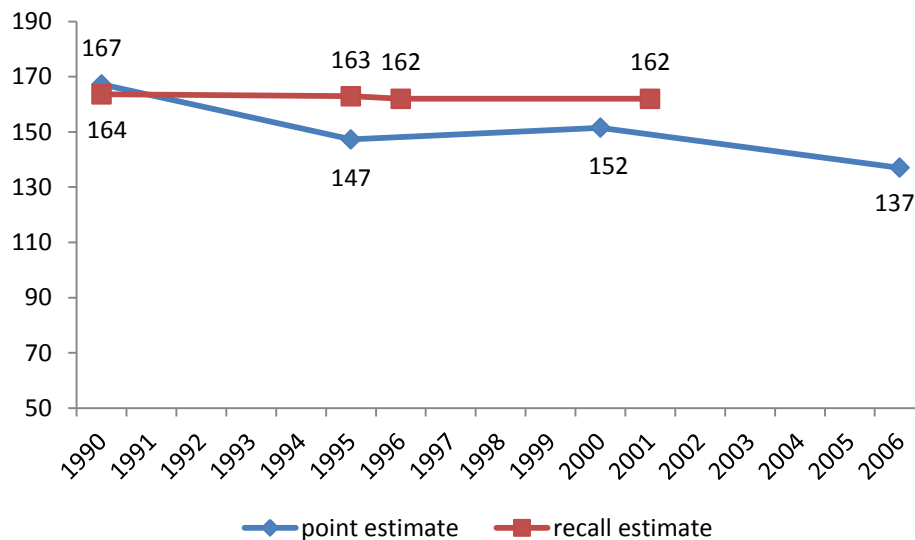
Having shown that the socioeconomic factors should, if anything, lead us to expect stronger child survival performance by Uganda, rather than Tanzania, we now turn to health sector factors such as service delivery and governance to see if they hold the key to understanding divergence in child survival outcomes.

Service delivery

In Uganda, under 5 mortality declined by just 9.8% between 2000 and 2006, from 152 per 1,000 to 137 per 1,000. This is the strongest indicator of contrast with Tanzania, which decreased by 38% over the same period, from 147 per 1,000 in 1999 to 91 per 1,000 in 2007. Uganda's child survival performance improves slightly, from a 9.8% decline to 13.3% decline, if the 2001-2006 period is compared with the 1997-2001 period

using data from the 2006 survey only. Taking a slightly longer time frame, from 1996-2006, the decline was just 7% comparing point estimates, or 15% using time series data from the 2006 survey. Tanzania’s decline over the same decade was significantly higher, at 34%. Moreover, as figure 5.3 shows, incorporating both 5 year point estimates and 10 and 15 year “recall” estimates from DHS surveys, the overall trend of sluggish mortality decline is clear.

Figure 5.3: Child survival in Uganda, 1992-2006



Source: this figure combines most recent under-5 mortality estimates from the 1995, 2000, and 2006 DHS (labeled “point estimate”) with the 5-10 and 10-15 year estimates from those surveys (labeled “recall estimate”).

Even in the most favorable possible interpretation of the mortality figures above (taking the difference between the highest recorded value of 167 and the lowest of 137), mortality reduction in Uganda has still been only approximately half as large as that of Tanzania. This difference is highly statistically significant, and of immense real-world

importance, given that it implies the difference between tens of thousands of child deaths averted over the period in question. What can explain such a difference?

Given that socioeconomic factors cannot explain this divergence, in this section I examine the performance of Uganda's health system, as measured by basic service delivery indicators. My particular focus is on coverage of proven child survival-enhancing interventions, as identified by the Bellagio Child Survival Group (and discussed in chapter 2).

Vaccinations

Immunization in general has suffered a very big blow. When funding from GAVI stopped, the parish mobilizers could no longer receive any allowances. And GAVI had provided us with some bicycles; the bicycles became very old and unrepairable. The hospitals and health centers had been using the bicycles and motorcycles to do mobilization and also take the health workers for outreach. But these motorcycles broke down, they were very old. And also there have been challenges of shortages of gas, and vaccines. So there are a number of challenges with the immunization, which is affecting child survival.

-district health administrator¹⁵⁵

Uganda had some problems, and the support from GAVI was halted. So from 2006 we haven't had any support from GAVI, we haven't used any GAVI funds... The main problem... was that the government should refund the 1.8 billion shillings that was misappropriated. So that's what the Ministry is now trying to get, so they can put it on the GAVI account. And then after that, GAVI has appointed monitors who are supposed to come in and make sure that the money is being used for the right purpose. So once that money is available, then GAVI support can be resumed.

-multilateral donor immunization specialist¹⁵⁶

Immunization is a key piece of any child survival program, comprising three of the Bellagio Group's designated interventions (DPT-Hib, measles, and tetanus toxoid vaccinations). Strong progress towards higher immunization coverage should also be relatively achievable, since the international community provides extensive operational and financial support to most developing countries, including Uganda. It should also be achievable since vaccination can be implemented in part via mass campaigns, rather than

by relying exclusively on the routine health system. Via the UN Expanded Program for Immunizations, donors provide operational support on procurement, logistics, distribution and policy setting, while since 2001 the Global Alliance for Vaccines and Immunizations (GAVI) has also provided extensive financing. How, then, did Uganda perform on this measure?

Using data from DHS surveys, we see that in Uganda, the percentage of children receiving all required vaccinations declined from 47% in 1995 to 36% in 2000, before increasing modestly in the 2000-2006 period to 46%.¹⁵⁷ Individual vaccines, such as DTP3, show similar patterns. (DTP3 goes from 61% to 46% to 64%, tetanus toxoid goes from 54% to 42% to 51%, and measles goes from 60% to 57% to 68%. Immunization rates are clearly not driving the differences in child mortality progress between Uganda and Tanzania, given that in both countries, there was little net change in vaccination rates over the 10 year period.¹⁵⁸

While the amount of change in immunization rates between the two countries is comparable, the achieved level in Uganda is quite low (Tanzania's DPT3 rate is 86%, for example). This is despite over \$116 million in approved financing from the Global Alliance for Vaccines (GAVI) between 2000 and 2009 (GAVI 2009).¹⁵⁹ Moreover, the vaccination rates barely budge over 15 years in Tanzania, while in Uganda they decline sharply before recovering. Why are vaccination levels low, and why did they actually decline in the late 1990s, before recovering to their (not very high) 1995 levels? Essentially there have been two problems. The first was largely a coordination problem

that occurred in the late 1990s, when UNICEF reduced its support for immunizations on the understanding that the SWAP funding would replace it.¹⁶⁰ However, in part because of the increased budgetary autonomy given to districts via decentralization, neither the central government nor the district governments filled the gap, resulting in reduced program funding and dropping coverage levels.

This problem should have been solved by the emergence of a new source of funding, in the form of GAVI, in 2000. However, before long Uganda's relationship with GAVI soured due to a corruption scandal involving GAVI resources that was uncovered in 2006. In response, GAVI suspended funding in Uganda due to the theft of funding, estimated at \$500,000 of a \$6 million grant. As one program participant noted:

Especially when the GAVI initiative came on board, it really boosted [vaccination rates], because there were mobilizers being paid, vaccinators being paid, because there was an allocation of funds for outreaches, at health facilities in the district, to reach out in the community... And then later on that funding was not available, the outreaches were not being conducted... the issues of GAVI misuse of funds, which came up in 2004, really paralyzed the operational functions for the EPI... the vaccines are there, even the health workers are there, but we cannot go to do those outreaches.¹⁶¹

While the government has reprogrammed some funding to replace GAVI resources, at the time when fieldwork was conducted in early 2010, the funding still had not been reinstated. One donor representative noted that the government simply had to repay \$800,000 to GAVI in order to unlock \$22 million in donations, but could not manage to do so. In early 2010, the government finally made the decision to use its own resources (rather than money recovered from the accused embezzlers) to pay GAVI and re-start international funding of Uganda's stalled immunization programs (*Monitor*, 2010).¹⁶² A four year wait to allocate \$800,000 seems to demonstrate the low priority given to immunization programs by the Uganda government.¹⁶³

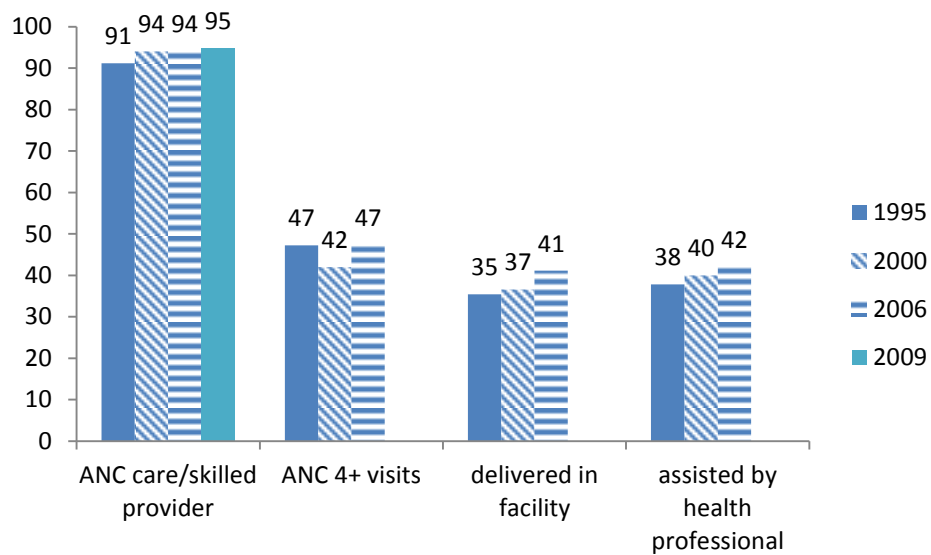
Estimates from the Uganda Bureau of Statistics' National Service Delivery Survey (2008) suggest that immunization levels are on an upward trend once again, although the quality of this data is uncertain, relative to the high quality of DHS estimates. Clearly, the immunization program in Uganda underperformed over the 1995-2006 period, with negative effects on child health. Yet as tragic as it is, Uganda's immunization failures do not seem to explain why Uganda is lagging Tanzania in child survival, given that in neither country was there a dramatic change in immunization levels over the period in question. The explanation for differences in child survival must lie elsewhere.

Maternal and newborn health

Maternal health care, including antenatal, delivery and post-delivery care, is a driver not just of health outcomes for women, but also for children under 5, due to the fact that neonatal mortality (mortality within the first month of life) is a significant portion of under-5 mortality.¹⁶⁴ In Uganda, the main indicators of maternal and child health *did not* improve appreciably over the period in question. The coverage of antenatal care by a health professional increased slightly, from 91% to 95% of mothers, while the number of mothers that deliver in a health facility increased marginally, from 35% to 41%. These figures are quite close to the coverage levels recorded in Tanzania, where 97% of expectant mothers receive antenatal care and 47% of women deliver in a health facility. Uganda, like Tanzania over this period, did not prioritize maternal and newborn health more generally, and accordingly saw little progress on related health indicators (Ministry

of Health 2010). And since Uganda, like Tanzania, shows little improvement on indicators of maternal health, it is highly unlikely that this is the cause of their differential rate of child mortality performance.¹⁶⁵ Moreover, the breakdown of child mortality declines suggests that declines in neonatal mortality were not the largest driver of divergence: reduction in neonatal mortality accounted for approximately 20% of the total mortality decline in Tanzania, and none of the decline in Uganda, since neonatal mortality not decline at all in Uganda between 1995 and 2006.

Figure 5.4: Percentage of women accessing antenatal care (ANC) and delivery services in Uganda, 1995-2006

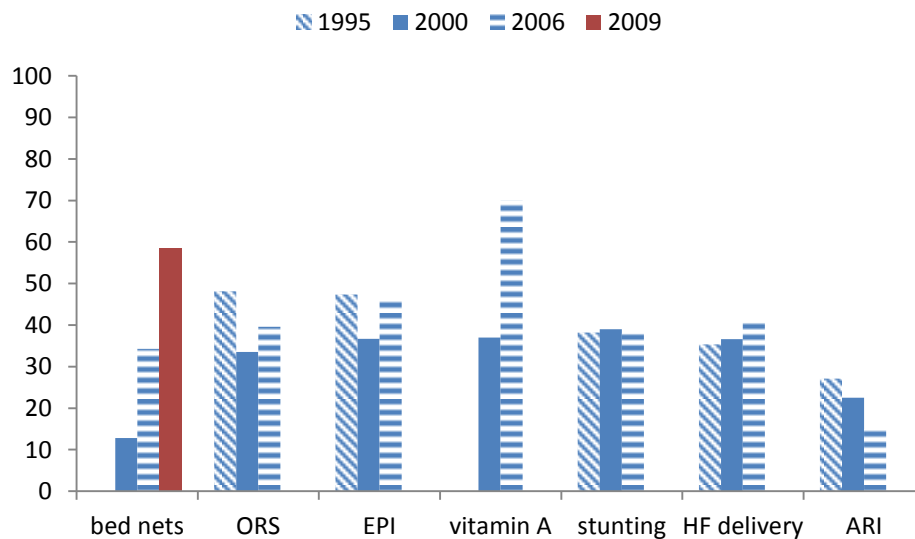


Nutrition

Although nutrition is another key determinant of child survival, it is not the cause of differences between Tanzania and Uganda. Nutrition outcomes do not differ materially between the two countries: in Uganda 38% of children were stunted in 1995, and an identical 38% were still stunted in 2006, while the 5% wasting rate in 1995 is statistically

indistinguishable from the 6% measured in 2006. In Tanzania, the levels and trends are extremely similar: 38% are stunted and 3% are wasted, with almost no change over the period in question. Anemia declined somewhat in Uganda, from 71% to 62% (although severe anemia actually increased, from 8% to 10%.) On the positive side, Vitamin A supplementation coverage has increased dramatically in Uganda (as it did in Tanzania), from 37% to 70%. In both countries, the progress (or lack of progress) on key nutrition outcomes has been similar, making it unlikely that this is driving differences in child survival outcomes.

Figure 5.5: Percentage of population covered by selected key child survival interventions and affected by selected conditions in Uganda, 1995-2006¹⁶⁶



Notes: ORS is oral rehydration salts, EPI is expanded program for immunizations, i.e. fully immunized children, HF delivery is children delivered in a health facility, ARI is acute respiratory infection.

Source: All data from DHS and MIS surveys, 1995-2009

Malaria control

I don't think it's any secret, at least in the two years that I've been here, that there's been virtually no progress in malaria control... You just haven't really seen anything move, really, since 2005. They've had this order of 19 million bed nets that's supposed to come in from I think [Global Fund] Round 4 for a year and a half now, and they're just continually not able to get it together on the government side to do that.
-NGO country director¹⁶⁷

I honestly think that the reason why Uganda is not going to participate in the AMFM (the Affordable Medicines Facility for Malaria, a Global Fund subsidy for malaria treatment) ... is because of the political investment in Quality Chemicals, and the sense that they can't let this program undermine that business.
-NGO malaria analyst¹⁶⁸

Even the malaria drugs that they are talking about, it has become highly controversial. They are buying drugs just because there are people connected with the procurement process. They are not really buying drugs that should be spread around the country.
-former Ministry of Health official¹⁶⁹

As figure 5.5 suggests, virtually the only important child survival indicators that have improved meaningfully in Uganda relate to malaria. (The other exception is Vitamin A supplementation). Given that malaria control has likely been a major contributor to Tanzania's child mortality reduction, it makes sense to examine the corresponding programs quite closely on the Ugandan side. It helps that there is directly comparable data between the two countries, since in addition to the DHS surveys discussed in previous sections, Uganda also had a 2009 Malaria Indicator Survey contemporaneously with Tanzania's 2010 DHS. Overall, Uganda has made progress on malaria control, but it is significantly slower than the progress in Tanzania. The percentage of households owning bed nets increased from 13% to 59% between 2000 and 2009 (Tanzania's contemporaneous increase was from 25% to 75%). While net ownership has expanded quite quickly, *actual usage* of these nets by children has trailed behind net ownership: the percentage of children under five sleeping under nets increased from 7% to 41%, while in Tanzania the increase was from 21% to 73%. Similarly, the percentage of children sleeping under an insecticide treated net was 31% in Uganda compared to 62% in Tanzania. Thus while Tanzania outpaces Uganda in net coverage, a key difference for

child health outcomes is that in Tanzania, the percentage of net usage by children is almost twice as high.¹⁷⁰

The reason for relatively weak adherence to bed net use in Uganda seems likely to be related to the source of the nets. In 2006, roughly three-quarters of all bed nets owners in Uganda received their nets from private sector sources, largely from retail shops, and just 6% received them from public health facilities. In Tanzania, roughly 20% of households received their nets from public facilities, and another 20% bought them privately but using the “*Hati Punguzo*” discount voucher distributed at the time of a pregnant woman’s antenatal checkup. Since nets distributed by public sources are typically accompanied by information campaigns about their use, the fact that most nets in Uganda were received from private sources is a potential reason why they were not used in their most effective way, by protecting under-5s while they sleep.

Besides children under 5 years of age, the other population that is specifically targeted for malaria prevention is pregnant women. There are two main interventions for pregnant women: they are supposed to sleep under bed nets, and they should receive a course of anti-malarial drugs (known as intermittent preventive therapy, or IPT) during their antenatal care visits. Both countries have shown similar patterns in this area – improvements in bed net coverage but lagging coverage of IPT. Bed net coverage rates of pregnant women are 54% in Uganda and 68% in Tanzania, while in Uganda, the number of pregnant women who received the recommended two doses of IPT was 32% in 2009 (up from 18% in 2006), compared to Tanzania’s 26% in 2010 (up from 24% in 2004).

Given that this therapy is linked to maternal health, where both countries have underachieved, this result is not surprising.

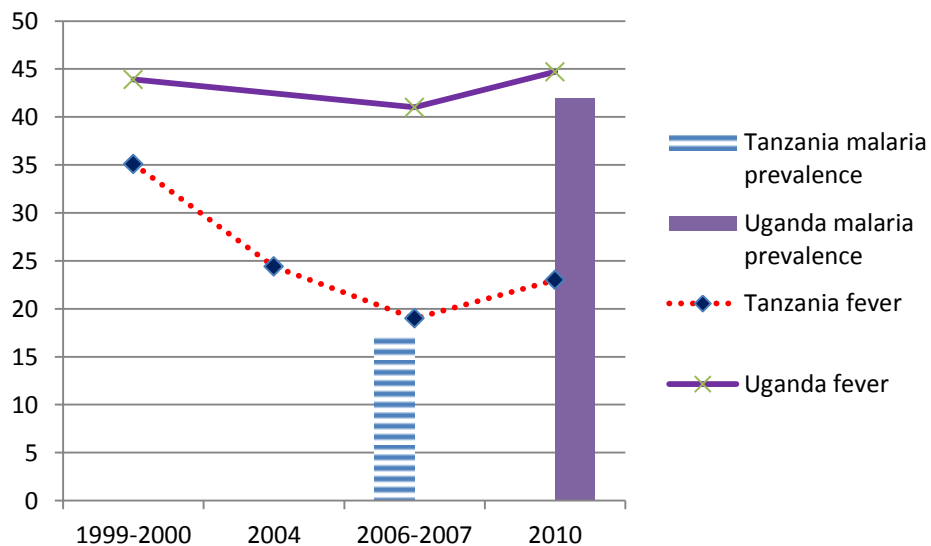
If Tanzania has a clear edge on malaria prevention, what about malaria treatment? In Uganda 62% of children with fever received malaria treatment in 2006 and 60% did in 2009. This is essentially the same as in Tanzania, where 57% of febrile under-5s receive treatment. However, the *quality* of treatment varies markedly. Because of growing resistance, Uganda switched its first-line treatment from chloroquine to a chloroquine-SP combination in 2002, and from this combination to artemisinin combination therapies (ACTs) in 2004, with the full roll out the new therapy taking place in 2006. Yet of the children who received treatment, in 2006 less than 5% received treatment with the approved first-line combination therapy, Coartem, while in Tanzania the figure was 21% in 2007. Only one third of those receiving treatment were getting SP (the previous first line treatment), and more than half were still receiving the outdated treatments of chloroquine or quinine. By 2009-2010, the percentage of under-5s with fever receiving approved first line anti-malarials (Coartem) had increased to just over one-third of children receiving treatment (the 2009 ACT Watch household survey measured a slightly higher 40% ACT share of all antimalarials). In the meantime, it had increased to almost two-thirds of all those receiving treatment in Tanzania. In countries where anywhere from 15%-45% of children under 5 carry malaria parasites at any given time, these are important differences. This means that while overall treatment rates do not appear to differ dramatically, Tanzanian children have been *significantly* more likely to be treated with effective, first-line drugs over the period in question.

However, information about prevention and treatment intervention coverage does not tell the entire story. We can also observe changes in intermediate outcomes, such as incidence of fever. Here Uganda's results trail those of Tanzania *dramatically*. In Uganda, the number of children with reported fever over the two weeks prior to the survey remained essentially flat over the past decade, from 46% in 1995 to 45% in 2009, compared to a 30-50% percent decline in Tanzania (from 35% in 1999 to 19% in 2007 to 23% in 2010). While these changes in fever rates are highly suggestive of differential success in malaria control, an even more conclusive indicator is the parasitaemia level of children under 5. Unfortunately, nationally representative parasitaemia testing only began in 2007 (in Tanzania) and 2009 (in Uganda), so neither country has a baseline from which to measure trends. However, citing a wealth of data, Smithson (2009) argues that Tanzania dropped from roughly 40% in the past to 18% in 2007.¹⁷¹ The 2010 Uganda Malaria Indicator Survey, by contrast, shows that parasitaemia in under-5s is still an extremely high 42% of all under-5s. If the malaria parasitaemia numbers are proxied by the fever levels (as figure 4 strongly suggests), it is reasonable to assume that Uganda has had a decade of virtually no change in malaria prevalence among children. This is a dramatic failure of the Ugandan health system, and poses a stark contrast to Tanzania.

Several facts suggest that these differences in the success of malaria control efforts explain a large part of the child survival divergence between the two countries. The first is that malaria control is virtually the only child health services indicator that shows meaningful divergence. Reproductive health, child nutrition, and immunization

indicators, for example, all show very similar trends in both countries.¹⁷² Second, the malaria proxy indicator of childhood fever shows dramatic divergence: it dropped by at least one-third in Tanzania while staying constant in Uganda. Moreover, the other three major drivers of childhood mortality (acute respiratory infection, diarrhea, and neonatal complications) do not show similar divergence. Mortality from neonatal causes (0-1 month) can be ruled out as the major driver of the divergence, since it represents only 20% of the observed mortality decline in Tanzania. Acute respiratory infection declined by similar amounts in both countries (12% decline in Uganda and 9% decline in Tanzania).¹⁷³ Incidence of diarrheal disease stayed roughly constant in both countries over the 15 year period. Given the dramatic change in malaria in Tanzania, combined with the relative stasis in the other three principle drivers of childhood mortality, the evidence is strong that malaria is contributing significantly to the outcome.

Figure 5.6: Percentages of under-5s with fever (1999-2010) and with malaria (2007-2009) in Uganda and Tanzania



Source: DHS and MIS surveys 1999-2009

What explains this difference? Why has Uganda trailed so far beyond Tanzania in the crucial area of malaria control? The survey data presented above establish the divergence in malaria control programming, but give few clues about the underlying *causes* of these differences. Interviews with program participants and observers, however, offer some insight. In the end, although malaria control is a technical undertaking, the differences between the two countries were not a matter of strategy or technical choices, but rather of governance. Both countries have similar national malaria control strategies. On prevention, both focus on ITN distribution, intermittent preventive therapy for pregnant women, and some indoor residual spraying. Both had similar net distribution strategies, using social marketing, commercial distribution, and free public sector distribution for vulnerable groups. Treatment policy has also been similar: Both countries switched their official first line therapy from CQ and SP in 2002, and from SP to artemisinin combination therapy in 2006-2007, and both have attempted to qualify for a Global Fund subsidy (the Affordable Medicines Facility for Malaria) to ensure lower private sector prices for ACTs.

Perhaps the only meaningful difference in strategy is that Uganda has experimented with home-based management of fever (known by the acronym HBMF), which was introduced in 2002.¹⁷⁴ This program involved distribution of a kit of malaria medicine by volunteer village health workers. A pilot program showed promising results, and the program was scaled up in 2003. Yet despite being highly regarded by virtually every malaria stakeholder interviewed for this project, the home-based fever management program fell apart because of shortages of anti-malarial drugs in the public sector. Stock

levels were reasonable when the first line malaria treatment in Uganda was the CQ/SP combination. But when the approved treatment was changed from CQ/SP to artemisinin combination therapy (ACT), drug costs rose sharply, since ACTs are significantly more expensive. The thinking was that this increased drug bill would be defrayed by the Global Fund, which had committed to fund ACT procurement. But this strategy broke down when Uganda's Global Fund money was cut off following a 2005 corruption scandal (discussed below).¹⁷⁵ From a promising beginning, home-based fever management essentially collapsed: In 2009, the Uganda Malaria Indicator survey found that just 9% of households reported that there was a community health worker who had malaria medicines available in their community. As one NMCP official put it in 2010: "Basically, HBMF has been dead – well, not necessarily *dead* but sleeping heavily – for the last four years."¹⁷⁶

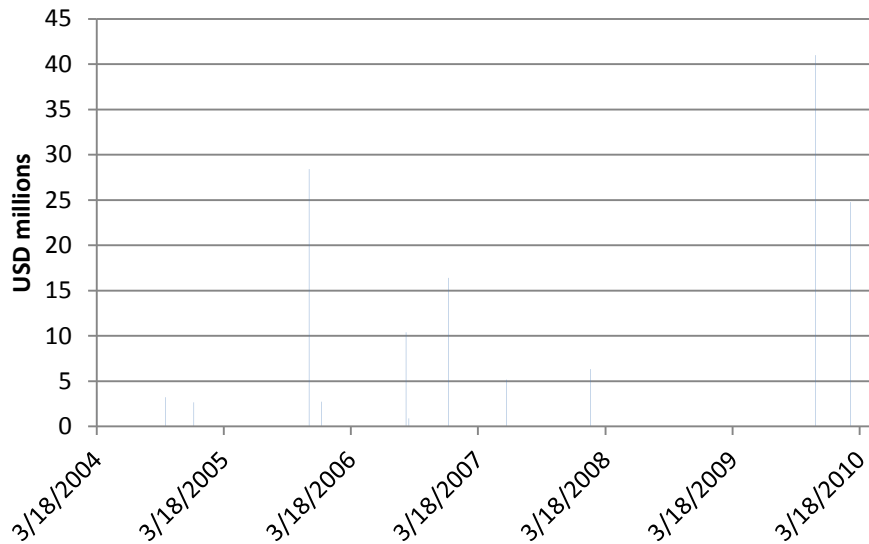
So even when there were differences in malaria control strategy, as in the approach to home-based treatment of fever, these technical differences were overwhelmed by institutional factors. Yet if the differences were political and institutional, where did they come from? Answering this question requires a more comprehensive analysis of the relationship of health sector governance to child survival programming in Uganda.

As the home-based fever management story suggests, malaria control in Uganda began to fall apart when the Global Fund embezzlement scandal hit in 2005. The scandal began when an anonymous whistleblower contacted a Global Fund watchdog group in 2005 with information about corruption in Uganda's Global Fund programs. The Global Fund

froze funds, and the Ugandan government appointed a panel to investigate, headed by Chief Justice Ogoola. The “Ogoola Report” detailed corruption, embezzlement, and use of funds for political purposes, including for the referendum to remove presidential term limits. It is particularly notable that the corruption took place over the 2003-2006 period, a time of intense political turmoil in Uganda, as President Museveni waged a political battle first to eliminate term limits, then to win the 2006 presidential election (Cohen, 2008). Justice Ogoola, during the court inquiries, repeatedly uncovered expenditures that he identified as related to political mobilization and campaigns. In one example, funds went to pay NRM campaign workers (Kasfir 2010), while in another, Vice President Gilbert Bukenya channeled funds to an NGO under his control to do voter mobilization activities in his parliamentary constituency (*New Vision*, March 29 2006). Minister of State Mike Mukula was also found to have used Global Fund money for political trips (*New Vision* Nov 25 2006). Global Fund money was also used for more prosaically corrupt purposes: to fund a PhD in South Africa for a member of the Project Monitoring Unit in one case; to pay for a minister to be treated for malaria in Kenya in another. The Ogoola Commission uncovered not just “mismanagement” (as it is often euphemistically called in this context), but plenty of outright fraud. In one case, the license plate of a vehicle supposedly used for health supervision trips was traced to a tractor. The transcripts of the Ogoola Commission hearings, many of which were published in the *New Vision* as they were happening, provide a crash course in the various ways in which donor funding can be diverted.¹⁷⁷

The government initially praised the Ogoola report, and disbanded the Ministry of Health's Global Fund Project Management Unit. The Global Fund responded by lifting the suspension of funding after 4 months. But after an initial flurry of activity, the government did not act on the major conclusions of the report and the conditions that the Global Fund imposed. Uganda was relying on Global Fund grants from Round 2, 4 and 7 to finance their malaria control efforts, and those resources slowed when the scandal broke. As Figure 5.7 shows, between the large disbursements of November 2005 and November 2009, funding slowed to a trickle, averaging just \$10 million over the next four years. Even more damaging than the initial funding disruption was the complete unwillingness on the part of the Ugandan government, over the 2005-2010 period, to take the steps needed to get the money flowing again. The Round 4 grant, for example, was the main source of funding for ACTs in the public sector in Uganda. Uganda had been approved for \$137 million of funding for malaria treatment by the Global Fund, and disbursement started in November 2005. Yet thanks to the scandal and the slow response to it by the Ugandan government, only \$84 million of that grant was ever disbursed, leaving almost 40% of the desperately-needed money on the table. Prior to a late, large disbursement in February 2010, only 40% of the grant had been used. As a result, by early 2010 there were millions of doses of first-line treatment that were simply never procured, over a five year period.

Figure 5.7: Global Fund disbursements for malaria in Uganda, 2004-2010



Source: Global Fund disbursement data, downloaded from <http://portfolio.theglobalfund.org/?lang=en> in February 2011.

Although USPA (2007) reports that 80% of facilities had ACTs in stock in Ugandan in 2007, over time the quantity of ACTs bought by the Global Fund circa 2005 gradually ran down, and the entire public sector was completely stocked out of ACTs a number of times over the 2005-2010 period. By 2010 facility-level stock outs of ACTs were commonplace (*Independent*, 2010). In an April 2010 interview, one district health administrator described ACT availability in his region:

We have severe shortages...In [the district] hospital for the last two months, the consignment they received last Saturday, they were given 300 doses for the whole hospital, for two months. Can you imagine?¹⁷⁸

Finally, in early 2010, agreement was reached with the Global Fund and money was released, meaning that free bed net distribution to all vulnerable group (pregnant women, children under 5) finally began in spring 2010 (*Monitor*, March 31, 2010).

The Global Fund imbroglio also contributed to net shortages. Uganda first received funding for bed nets in Round 2, with a plan that mirrored Tanzania's innovative "*Hati Punguzo*" voucher scheme. But the grant did poorly, receiving the Global Fund's lowest rating of "C" or "unacceptable." Less than 500,000 out of a planned 3 million-plus bed nets were ever procured, largely due to a dispute over net procurement, discussed below. Without the WHO stepping in to procure some nets, the entire bed net portion of the grant would have been wasted. The US President's Malaria Initiative also procured approximately 2 million nets over this period as well (PMI 2010). But the Global Fund breakdown meant that the number of subsidized bed nets was a mere fraction of the amount that Uganda could have procured.

Like Tanzania, Uganda shifted strategy from private sector social marketing of nets to universal free distribution. Uganda thus applied for new funding for this strategy, and their round 7 proposal was approved. But the ongoing dispute over procurement meant that this grant was not signed until November 2009 (Tanzania had received its first Round 7 disbursement by June 2008). In early 2010, an agreement appeared to finally have been reached between the Ministry of Health and the Global Fund, and universal net distribution was planned. But then scandal struck the NMCP: the head of the program and another top official were arrested.

Uganda's five years in Global Fund wilderness was a largely self-inflicted wound. The Global Fund imposed three conditions on Uganda: the responsible officials should be prosecuted, the stolen money should be returned, and procurement going forward should

be undertaken by a third party. Each of these presented political problems for the Uganda government. Prosecution of officials was sensitive, especially given that two of the involved officials (Mike Mukula and Jim Muhwezi) were former military officers and prominent political figures within the NRM. (The government claimed that prosecution was impossible because they lacked the funds to prosecute the case. In an absurd twist, in 2009 the funds appropriated for further investigation of the embezzlement itself disappeared (*New Vision* July 7 2009.) The government of Uganda was also extremely reluctant to outsource procurement of malaria-related commodities, resulting in major delays in the release of malaria funds. This particular fight seems difficult to understand; several stakeholders pointed out that outside procurement of other health commodities (vaccines by UNEPI, for example) has never seemed to bother the government. However, one Ugandan malaria analyst stated the following:

VPP (voluntary pooled procurement) cuts out most of the people involved in procurement, and this is where, I can be very honest, this is where you just say that a few of the corruption processes taking place can just block things. Because you want to have procurement processes that you can control. But VPP means that once you have given the specs, the Global Fund can source the nets from anywhere, and they just deliver millions and millions of nets.¹⁷⁹

A current ministry official unsurprisingly offered a more benign interpretation, painting it as a debate over industrial policy:

The fight that went on was, how can I put it, between the nationalists and the liberals. Because the nationalists were saying, we have local industries - if not in Uganda, at least in East Africa - which are producing nets, and they need to grow. But ...if we chose to go by the nationalistic thinking, we would have to go for single sourcing, which has its own complications. And so those who didn't see it that way thought that any competent supplier in the world can come in and supply those nets, especially when that supplier has the capacity to deliver on time.¹⁸⁰

It is impossible to know with certainty which interpretation is correct. It did seem unlikely, however, that Ugandan policymakers would be so committed to East African

unity that they would put their children's lives at risk to subsidize a Tanzanian net manufacturer (Uganda had no bed net factory over this period). The picture became clearer with the announcement in early 2011 that a Ugandan bed net factory had opened up (*New Vision*, February 16 2011).

Beyond the problems associated with the Global Fund scandal, the institutions responsible for malaria control are weaker in Uganda than in Tanzania. In Tanzania, part of what enabled the smooth functioning of the bed net distribution program was the creation of the embedded, Swiss-funded "ITN cell" within the National Malaria Control Program. No such institution exists within Uganda's NMCP.¹⁸¹ Instead of a well-motivated and well-regarded malaria team in the Ministry of Health bolstered by a high-performing, donor-financed ITN cell, the state of Uganda's NMCP is symbolized by the fact that several top program officials in Uganda were arrested for corruption in March 2010 (*Monitor*, March 11 2010).¹⁸² At the time of writing, their case was in progress, and there were differing views in the malaria control community as to whether they were genuinely guilty or whether they were political scapegoats for the sorry state of malaria control in Uganda. But the mere fact of their arrest spoke volumes about the intense politicization and turmoil surrounding Uganda's malaria control program. A further telling detail emerged in court: One of the accused alleged that the Minister of Health himself, and even the Prime Minister, were in the habit of helping themselves from the Ministry's stock of malaria drugs, in contravention to established procedure (*Monitor*, May 5, 2010.) Nor was this the first hint of corruption in Uganda's NMCP. In the course of Justice Ogoola's inquiries into the Global Fund scandal in 2006, it emerged that a

senior NMCP medical officer was in the habit of diverting funds for malaria trainings to his personal bank account, and only spending half of the provided amount (*New Vision* Jan 27 2006).

While there were huge problems with the public sector, some Ugandan malaria experts hoped that the country's vibrant private sector might come to the rescue by making malaria treatment available even when public supplies were nonexistent. While ACTs (the approved first line therapy) are far too expensive for most people, Uganda seemed likely at first to qualify for the Affordable Medicines Facility for Malaria (AMFm), a pilot Global Fund subsidy for private sector ACTs that aimed to reduce the price of these drugs to under \$1.00. But by early 2010, it had become apparent that the government was likely to lose its chance to receive subsidized ACTs because of its insistence that a local manufacturer, a company called Quality Chemicals, be the sole source for ACTs funded by the AMFM. Quality Chemicals is a Ugandan pharmaceutical firm, started in 2005 as a joint venture between the Indian pharmaceutical firm Cipla (40%), the Uganda government (40%), and private investors (20%). Global Fund regulations prohibit single source procurement, so the government's insistence on using Quality Chemicals would completely prevent Uganda from participating in the AMFM. A second problem was that at the time of writing, Quality Chemicals had not been fully "pre-qualified" by the WHO as a manufacturer of ACTs, which was another condition that had to be fulfilled for the Global Fund to procure ACTs from Quality Chemicals.¹⁸³ Ugandan and donor malaria specialists were, at the time of fieldwork in 2010, aghast that the government would sabotage the prospect of affordable anti-malarial drugs, especially since government

bungling (or malfeasance) had resulted in persistent stock outs of public sector ACTs in the 2005-2010 period. As with the dispute over bed net procurement, it was impossible to say with certainty what was at the root of the disagreement between the government and the donor community. The Quality Chemicals factory was by all accounts an impressive facility, and it has already gotten further than any previous sub-Saharan African pharmaceutical manufacturer (outside of South Africa) in the WHO pre-qualification process (Anderson, 2010). It is quite plausible that the Quality Chemicals imbroglio was a manifestation of Museveni's obsession with industrial policy. In an early speech, he describes a similar situation:

I shall do everything possible to pressure the Government of Uganda to ensure that we buy what we produce in Uganda. I see no reason, for example, why we do not buy electricity cables from Cable Corporation in Lugazi. Some people tried to convince me that it was the World Bank that forced them to buy cables from elsewhere. But I do not believe this. I think it was the weakness of our own people who did not stand up and say: Look here, we have cables in Uganda, so don't make them part of the international tendering contract. Keep them out of the loan. After all, even if these are World Bank loans, we shall repay them eventually. We may take a long time doing so, but we shall have to repay them. No one can, therefore, force me to take out a loan that I do not want.¹⁸⁴

But given the health sector's very poor record on corruption in general, many interlocutors feared that the protection of Quality Chemicals was related to investment by leading politicians. Of particular concern was Quality Chemicals' refusal to even engage with the Global Fund on the possibility of a sliding scale of subsidies that would have enabled them to participate. They refused to reveal their cost structure to the Global Fund, meaning that no deal could be reached.¹⁸⁵ One Ugandan malaria expert noted the contrast with other African countries with local pharmaceutical industries: "Nigeria and Ghana have big local pharma, but they have signed their [AMFM] grants. And Nigeria

has, if you look at first line buyers, they have hundreds, but here we are talking about maybe ten or so. But we have local pharma that has high political clout.”¹⁸⁶

Political interference in malaria control was a theme of many interviews. One Ministry official noted the following:

There is some element of politics. Because with ACTs, the delays resulted from the initial suspension of funding grants to Uganda in 2004, 2005, 2006. So it took us time to put in place the measures demanded by Global Fund... So that took time. But it all stemmed from the initial suspension of the grant. So I think it had something to do with politics. Even nets, the delay in the distribution of nets was again caused by politics – as I told you, selecting between the local industries and foreign suppliers.¹⁸⁷

Uganda’s AMFM proposal was saved at the last minute, thanks to a last minute visit to the country by high-ranking international health officials. But going on previous performance, relief for Ugandans suffering from malaria seemed to be still quite far away, in large part because of their own government

Governance

If you know the story of the Ministry of Health here, you will know that it has been rocked by a lot of scandals and embezzlements and thefts and so on over the last 10 years. So the Ministry has never been stable; leadership has not been systematic. And so, long term vision has not really been implemented, because leaders keep coming and going. And also I should say also our rate of corruption – maybe not just in health but in the country as a whole – has also made a big contribution to all the things you see that are happening, us not performing well.

-former Ministry official¹⁸⁸

Corruption is the biggest single factor that is affecting our performance.

-Ugandan health NGO representative¹⁸⁹.

You are smarter being big time corrupt. If you are sticking to the rules, you are just being a bureaucrat....to use the language of social science, it is new culture that is now being normalized,

-researcher, Makerere University School of Public Health¹⁹⁰

Things generally got off track with the removal of presidential term limits, so that the main objective of the regime became remaining in power, rather than delivering services. So you will find that whereas with the

Global Fund corruption scandals and GAVI and other health schemes, the Ministers are on trial, but they were not really the only beneficiaries. It was that project of the “life presidency” that was the main beneficiary

-Former NRM “historical.”¹⁹¹

The Movement [NRM] can be corrupt but the opposition are more corrupt.

-President Yoweri Museveni, reported in the *Monitor*, April 8, 2010.

Service delivery indicators show us the proximate causes of the sluggish pace of child mortality decline in Uganda. But as the immunization and especially the malaria control examples suggest, it is impossible to understand trends in service delivery performance in Uganda without also analyzing governance. However, governance is a multidimensional term, and its effect on health service performance goes beyond the several high-profile corruption scandals mentioned in the malaria control and immunizations sections. First I will discuss governance in broad terms, then sectoral governance, and will conclude by analyzing Uganda’s decentralization reforms.

Governance in Uganda over the past 25 years can be divided into two phases. In the first period, Yoweri Museveni restored peace and security, presided over the resurgence of economic growth, and increased political participation markedly through the institution of new local government structures. Uganda gained a reputation as one of the few genuine economic reformers in sub-Saharan Africa. Mid-1990s reforms to the budget process and public financial management strengthened state capacity (Mallaby, 2004).¹⁹² Parastatals were privatized, the state marketing board monopoly for key export crops like coffee were dismantled, the Ugandan shilling was devalued, tariffs were lowered, and inflation was tamed. This period was the basis for Uganda’s anointment

(contemporaneously with Tanzania) as a “donor darling,” and laid the foundation for both countries receiving around 40% of their total budgets in aid.

However, the shift from the “good governance” phase of Museveni’s rule to a much more mercenary phase is described by prominent Museveni critic Andrew Mwenda, who argues that:

There is a consensus among Ugandans that Yoweri Museveni and the NRM presided over a fairly enlightened government that was committed to public service up to about 1996. ... the regime enjoyed a high degree of legitimacy. Yet, over the last 14 years, we have seen the quality of parliament deteriorate, the president has become almost like a medieval monarch and the state’s commitment to the public good has significantly declined. Corruption has been increasing every year and in many ways acts as a lubricant that turns the wheels of our democracy.

Few observers contest that a decline of this nature occurred, manifest in both rising corruption and neopatrimonialism, and by the increasingly repressive behavior of the regime. Perhaps the apotheosis came in the 2005-2006 period. After serving his 2001-2006 term, Museveni was in theory prevented from running again by the two term limit enshrined in the 1995 constitution. Museveni was determined to stay in office. First, in 2005 he pushed a bill eliminating term limits through Parliament (in part by delivering a \$2,800 cash payment to over 200 pro-Museveni MPs to help “educate voters” about the constitutional change.) This change was then ratified by a national referendum in July 2005. The subsequent presidential election in 2006 saw constant harassment and the eventual jailing of his chief rival, the Forum for Democratic Change’s (FDC) Kizza Besigye, and Museveni prevailed with 59% of the vote.

Corruption and neopatrimonialism have taken various forms in Uganda. Classic kinship-based neopatrimonial dynamics are certainly president: The president's wife, Janet Museveni, was at the time of writing a member of parliament and Minister, and his brother Salim Saleh was a high ranking former general, former State Minister for Microfinance, and all-around power broker. President Museveni's son Muhoozi Kainerugaba is a Lieutenant Colonel in an elite military unit, the Minister of Foreign Affairs is the father of his son's wife, while other family members also work in the Office of the President.¹⁹³ But Museveni's patronage system goes far beyond his immediate family and co-ethnics. His initial (and overlapping) power bases were the military, fellow Westerners from the Ankole region, and the NRM. However, this original coalition has fractured somewhat over time. A number of "historicals," for example (close comrades from the bush war) have turned against him.¹⁹⁴ Particularly in the lead up to the 2005 constitution change, when former NRM stalwarts including Eriya Kategaya, Augustine Ruzindana, Bidandi Ssali, Henry Tumukunde, and others realized that Museveni had no intention of ever giving up power, they joined former NRM stalwarts and Museveni confidantes like Besigye in opposition to the NRM (Tripp 2009).¹⁹⁵

But as this initial coalition frayed, Museveni has quite ingeniously built a much larger one to supplement and replace it. This consists first of a huge coterie of new district officials, as the instrumentalization of decentralization through massive increase in the number of districts (discussed further below) has become a major element in the regime's patronage strategy. Uganda's system of local government has five separate tiers (Local Councils I-V). This was initially seen as a unique experiment in participatory governance.

Barkan et al (2004) note that it also means that there are somewhere in the neighborhood of 500,000 paid officials in the local government system. Opportunities for patronage are rife. This number ballooned further in 2010, when the government decided, in advance of the 2011 elections, to begin paying salaries to officials at the lowest level of local government, the village or “LC-I” level (*Monitor* June 3, 2010). A further locus of patronage at the central government level is in the new departments and agencies that were created, at donors’ behest, as part of civil service reform. In the early years of civil service reform, staff levels were cut sharply in the traditional ministries and agencies of the government, as overall civil service employment went from 320,000 employees in the 1990s to 150,000 by 1995. (Langseth 1995) The number had crept back up to 256,000 in 2007 (Barkan et al 2004), at the same time that a large number of new autonomous departments and agencies such as the Uganda Revenue Authority, the Uganda Investment Authority, and the National Social Security Fund were created (Ssemogerere 2010). Museveni has appointed many of his supporters in these well-paid positions (Barkan et al, 2004; Habati 2010). Similarly, the military was cut in half, from 90,000 to 50,000 members (Langseth 1995), only to see its numbers restored by the creation of specialized units such as the Presidential Guard Brigade (Green 2010). In 2001, the cabinet was increased from 21 cabinet members to 40, and this was boosted again to 67 members in 2003 (Rubyonga 2007). By 2011, Uganda’s cabinet (ministers and deputy ministers/ministers of state) had grown to 71 members. Uganda’s *Independent* magazine reported that this made it the third largest in the world, after North Korea and neighboring Kenya (Mwenda, 2011).

In classic neopatrimonial style, the carrot comes with a stick. While Uganda has a free press and relatively open political debate, repression has increased notably in recent years. Political power has been further centralized in the presidency, and institutions that could constrain Museveni, such as Parliament, the Human Rights commission, and the Inspector General, have been weakened. The quality of elections has deteriorated, and they are now marked by attacks on the press and steady harassment (or worse) of opposition politicians. Paramilitary groups such as the infamous “Black Mamba” squads that beat and harass opposition politicians and supporters are widely tolerated and even encouraged by the regime.

The period before the 2011 election was dominated by accusations of grand corruption (the long-running CHOGM scandal was a high-profile example) and rising ethnic tensions (especially between the regime and the Buganda kingdom). Looming over the whole process was the prospect of oil revenues, which were scheduled to come on line in the near future. There was a palpable worry among governance observers that if Museveni emerged intact in 2011, he would be firmly ensconced as president for life once oil money began to lubricate his patronage machine. Museveni ended up winning the 2011 election with an increased margin of 68%, and there was less overt violence and repression than in the past. Besigye, for example, was not jailed at any point during the campaign, which marked an improvement on 2006. Museveni found an easier path to victory, symbolized by the fact that the government requested a \$250 million supplemental budget halfway through the year. Few Ugandan commentators could resist pointing out the obvious relationship between this deficit and the envelopes of cash

Museveni and his coterie were handing out on the campaign trail (Onyango-Obbo 2011; Mwenda 2011).

Sectoral governance

The Ministry of Health is clearly not that important. We haven't had a Permanent Secretary or Director General in three months, it's insane! And we might not get them until after the election. So then you lose a year.

-donor health specialist¹⁹⁶

Politics is critical, because politics decides what gets done and what doesn't get done. ... What happens is that in the Ministry of Health, a lot of good policies are made. You will see that they have the most comprehensive, most well-developed, and well-thought out policies. But none of those policies are implemented! So the question is: What is the real policy? ... In the case of Uganda, the real policy is actually not the one that has been written properly. It is the policy that has been decided politically in the cabinet.

-former Ministry of Health official¹⁹⁷

Leading up to the [2006] elections, which happened the year the Global Fund crashed, we thought that the funding was probably being used to fuel keeping Museveni in power. We used to joke, well, they're stealing *their* money, but at least they're not stealing *our* [i.e. USAID] money. And DFID used to come to us and say: You know, you guys, you should put all your money though the budget. We used to think, are you [expletive] crazy?

-former USAID official¹⁹⁸

The two period structure that Andrew Mwenda described above in Ugandan governance writ large is visible as well in the health sector as well, although with slightly different periodization. While there wasn't much attention paid to health in the early years of Museveni's rule (Iliffe, 1998), by the late 1990s a major health sector reform had been initiated, and was off to a strong start. Despite this promising start, and the good will and commitment of many Ugandan health professionals, it all fell apart not long after it got started, overwhelmed by the broader processes of political decay within the Ugandan state. In the process, Uganda lost the chance to fully benefit from the massive donor health aid scale up of the past decade. There is a visible link from the increased

patrimonialism and governance decline at the macro level, and decay of governance within the health sector itself. How did this come about?

In short, the health sector in Uganda was politicized, and subsumed into the neopatrimonial dynamics that were intensifying elsewhere in the Ugandan state. While most developing countries bureaucracies contain neopatrimonial elements, the intensification of neopatrimonialism in the Ugandan health sector was a dynamic process, with identifiable (and potentially preventable) causes. Following the publication of the 1993 World Development Report, the World Bank and other likeminded donors had spent the mid-1990s gathering support for a sectoral reform program, and Uganda seemed like fertile ground. It was already a strong economic reformer, it had made record progress in reducing HIV/AIDS prevalence, and it boasted a strong cadre of clinicians trained at Makerere University Medical School. Building on this foundation, the late 1990s and early 2000s were by all accounts a time of progress in the health sector. Minister of Health (1996-2001) Dr. Crispus Kiyonga was seen as a strong and technically sound leader. A physician with an Masters in Public Health from Johns Hopkins University, he was a highly political figure; after serving as Minister of Health he became the NRM's National Political Commissar. And although he was reportedly part of a group of NRM dissidents that met with Besigye in the late 1990s to discuss growing NRM corruption, he clearly made his peace with the system, since he became a key supporter of Museveni's third term referendum. But he was also a respected technocrat, who was tapped for a leadership role in the early days of the Global Fund. Just as important, the key technical leaders below him (Director General Dr. Francis Omaswa,

for example, and Commissioner of Planning Dr. Patrick Kadama) were also highly regarded.

This strong team developed a number of policy reforms and new structures. The SWAP and the first Health Sector Strategic Plan were ambitious, technically sound plans. User fees for primary health care in public facilities were eliminated, leading to dramatic increases in outpatient utilizations. The experiment with home-based management of malaria via community health workers also dates to this period. Reforms were also initiated with respect to the pharmaceutical supply chain and the human resources for health system. The “health sub-district” concept was introduced in 1999; this was a plan to decentralize service below the district level, driving a significant increase in building of health facilities. And funding increased sharply, as donors responded to these reforms with increased support.

However, a process of political decay set in before these reforms could bear fruit. It is impossible to date the inflection point precisely. The stage was set in 2001 (quite early on in the reform process), when NRM power broker Jim Muhwezi replaced Dr. Kiyonga as Minister of Health. A clear high point of corruption was the 2003-2005 period, when Global Fund money was being embezzled, and likely used to fund political campaigns.¹⁹⁹ However, it appears that during the period between Muhwezi’s appointment and the uncovering of the Global Fund scandal in 2005, neopatrimonial tendencies were accelerating at the same time that a relatively strong technical team at the Ministry was attempting to make progress. Then the exposure of the Global Fund scandals in 2005 set

in motion a downward spiral of reduced resources, a vacuum in leadership, and widespread demoralization and departures of key staff from the Ministry. The effects of this scandal continue to ripple.

What, then, caused this shift in personnel and increase in corruption? Politicization *as such* was not new in the health sector in Uganda. Doctors have always played a prominent role in Ugandan politics. In Museveni's first cabinet, for example, there were 6 medical professionals (Ilfie 1998). The leading opposition presidential candidate in 2001, 2005, and 2011, Kizza Besigye, was Museveni's former personal physician Vice President Gilbert Bukenya is also a medical doctor, and as mentioned above, current Secretary of Defense Crispus Kiyonga is a doctor. But this politicization appeared to increase markedly after the appointment of Minister of Health Jim Muhwezi in 2001. It is worth sketching out some of the characteristics of this new leader, to highlight the change that had occurred. Unlike Kiyonga, a highly political figure but also a medical doctor respected for his technical and medical expertise, Muhwezi was a brigadier general in the army, a former head of intelligence services, and a major power broker in the NRM. He owned "Radio Rukungiri," an influential vernacular radio station in western Uganda, and was a key member of Museveni's inner circle. As state minister of education in 1998, he had been censured by Parliament in 1998 for corruption, and eventually dropped from the cabinet (*Africa Confidential* September 23, 2005; Rubongoya 2007).²⁰⁰ Thus Museveni was certainly not unaware of Muhwezi's reputation when he appointed him as Minister of Health – this was a man he had *already* dropped from Cabinet once before because of corruption! On a similar note, a possibly apocryphal story reported in the Ugandan media

is that Museveni was once flying over Muhwezi's parliamentary constituency, and asked his traveling companions what huge factory they were flying over. He was informed that the massive structure was actually Muhwezi's home (*New Vision*, Sept 22 2005).

A second top health official inserted at the same time, Captain Mike Mukula, was also a highly political figure. He also owned a radio station, in northeastern Uganda, ("the Voice of Teso,") and is also an influential figure in the NRM (*Africa Confidential*, March 6, 2006). Muhwezi and Mukula were directly implicated in the Global Fund embezzlement scandal, and along with another high level health official from that era, Alex Kamugisha, Muhwezi and Mukula were also directly implicated in the GAVI embezzlement scandal from 2006. Similar levels of politicization are evident today: The current Minister of Health, Stephen Mallinga, was an opposition politician who was persuaded to switch to the NRM by Museveni (*Monitor*, November 7 2010) and received the Ministry of Health docket presumably in gratitude. The current State Minister of Health, James Kakooza, was a high-profile promoter of the elimination of term limits back in 2005. Not content with this, in the immediate aftermath of Museveni's 2011 election victory he proposed extending the presidential term from five to seven years (*New Vision*, February 28, 2011). Kakooza was also a vocal defender of the President's policy of new district creation, despite the consensus that this policy had seriously damaged health service delivery (*New Vision*, April 5, 2010). The circumstances of his ministerial appointment are also murky. The *Independent* reports that he was one of the authors of "a minority report to exonerate Security Minister Amama Mbabazi who was accused of dubiously selling land to the national pension scheme, the NSSF, in the so-

called Temangalo land saga. He was appointed minister of State for Health soon after.”
(*Independent*, March 14, 2011).

The transition from highly-regarded technical leaders to politicized health officials was widely noted by informants. One former Ministry official noted:

At that time [late1990s/early 2000s], you had from the political leadership, these very highly committed, strategic thinkers. The then-Minister was first of all chairman of the Global Fund board.... And then if you look at the head of the technical leadership, it was also very committed - an impeccable long serving civil servant, Professor Omaswa - and this has changed. And these guys, the people in the planning department, Dr Kadama is out, at the time that Professor Omaswa is out, at the time that [Minister] Kiyonga is going out. And then you have a new set of managers from both the technical and the political, and I think that has affected [things], and I think it's really governance and stewardship at that level.²⁰¹

It is possible to imagine this politicization and institutional decay happening through sheer bad luck, if a talented and honest leader just happened to be replaced by a corrupt one. After all, Dr. Kiyonga, despite his medical and management credentials, is also a deep NRM partisan. This points to a deeper, structural reason for the change in leadership: In the works of one former NRM “historical” who turned to the opposition:

The posting of those ministers was not accidental. Ministers were posted in areas where they can get hold of funds, and then release the funds to the political system... that money was used. The ministers took some, but more of the money was actually used for the campaign.²⁰²

This rings true when the background of the ministerial team is taken into place.

Muhwezi’s role as a censured-for-corruption education minister during the period of Universal Primary Education rollout makes it unlikely that his corrupt approach to health funds was a surprise to President Museveni.

Clearly this politicization and decline in capacity at the top levels of the ministry had serious consequences for health services in Uganda. Yet beyond the direct effects of increased neopatrimonialism and more frequent incidents of grand corruption (such as the Global Fund scandal), these appointments also undermined bureaucratic autonomy from politics, which is a key attribute of high-performing ministries. Several interlocutors described a much greater degree of political interference in technical matters in Uganda compared with Tanzania – particularly in the area of malaria control.²⁰³ For example, Oliveira Cruz et al (2006) point to the strong political pressure to introduce Indoor Residual Spraying for malaria by political leaders, despite the opinion of technical experts that this intervention was not a priority, given the nature of malaria transmission in Uganda. They also suggest that top Ugandan political leaders pushed for major involvement of religious organizations in vertical programs (such as PEPFAR) for political reasons, at the expense of the technical team's preference for greater public sector involvement. Other interlocutors stated that technical officials were given autonomy to craft technically sound policies, but that the policies were then ignored on the basis of political considerations.²⁰⁴ This erosion of bureaucratic autonomy is difficult to quantify, but it was widely felt by those who worked in the Ministry at the time.

A more visible attribute of high performing, Weberian bureaucracy that was undermined in Uganda was a *long term career trajectory* for top officials, and continuity in office more generally. This has also been notably lacking in Uganda. The single biggest cause of this was the Global Fund and GAVI scandals. Top officials and staff were dismissed, a much broader group came under suspicion (rightfully or wrongfully), and other officials

were shifted to new roles. But disruption at the top did not end with the scandal and its aftermath in 2005-2006. In December 2009, for example, the Permanent Secretary of the Ministry of Health was fired, and the Permanent Secretary of the Office of the President was shifted to the Ministry of Health.²⁰⁵ (*Monitor*, December 13, 2009). A retirement several months later meant that the Ministry had four Permanent Secretaries in the five years since the scandal (*Monitor*, March 16, 2010). In March 2011, the director of Mulago National Referral Hospital, was transferred for “gross mismanagement.” (*Monitor*, March 8 2011).

More generally, high levels of turnover were repeatedly cited as a cause of weak performance and demoralization within the ministry.²⁰⁶ Strong technical staff became demoralized, in part by the Global Fund and GAVI corruption scandals, and in part by changes in leadership, and left: “All the champions [in the Ministry] fought, they were cornered, and then they left.” As one interlocutor pointed out:

The good people who were in the Ministry - the ones who were expert in their field, the ones who go to Durban, to Geneva [for international health conferences] - if they had a good leader, they would really blossom. But I guess when they get the military guys put on top, then they just get snuffed out and try to find other ways out...And then when the Global Fund crisis came, it was even worse, because they were all under suspicion. Even the good ones became suspect.²⁰⁷

An additional aspect of sectoral governance has to do with the prioritization of the sector by top political leaders. Uganda benefited from high-level leadership in the fight against AIDS. But in recent years, the health sector was not a priority for the country’s political leaders. Museveni quite clearly believed that progress on social indicators (such as child

mortality) would be a result of economic development, not a goal to be pursued even at low levels of income. As one donor representative noted:

[Museveni] wasn't actually that present. In the four years I was there, he only spoke at one or two of these national events in the health sector. And in one of them, we were all cringing because he said that until Uganda has the same population as the UK, we won't develop. He wasn't very present. He may have been present in the international press, but when I got there, and was working in the business, we didn't really see that much of him publicly in terms of HIV or health.²⁰⁸

A former Ministry official made a similar point, describing Museveni's preference for infrastructure and economic growth over health and education:

He [Museveni] doesn't talk about health, for that you can be sure. In fact, he talks mainly about economic growth...And because he doesn't seem to talk about health, also very many of his colleagues don't talk about health...The issue is economic growth, infrastructure, roads, water, railways, electricity, energy. Those are the things that he talks about. And so health is not, in my view, the political priority of Uganda under President Museveni...The problem starts from the top, and of course this is reflected though all our plans, and all our systems, and so on. And I can assure you that this is reflected in the way that the government acts.²⁰⁹

Yet for all of these factors, the biggest problem in the Ugandan health sector may have been elsewhere. Just as President Museveni was implementing his strategy to build a patronage network through creation of new districts, the health sector was implementing a decentralization program that placed the primary responsibility for health services on district governments.

Decentralization

[The districts] have ceased to be units of service delivery. They are units of patronage.

-researcher, Makerere University School of Public Health²¹⁰

[Decentralization] is a very difficult concept to implement because there are *so many districts*. So the US government could not work in the same way in Uganda as they could work [in Tanzania] ...In Uganda, every time you turn around they're doubling the districts...so politics got caught up in, those districts. So many resources had to go to setting up local offices, and it seemed a little bit more like cronyism than anything else.

-former USAID official²¹¹

Certainly the decentralized environment in Uganda is more volatile, because every x number of days you get a new district, which throws the whole thing into disarray.
-multilateral aid official²¹²

A final way in which governance affected the health sector is via decentralization. In both Tanzania and Uganda, the health sector decentralization reforms look quite similar on paper. Yet decentralization in Tanzania is almost universally described as a key driver of improved outcomes, while in Uganda, the story is a mixture of positive and negative on the *technical* side - but the positive technical effects are clearly outweighed by negative *political* aspects of decentralization. The difference is not in the design of the decentralization reform, but in the political economy of decentralization in the two countries.

The similar design of the two reforms begins to make sense when the origins of the decentralization project are examined. One former high-level Ugandan Ministry of Health official noted the following:

TEHIP was a pilot in Tanzania, [but] we were the first ones who were approached by the World Bank to do that pilot, I think in 1996 or 1997. But our Minister at that time [Dr. Kiyonga] didn't want to hear anything called "pilot" at all. So we just said, let's do it full scale. So really, what TEHIP did in those southern districts in Tanzania – that was our health sector reform. We did it on a national scale. We did a burden of disease study ... we gave powers to the district to plan, and so on. The Uganda HSSP I [Health Sector Strategic Plan I] for health policy was TEHIP on a national level.²¹³

As a result of this shared origin, district-level institutions look strikingly similar in Tanzania and Uganda: Health decentralization began in 1993, and since the 1997 Local Government Act, district councils are responsible for service delivery, recruitment, management, planning and budgeting (USPA 2007)²¹⁴ while institutionally, a District Director of Health of Health Services was placed at the head of District Health Team

(equivalent to Tanzania's District Medical Officer and Council Health Management Teams). The DHT is responsible for an annual District Health Sector Strategic Plan (equivalent to Tanzania's CCHP), which also forms part of a rolling District Development Plan (DDP).²¹⁵

Together with these organizational reforms, significant resources have also been shifted to the district level: the percentage of the health budget spent at the district level more than doubled, from 16% in 1997/98 to 35% by 2006/07 (Okwero et al 2010).²¹⁶ The financing structure is slightly different however: In Tanzania districts receive two block grants, one conditional (earmarked) grant and one unconditional grant. In Uganda they receive earmarked grants for wage, non-wage expenses, development, training, hospitals, and NGO facilities, in addition to a smaller unconditional grant.²¹⁷ As a result, several informants pointed out that districts have much less freedom to plan and budget in Uganda, since funding is earmarked to a much greater degree than it is in Tanzania. Yet despite this lack of discretion, early evidence shows allocation of resources did *not* improve in early years of decentralization: Akin et al. (2005) show that in Uganda between 1995 and 1997, decentralization was associated with *reduced* budget allocations for drugs, maternal and child health, and malaria control, but increased spending on buildings, equipment, and salaries.²¹⁸

Despite all of the challenges, most Ugandan interlocutors believed that in principle, a decentralized structure was appropriate for Uganda's health system, and most also agreed that some level of planning and budgeting capacity had been built at the district level.

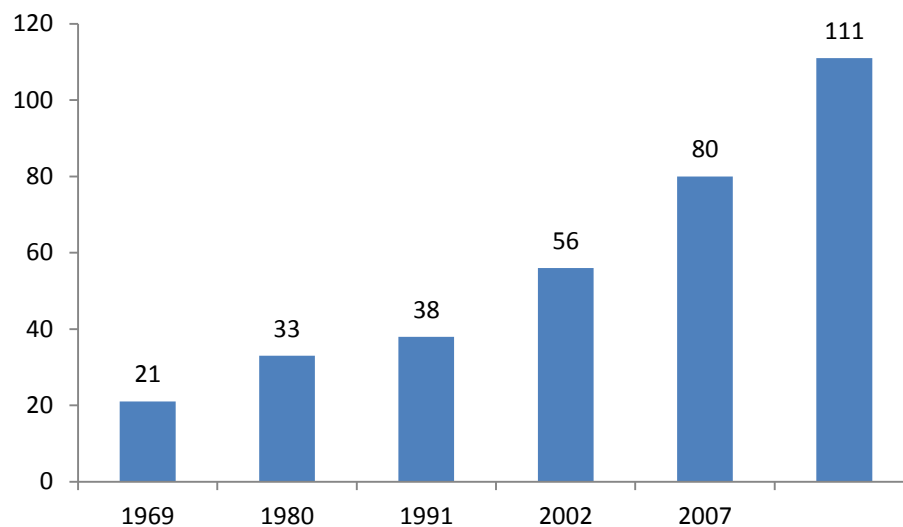
The problem was not with health sector decentralization *per se*, but with the political forces that were driving the broader decentralization project.

Decentralization in Uganda was always deeply political; in fact it emerged from a wartime tactic of the NRM. They had found that empowering local elected councils was a useful tactic for managing areas that they had retaken from government forces. And in the initial post-conflict period, it was seen by the outside world as an innovative attempt to broaden participation and rebuild local government structures (Ndegwa and Levy, 2004).²¹⁹ But as Museveni's political position began to erode and he saw the need for a new source of political support, decentralization became a key element of his patronage strategy (Green, 2010). First, the shift of budgetary resources and responsibility for service delivery to the districts, formalized in the Local Government Act of 1997, opened up a vast new terrain for patronage (Barkan et al 2004). Districts receive 95% of their funding from the central level. Making district resources almost completely dependent on the national budget has given local politicians extremely strong incentives to join the NRM. Dependence on the central level grew sharply since President Museveni reduced the local government graduated tax (before the 2001 election) and abolished it (before the 2006 election). Okwero et al (2010) and Tripp (2009) both note that the severing of this link between local tax collection and service delivery seemed to weaken accountability relationships.

Second, the number of district has exploded, from 30 in 1990 to 111 currently. Each of these new districts brings with it the need for a new administrative apparatus, which can be staffed via patronage. Green notes the following:²²⁰

Museveni has created 46 districts since 1990, or more highest-level sub-national units than any other political leader in the world. These have been concentrated in non-Bantu areas of Uganda and have been consistently created around election times: in 2000 and 2005 Museveni created districts only a matter of months before elections the following year, while in the 1996 and 2006 campaigns he promised to create new districts after the elections. Moreover, voters in new districts have responded in all three presidential elections, voting more for Museveni by a margin of 14.9%, 3.1% and 14.3% in 1996, 2001 and 2006, respectively.

Figure 5.8: Number of districts in Uganda, 1969-2011



Source: Data for 1969-2007 from HSSP III, data for 2010 from Monitor 2010.

There are 204 new political and administrative posts to be filled when a new district is created, just counting the district administrative posts (Mwenda 2010). Using these posts as patronage opportunities has been an important plank of Museveni's strategy. Green (2010) shows that, controlling for a range of relevant characteristics, newly-created

districts are significantly more likely to support Museveni. In 2007 and 2008, district governments were deemed the most corrupt government agency in a study by the Inspector General of Uganda, ahead of other institutions such as the police and the military.²²¹ The Ministry of Health's annual health sector performance report emphasizes that the weakest performers in the district league table are often new districts. A number of interlocutors made similar points about the extremely disruptive effects that new district formation has on health service delivery:

You see, when they break up a district... what do you have at the new district? The mother district never gives away its headquarters. The mother district never gives away its good staff, because they get to choose. So to build capacity in terms of staff, in terms of infrastructure, all that kind of stuff, even knowledge, it becomes very difficult, because most of the guys who are going there are junior people. ... In fact some of them are crying to recentralize. If you say services are nearer to the people, are you going to bring a district to my home? That's the nearest I can have services!²²²

Another program manager observed a similar dynamic:

Of course these new districts, most of their creation is really politically motivated, that sort of thing. But at the end of the day, you have been working with this DHO's [District Health Officer] team, you have invested in building his capacity, but then all of a sudden, this district gets cut off, and they have to create a whole new team. And then you have to start afresh with this new team. And usually first of all, they don't have the facilities... so this is the situation that most of these districts start. And the people themselves are not there, they have to recruit staff. Usually the parent district seconds some staff. But they won't send their top people there, usually just junior people. It's not interesting to be in a new district, except for politicians!²²³

District creation sped up again in the lead up to the 2011 elections, to the consternation of many. A handful of newspaper headlines from that period show the response of Ugandan society: In the *Daily Monitor*, one article noted that "Civil Society Decries Formation of Districts" (April 24, 2010); another was blunter: "To Hell with the District Craze." April 26 2010). An editorial in the government-aligned *New Vision* asked, "Do we need all these new districts?" The *Observer* carried an editorial titled "new districts don't bring service closer," (April 26-28, 2010) and an analysis stating that "New Districts Sting and Sink the Poor" in the same issue.

The result is a district health system where, according to the World Bank (2010), “newly-created districts—bedeviled by poor infrastructure and inadequate staffing—are small, remote, and lack the requisite capacity to manage and deliver health services.” Given that more than half of Uganda’s districts have been created in the past decade, the situation is grim. At a 2010 conference in Kampala, Minister of Health Stephen Mallinga made a speech in which he said that decentralization had created a fragmented, tribalized health system. Decentralization, he maintained, was pushed on Uganda by donors, and it was for the worse: “you can decentralize many things, but health is dangerous.”²²⁴ It is impossible to imagine his Tanzanian counterpart saying the same about decentralization. It is clear that this particular health system reform, although almost identical in design, is viewed very differently in the two countries.

¹⁴⁵ Author interview, April 29, 2010, Central region.

¹⁴⁶ Author interview, April 9 2010, Kampala.

¹⁴⁷ This is a strong contrast with Tanzania, which was attempting during this period to expand basic services quite dramatically, in line with Julius Nyerere’s Arusha Declaration.

¹⁴⁸ While widely cited figures of a prevalence decline from 31% in 1990 to 8.3% in 2002 are likely overstated (see Parkhurst 2002), a serious decline in prevalence unquestionably did occur.

¹⁴⁹ Okwero et al 2010 note that the re-weighted GDP series shows growth to be 7.5% from 1997-8 to 2007-08.

¹⁵⁰ This data was accessed from www.data.worldbank.org/country/uganda.

¹⁵¹ Going back to the 1995 DHS, the 1995-2010 improvement appears even greater, since access to safe water is only 46.3 in the 1995 DHS. However, these data are not directly comparable to the 2006 and 2009 data, since they do not distinguish between protected and unprotected wells.

¹⁵² Note that this may be due to a definitional change.

¹⁵³ Population growth was 3.2% between 97/08 and 2007/08, meaning that per capita income growth was only 3.2% rather than the 6% aggregate growth that was mentioned above; see Okwero et al. (2010). By World Bank estimates this is the 3rd highest total fertility rate in the world, behind Niger and Liberia.

¹⁵⁴ The poverty rate in Uganda was calculated as 11,463 UGX at 1993 prices; see Appleton in Reinnikka and Collier (2001) for justification of this level. Appleton notes that over the 1990s, poverty declined at all points in the income distribution, meaning that the overall trend is not sensitive to choice of poverty line.

¹⁵⁵ Author’s interview, April 29, 2010, Central Region.

¹⁵⁶ Author interview, April 20, 2010, Kampala.

¹⁵⁷ Reinnikka (2001) notes that the immunization low point was due to a donor coordination problem where a vertical program left and no one picked up the EPI function.

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- ¹⁵⁸ The HMIS shows DPT3 coverage at 82% in 2007-08. This would represent a significant increase in coverage of a key vaccine relative since 2006. But it is unlikely that coverage had genuinely improved so dramatically, given that routine data typically overestimates vaccine coverage. The Uganda Service Delivery Survey (2008) estimated coverage of all vaccination at 73%, which would suggest that by the 2005-2008 did see improvements.
- ¹⁵⁹ Tanzania had \$57 million approved over the same period.
- ¹⁶⁰ Author interview, April 20 2010, Kampala.
- ¹⁶¹ Author interview, April 20, 2010, Kampala.
- ¹⁶² Author interview, USAID official, April 24, 2010, Kampala.
- ¹⁶³ Stakeholders also the programmatic changes that accompanied turnover of responsible of officials in the Ministry; author interview April 2010 Kampala.
- ¹⁶⁴ In Uganda in 2006 it comprised 21% of all under 5 deaths, or 29 out of 137 deaths.
- ¹⁶⁵ Moreover, within the under-5 mortality performance, we can see that neonatal mortality is not the portion of mortality that has declined the most– in Tanzania it went from 40 to 29, while in Uganda it went from 27 to 29.
- ¹⁶⁶ The 2000-2001 figures do not account for six northern districts, accounting for approximately 7% of Uganda’s population. However, when adjusted for this omission, point estimates rarely deviate by more than 1-2 percent (UDHS 2006, p. 6). The 1995 survey omits 8 enumeration areas in the north (out of a total of 303 enumeration areas), meaning that approximately 3% of enumeration areas could not be visited.
- ¹⁶⁷ Author interview, March 18, 2010, Kampala.
- ¹⁶⁸ Author interview, April 1, 2010, Kampala.
- ¹⁶⁹ Author interview, March 29, 2010, Kampala.
- ¹⁷⁰ 2000 and 2006 Netmark household surveys show net ownership going from 30 to 44%, and under-5s sleeping under a net from 21-30% and under an ITN from 1-14%.
- ¹⁷¹ Subsequent surveys by NIMR also recorded comparable parasitaemia levels of 14% and 11%.
- ¹⁷² Malaria is the largest cause of under-5 mortality, accounting for almost a third of child deaths in Uganda (UBOS 2007).
- ¹⁷³ The 2006 DHS notes that “because of a change in the definition of ARI between the 2000-2001 and 2006 surveys, it is not possible to compare trends in the percentage of children with ARI.”
- ¹⁷⁴ There are differences of opinion in the malaria world about the relative emphasis that should be placed on facility-based versus home-based approaches to malaria treatment, and Uganda’s choice of home-based treatment had the potential to be an important policy experiment.
- ¹⁷⁵ Author interview, Ugandan malaria expert, April 9, 2010.
- ¹⁷⁶ Author interview, April 2010, Kampala.
- ¹⁷⁷ The total of money diverted is unknown. The Ogoola Commission declared that the responsible individuals should repay \$1.6 million, which is a relatively small portion of the \$45 million in Global Fund money that had been disbursed up until that point. But Justice Ogoola emphasized that his commission was not able to fully audit the programs, and recommended that 300 sub-recipients be further audited.
- ¹⁷⁸ Author interview, April 29 2010, Central Region.
- ¹⁷⁹ Author interview, April 19, 2010, Kampala.
- ¹⁸⁰ Author interview, April 21, 2010, Kampala.
- ¹⁸¹ Procurement and distribution of ITNs and operation of the voucher scheme is conducted instead by US government contracts, in the case of PMI, and by third party procurement agents such as PSI in the case of the Global Fund.
- ¹⁸² They were accused of diverting malaria drugs that were meant for public hospitals to a private company. It emerged in the course of their trial that even the Prime Minister and Minister of Health would take unauthorized doses of malaria drugs from the Ministry (*Monitor* May 5 2010).
- ¹⁸³ Quality Chemicals had received Good Management Practices (GMP) prequalification but not prequalification for ACT production.
- ¹⁸⁴ This is from a 1989 speech collected in Museveni, Yoweri K. (2000) *What is Africa’s Problem*, Minneapolis: University of Minnesota Press, p. 194.
- ¹⁸⁵ Author interview, April 19, 2010, Kampala.
- ¹⁸⁶ Ibid.

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- ¹⁸⁷ Author interview, April 21, 2010, Kampala.
- ¹⁸⁸ Author interview, March 25, 2010, Kampala.
- ¹⁸⁹ Author interview, August 19, 2009, Kampala
- ¹⁹⁰ Author interview, August 14 2009, Kampala.
- ¹⁹¹ Author interview, September 21, 2010, Kampala.
- ¹⁹² Author interview, public financial management specialist, September 2009, Dar es Salaam.
- ¹⁹³ See also “NRM Politics and Tribalism.” *Independent* January 26 2010.
- ¹⁹⁴ Rice (2009) suggests that Museveni’s split with old Bush war comrades has essentially re-creating the ethnic divide in Ankole, between Bahima and Bairu, at the national level.
- ¹⁹⁵ Kategaya subsequently reconciled with Museveni and is now back in government.
- ¹⁹⁶ Author interview, April 24, 2010, Kampala.
- ¹⁹⁷ Author interview, March 25, 2010, Kampala.
- ¹⁹⁸ Author interview, February 9 2010, Dar es Salaam.
- ¹⁹⁹ One former Ministry official points out that even though Kiyonga was replaced in 2001, the SWAP structures and other positive reforms continued, until 2005-06 when a new Permanent Secretary came in, a new Director General, and new technical teams, and the mindset changed.
- ²⁰⁰ For the 2011 election, Muhwezi is being challenged by former State Minister for Primary Care Alex Kamugisha for a parliamentary seat in Rukungiri district.
- ²⁰¹ Author interview, April 19, 2010, Kampala.
- ²⁰² Author interview, September 21 2010, Kampala.
- ²⁰³ Author interview. March 2010, Dar es Salaam.
- ²⁰⁴ Author interview, March 25, 2010, Kampala.
- ²⁰⁵ At the same time the Inspector General of Government called for the Ministry’s Accountant General to be fired because he made a false declaration of wealth.
- ²⁰⁶ Cited in author interview with donor health systems specialist, with WHO health systems expert, and with former Ministry officials, March/April 2010, Kampala.
- ²⁰⁷ Author interview, April 21, 2010, Kampala.
- ²⁰⁸ Author interview, February 9, 2010, Dar es Salaam.
- ²⁰⁹ Author interview, March 29, 2010, Kampala.
- ²¹⁰ Author interview, August 14, 2009, Kampala.
- ²¹¹ Author interview, February 9 2010, Dar es Salaam.
- ²¹² Author interview, March 4, 2010, Dar es Salaam.
- ²¹³ Author interview, April 6, 2010, Kampala.
- ²¹⁴ Iliffe (1998) points out that even before Museveni, Uganda’s medical system was decentralized, with all facilities below the district hospital already under local control. The NRM decentralized control of hospitals as well, and made District Directors of Health Services (DDHS) responsible to local government.
- ²¹⁵ One key difference from Tanzania is that in 1999, responsibility for health services was devolved even further, down to the Health Sub-district (HSD) level, which was made responsible for the delivery of the Minimum Health Package.
- ²¹⁶ 40% of total state spending in 2002; a dollar amount of \$1.2 billion in 2006.
- ²¹⁷ As in Tanzania, the unconditional grants are awarded based on an impersonal formula.
- ²¹⁸ Okuonzi (2004) is also critical, pointing out that central government funding has been heavily earmarked, and disparities have actually widened. See also Jeppson (2004).
- ²¹⁹ It is also true that population in Uganda has increased dramatically, meaning the more administrative units might be necessary to maintain a reasonable population/district ratio. But current district creation has gone far beyond this: The population per district after independence in 1968 was 513,711 (Green 2010), while by 2010 to population per district was 300,891 (author’s calculations based on US Census Bureau population projections).
- ²²⁰ Elliot Green (2010), “Patronage, District Creation, and Reform in Uganda.” *Studies in Comparative International Development*.
- ²²¹ “Districts Remain Most Corrupt Bodies – IGG” *The Monitor*, June 16, 2008.
- ²²² Author interview, March 30, 2010, Kampala.
- ²²³ Author interview, March 29, 2010, Kampala.

²²⁴ Speech at Management Sciences for Health SURE conference in Kampala, Protea Hotel, April 15-16 2010. Quote taken from author's notes.

Chapter 6: Health sector reform and health system strengthening in Uganda, 1995-2009

Nothing is working at the moment. Everything is going downhill, all the systems, not just the health system.

-Ugandan NGO representative²²⁵

The MDG target for Uganda's infant mortality rate is 31 per 1,000 live births by 2015. Sadly, it is out of reach, although potentially, it is achievable. All we need to do is to move away from business as usual.

-WHO country representative Dr Joaquim Saweka, *New Vision*, August 28, 2009.

In this chapter, I shift from direct examination of mortality-related outcome indicators to a broader examination of efforts to strengthen the health system in Uganda over the period in question, in order to draw conclusions about health system strengthening efforts more broadly. Large increases in external funding were received by Uganda over the period in question. In this section I attempt to uncover where there is any observable effect of this funding on the health system more broadly (as distinct from the specifically child survival-related outcomes observed in the previous section). In a related sense, this chapter asks whether the broader health system follow the same trajectory that is observed with child survival. Answering this question requires examining specific functions within the health system in some detail. This chapter also tests whether the predictions generated by chapter 2's theoretical framework are valid with respect to the Ugandan case. Following the pattern of the Tanzania chapter, each of the six health system functions will be analyzed in light of the PWF theory of transaction intensity and specificity.

Service delivery

The health sector in Uganda right now is going through a retardation in most of the performance indicators, and this is seen, and everybody knows it.
-Ugandan malaria researcher²²⁶

While moving across the country in my campaigns, I was appalled by the poor quality of public service delivery. All achievements we made from 1990 through public sector reforms have waned. There is need to reinvigorate this commitment.

-Yoweri Museveni, quoted in *New Vision*, March 18, 2011.

Trends in service delivery coverage were discussed at some length in the child survival portion of this chapter. In this section, I consider service delivery again, this time in its place as one of the WHO's 6 health sector functions. The reason for this is two-fold: First, there are several key service delivery-related outcomes which reflect the performance of the health system but which are not directly related to child survival, such as trends in overall system utilization, HIV treatment indicators, and related adult morbidity indicators. Any consideration of the health system effects of aid should examine trends in these outcomes. Second, analyzing service delivery trends, broadly defined, can help illuminate the questions derived from the PWF theoretical framework. Clinical service delivery is a high transaction intensity, low specificity function, but other services have different levels of specificity. High specificity measures of service delivery, such as outpatient visits, or average distance to a health facility, can be contrasted with low specificity measures of curative care. This section will consider two aspects of curative service delivery: access to care and quality of care.

Population-oriented preventive and family-oriented self-care services

The majority of the services that fall under the category of population preventive and family self-care have already been discussed in the child health section, so I will not

analyze them in detail here. The main population-oriented preventive health measures cited in by the World Bank (2004) are immunizations and vitamin A supplementation.²²⁷ Accordingly, we will consider them here as illustrative examples of Uganda’s ability to implement these types of interventions. Community-oriented support for self care interventions include promotion of exclusive breastfeeding for children under 6 months, contraceptive use and safe sexual practices, and proper treatment practices relating to diarrheal disease. Here we will consider exclusive breastfeeding and knowledge of oral rehydration salts and diarrhea treatment more generally as representative indicators.

As chapter 3 shows, Uganda’s immunization performance has been weak over the period in question. On Vitamin A supplementation, by contrast, Uganda has performed quite well, increasing coverage dramatically. On family-oriented self care support, Uganda’s performance was mixed over the period in question. Treatment of diarrheal disease in children is a reasonable test indicator, because diarrheal disease is quite common, yet can be treated with simple items that virtually all households can afford if they are informed about them. Another simple intervention with important implications for child health is the promotion of exclusive breastfeeding for children under 6 months of age. As table 6.1 shows, there have been some gains in exclusive breastfeeding under 6 months, but diarrhea treatment appears to have worsened, even as the percentage of children with diarrhea taken to a health facility has increased substantially.

Table 6.1: Family-oriented self care in Uganda

	% of children	% of children	% of	% of	median	% exclusively
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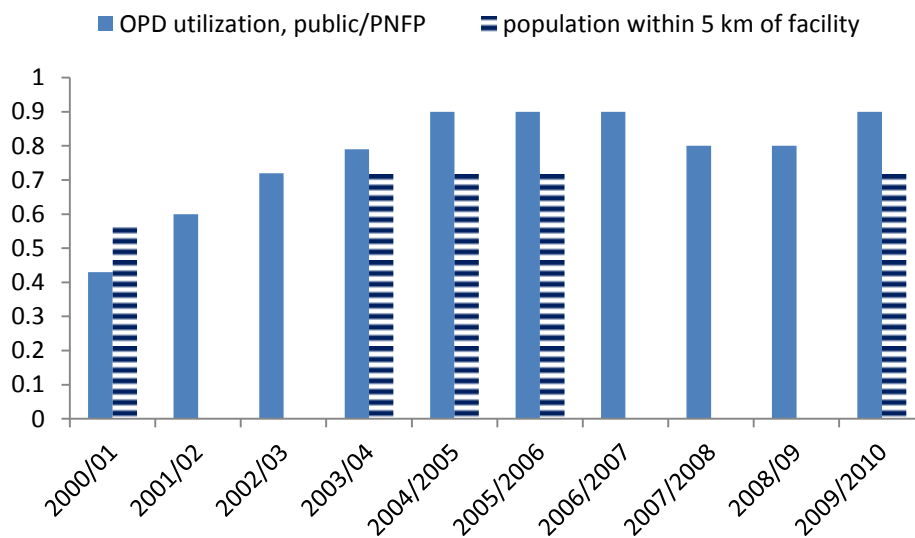
	treated with oral rehydration therapy or increased fluids	treated with oral rehydration salts or recommended home fluids	children taken to health facility	mothers aware of oral rehydration salts	months exclusive breastfeeding	breastfed until 6 months
1995	0.68	0.49	0.55	0.73	3.00	0.57
2000	0.53	0.43	0.45	0.92	4.70	0.63
2006	0.54	0.43	0.70	0.86	4.30	0.60

Service delivery: Access to clinical care

A significant portion of health services in Uganda are provided to children under 5 years of age and pregnant mothers. Trends in access to these services were discussed in chapter 5. In this section, I will examine quality of care measures for child health, as well as access to care for the rest of the population. As in Tanzania, detailed information on trends in adult health service coverage and health outcomes are scarce, since the best source of health data, DHS, does not cover adult health in great detail. However, as in Tanzania there are household budget surveys that provide some information on health care access and outcomes. In addition, the routine HMIS is more reliable in Uganda than in Tanzania, and is another source of information on service delivery trends. Both sources show that over the period in question, access to public health care increased sharply: According to HMIS data, outpatient visits more than doubled, from 0.4 to 0.9 visits per person. Moreover, the sharpest increase happened immediately after the abolition of user

fees in 2001. Burnham et al (2004) showed that in a sample of 78 facilities, outpatient visits were 53% higher in the year after the abolition of user fees than they had been in the 8 months before. Deininger and Mpuga (2004) show that the effect was broadly pro-poor, using household survey evidence to show that the percentage of people failing to access any care when sick was down sharply between 2000 and 2002, and that spending on health care by households in the bottom two wealth quintiles also declined. Moreover, the increase in access to services went beyond removal of user fees to encompass the construction of new health facilities: the 2006 Ministry of Health Facility Inventory shows that public and private not-for-profit (PFNP) facilities increased from 1,630 to 2,960 between 2000 and 2006 (Okwero et al. 2010).

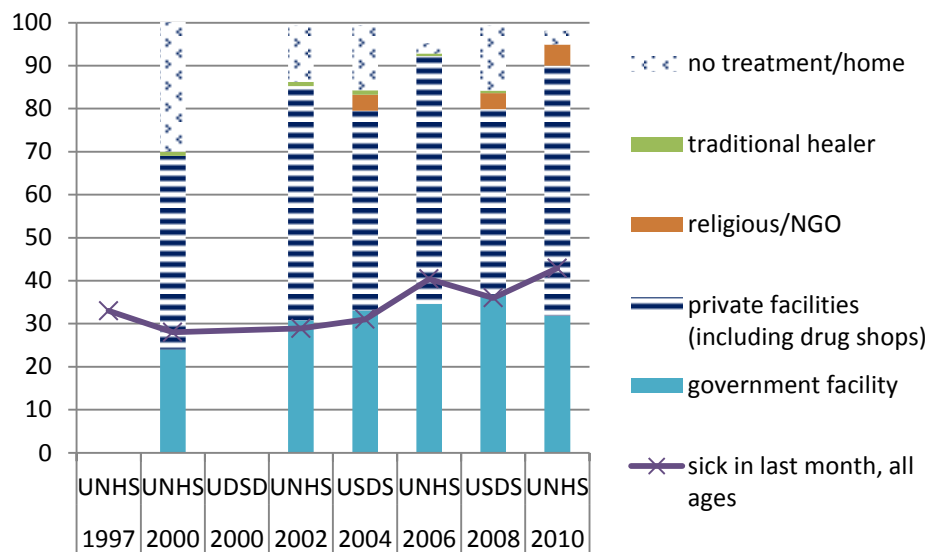
Figure 6.1: Outpatient visits per capita and percent of population with 5km of health facility, 2000-2010



Source: World Bank (2010); Government of Uganda (2010).

The household survey data also show that self-reported morbidity has actually increased over the period in question: 33% of the population reported sickness over the past month in 1997, which increased to 43% in 2007 (see figure 6.2 below). However, self-reported morbidity is a relatively unreliable figure. A more reliable conclusion from these surveys is that even as overall health service usage was increasing, the composition of the total health visits changed over time. In 2006, almost 60% of total visits were either to a private clinic or drug shop, while just 29% were to a government health center or hospital. Thus while the user fee elimination increased public visits, private visits were also increasing sharply over this period. (Increasing disposal income clearly contributed to this.) By contrast, in 2007, 63% of Tanzanians visited a public sector facility when sick. There is also a clear wealth gradient: 40% of sick Ugandans use a government facility while just 20% of the richest quintile use public facilities.

Figure 6.2: Sickness and choice of health care providers, 1997-2010

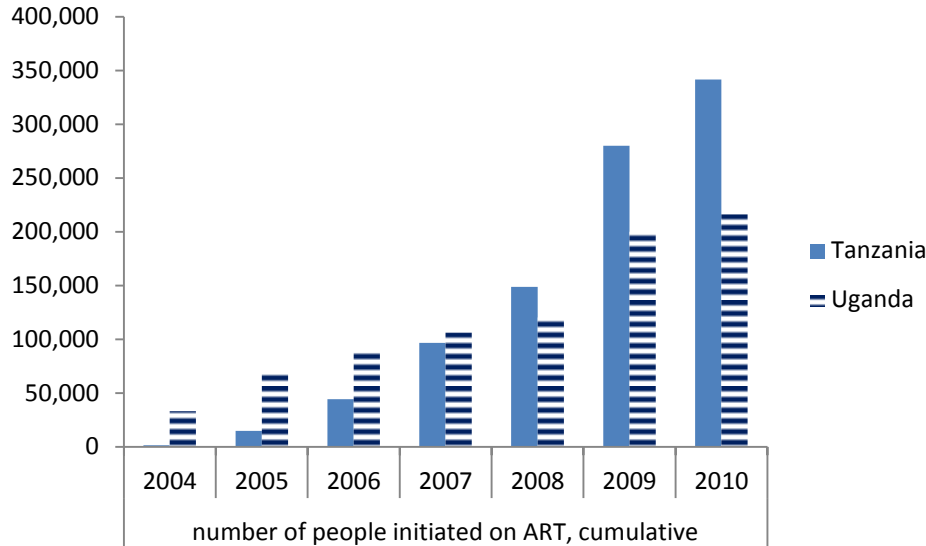


The other major development in health service delivery has been large increases in HIV/AIDS and TB services, thanks to PEPFAR and the Global Fund.²²⁸ Like Tanzania, Uganda was selected as a PEPFAR focus country. This meant that major new HIV resources began to arrive in 2005, when Uganda received \$90.8 million, and continued a sharp upward trend, reaching \$285 million in 2009. While its relationship with the Global Fund has been rocky, Uganda has received 8 Global Fund grants, with approved funding thus far totaling \$414 million, while the amount disbursed thus far is \$164 million.²²⁹

PEPFAR and Global Fund resources have supported the scale up of HIV/AIDS care and treatment services, especially antiretroviral treatment. In addition, they have also financed prevention services, such as counseling and testing, condom distribution, prevention of mother to child transmission of HIV, and behavior change programs. PEPFAR resources have also financed expansion of tuberculosis treatment, as well as services for orphans and other vulnerable children. By 2010, 200,000 Ugandans had been initiated on antiretroviral therapy out of the 350,000 that were in need of the treatment (compared to over 340,000 out of 440,000 in Tanzania).²³⁰ 33,100 HIV-positive women had received PMTCT services, and just under 3 million Ugandans had been tested for HIV.²³¹ For tuberculosis Ministry of Health data shows that the case detection rate was essentially unchanged from 1999 to 2008, 59.9% to 57.4%, while treatment success increased sharply, from 48.5% to 74.7% over same period (Ministry of Health HSSP III 2010).

Figure 6.3: Number of people enrolled on antiretroviral therapy in Uganda and

Tanzania



Clearly, the increase in access to treatment in Uganda has been remarkable and represents a lifeline to many of the estimated 350,000 Ugandans in need of life-saving antiretroviral treatment. Unfortunately, the rapid scale up in HIV/AIDS-related service delivery has slowed since 2009, and it has already threatened to reverse itself. While Tanzania continued rapid scale up of ARV treatment through 2010, Uganda had begun to ration access to ARVs (Allen, 2010; Nakkazi 2009). The reason for this was simply lack of funding. In 2010, Tanzania received a large Round 8 Global Fund grant to complement \$342 million in PEPFAR funding, while Uganda received significantly less funding from PEPFAR (\$285 million) and received far less Global Fund support. In fact, Uganda's most recent Global Fund grant for care and treatment was only \$4 million (out of \$70 million requested), a mini grant designed to test the new financial management and anti-corruption procedures installed after the 2005 corruption scandal. This funding shortfall had concrete results: PEPFAR instructed its recipient NGOs to refrain from initiating new

patients on ART (Basudde, 2009).²³² The pediatric portion of its ARV response was also facing a huge funding shortfall, as UNITAID, the French-backed scheme to fund ARVs by taxing air travel, was set to discontinue its purchase and donation of pediatric ARVs.

In September 2010, the US announced further support for another 76,000 ART patients over two years, bringing the total supported by PEPFAR to over 250,000 by 2012. Of these 250,000 who had been cumulatively initiated on treatment, there was no information about how many were still on treatment. (Neither PEPFAR nor the Ministry of Health has made this information public, if indeed they have it.) Yet whatever the true number of Ugandans currently on treatment, there appeared to be little prospect of reaching the goal of universal access to antiretroviral therapy. As one Uganda PEPFAR program manager noted:

We know that the demand [for ART] is still more than what we can even supply, and it's already expensive. I think: Who is going to meet that demand after next year? ... You really feel that, come on, there is no way that the Ministry of Health is going to take on this whole thing, and [especially] now if the numbers are going to keep on increasing and increasing. So the future lies in winning the battle against prevention.²³³

This was a challenge faced by most PEPFAR countries as they faced the unforgiving logic of AIDS treatment in the face of continuously high incidence of HIV. But on prevention, Uganda might be expected to be exceptional. Uganda, after all, was the lone African success story in prevention of HIV/AIDS in the late 1980s and early 1990s. Yet by the mid-2000s, this success has slowed dramatically. The decline in HIV prevalence has (at best) stalled, and alarming evidence from the 2004-05 AIDS Indicator Survey (AIS) shows that various risk factors are actually moving in the wrong direction, even as the amount of funding devoted to HIV prevention increased dramatically. For example,

the percent of men with multiple partners and the percent of women with STDs have actually increased in recent years (Epstein, 2007; Timberg, 2007). There is a widespread belief that the massive increase in international funding for HIV prevention activities has been a distraction at best: Green (2011) and Epstein (2007) both make the case that Uganda's heterodox home-grown solutions were distorted by less effective aid-funded international "best practice" programming. The former head of the national AIDS control program, Dr. Sam Okware, has argued that "the whole thing is too big now, too heavy. It has adapted too much to international guidelines instead of sticking to our own methods, which were very controversial at first but which worked."²³⁴ Green (2011) cites the example of the 2005 National AIDS Strategic Plan, which he argues was completely distorted due to the intervention of Western consultants with ideological commitments against abstinence and fidelity programs, even though these programs are generally believed to explain Uganda's earlier prevention success.

The above discussion shows that while child health outcomes were stagnating in Uganda, overall *access* to public health services actually improved. New facilities were built, more health workers were hired, and outpatient visits to health facilities doubled. Treatment for the main driver of adult mortality, HIV/AIDS, was scaled up dramatically. But given that sharp increases in access did not lead to improvements in child mortality outcomes, it suggests that the health system in Uganda was relatively successful at increasing *access*, but much less successful at improving *quality of care*.

Service delivery: Quality of clinical care

The importance of quality of care to health-seeking behavior in Uganda is suggested by the fact that even with no user fees, 60% of the poorest Ugandans still use private facilities when sick. Given the discretionary/low specificity nature of many health services, the PWF framework predicts that it should be much more difficult to improve quality of care than to improve access. The Ugandan experience, like that of Tanzania, bears out this prediction. Reliable measures of trends in overall quality of care do not exist in either country. However, as in Tanzania, there was an explicit effort to improve quality of clinical care for children under 5 in Uganda, through the implementation of the Integrated Management of Childhood Illnesses program (IMCI). This program will therefore be used as a proxy for overall quality of care. IMCI was introduced early in Uganda because it, like Tanzania, was selected to take part in the WHO's multi-country evaluation of IMCI.²³⁵ The program was introduced in two pilot districts in 1996, was rolled out nationally in 1998, and by 2000 it had been introduced in 55 out of the (then) 56 districts.

Early evidence on the effectiveness of IMCI in Uganda comes from Pariyo et al. (2005). Pariyo and co-authors show that IMCI was initially associated with performance improvements, but they also note that the improvements still resulted in quite low levels of care. In 2002, for example, only 51% of children presenting with pneumonia were treated correctly, and 53% with malaria were treated correctly. (Incidentally these numbers are comparable to the national figures found in 2006 and presented in figure 6.4). This is better than the 48% and 31% correct treatment figures recorded for non-

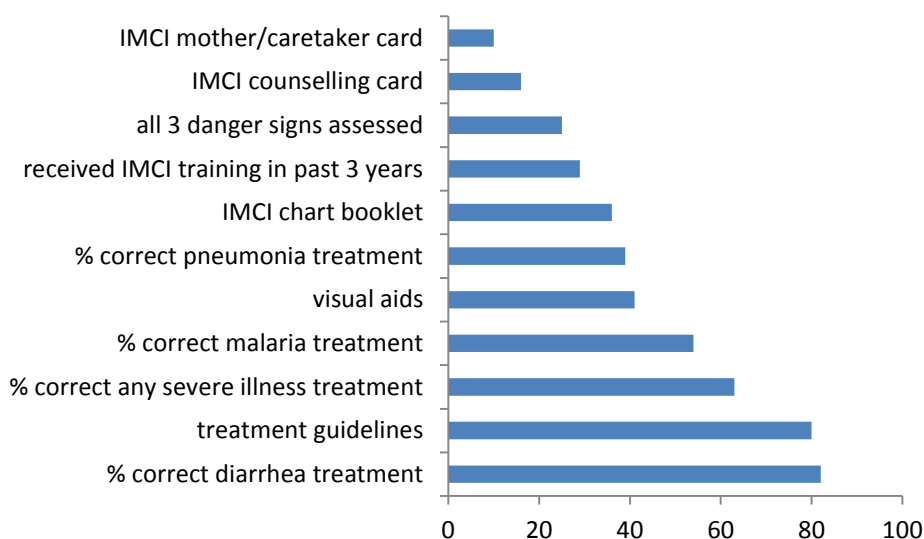
IMCI health workers, but is certainly still disappointing. It is also notably worse than the results of IMCI in the Tanzanian IMCI evaluation, where correct treatment for pneumonia, malaria and anemia was 30-40 percentage points higher in the IMCI districts, with 75% correct pneumonia treatment, 88% correct malaria treatment, and 44% correct anemia treatment.

However, on closer examination it seems likely that these differences say less about the differing effectiveness of IMCI in the two countries than they do about the differing nature of the IMCI evaluations. Tanzania tested IMCI in just two districts, and they were Demographic Sentinel Surveillance districts that benefited from numerous other health system improvements. The Uganda evaluation was much on a much larger scale, in 10 districts, representing almost one-quarter of the under-5 population of the country. Weaker results in the Ugandan case, Pariyo and co-authors argue, likely reflect the attenuated effectiveness of a scaled up, rather than a pilot, program.

This interpretation is supported by the results of the DHS Service Provision Assessment surveys that were conducted in both countries in 2006 and 2007. These surveys collected extremely detailed data about quality of care, including by observing a large, random sample of sick child consultations. Both countries show similarly poor adherence to IMCI protocols. As figure 6.4 shows, in Uganda just 25% of children were assessed for all three IMCI danger signs, three key symptoms were monitored in 52% of cases, all four required physical exams were conducted in only 13% of cases, and the IMCI program's key advice was given to parents in 18% of cases (the equivalent numbers in Tanzania are

11%, 46%, 11%, and 6%). Meanwhile just 36% of facilities had an IMCI chart or booklet, 16% had an IMCI counseling card, and 10% had the correct IMCI mother/child caretaker card. Although baseline numbers (for the period prior to the adoption of IMCI) are not available, it is clear that in neither country did IMCI dramatically improve facility-based care for sick children, since the overall numbers remain so low.²³⁶

Figure 6.4: Quality of care for sick children and IMCI program coverage in Uganda



Source: Uganda Service Provision Assessment (USPA) survey, 2007

One additional factor to consider might be the difficulties in scaling up IMCI in the context of rapid district creation, since it relies on districts to implement it. One Tanzanian doctor that worked on IMCI in both countries thought that Uganda's IMCI weaknesses were due to lack of Ministry support for district health management teams.²³⁷ Since central government technical assistance to district health teams has in general been severely complicated by district creation, it stands to reason that IMCI-related assistance

may have also suffered. Also, Nsungwa-Sabiiti et al (2004) note that districts are supposed to finance IMCI training out of their own budgets. The recent squeeze on the development (as opposed to recurrent) side of district health budgets also helps explain reduced emphasis on IMCI in recent years. Finally, there is also a “community care” component of IMCI, which tries to train family caretakers in proper practices relating to common childhood illnesses. Uganda was ahead of Tanzania in trying to implement community IMCI, through its community health worker program. Unfortunately this program was essentially turned into the “home-based fever management” malaria treatment program, which then collapsed for lack of malaria drugs during the Global Fund fiasco.²³⁸ By 2010, several interviewees indicated that the IMCI program had lost momentum in Uganda. As one district health official noted:

It was very effective when had some trainings for IMCI for some staff; a number of nurses went for that. We gave them the skills to diagnose and treat childhood illness...But they need to have what to use, to make use of the skills: the medicines. But as you know, that is a long time ago, and here are many new people that have come on board... We no longer have [IMCI] as part of our training, because we don't have any partner to help us.²³⁹

It seems clear that despite positive beginnings in the late 1990s, efforts to improve quality of care though IMCI faltered in Uganda thanks to the broader pathologies of the health system.

Governance

The Global Fund money came in and it was put among the wolves.
-researcher, Makerere University School of Public Health²⁴⁰

When we started the SWAPs, we had one plan, and one implementation mechanism, even though the resources were coming from multiple sources. But it was mostly budget support... But then came PEPFAR. And PEPFAR was disruptive, very disruptive indeed, very disruptive. And of course then the Global Fund. We expected the Global Fund to provide extra resources, so the Ministry of Finance also cut down resources, but the Global Fund money didn't come. But the country had *already* cut down [the health budget]. So it's a combination of the disruption of core programs, and under-resourcing, and

demoralization, because of the Global Fund scandal... it is part of the problems which have not gone away up to now.

-former high-level Ministry official²⁴¹

What I've observed in Uganda is that the people in Uganda who negotiate for these funds negotiate it with a view that they will be the ones directly in charge of these funds. And it doesn't matter what the donors actually tell them, they will accept that, until they become in charge, and then they manipulate the money that can benefit them as individuals. In other words there is a lot of entrenched corruption involved in the negotiations, and in the disbursement of these funds. And so that has inhibited our collective effort to stand on the key things that are critical for us to benefit. I think that has been the weakness.

-former Ministry official²⁴²

Governance has been considered already, as a potential explanatory factor for Uganda's child survival outcomes. In this section the focus is different: The objective is to test predictions derived from the PWF model. Following the model as discussed in chapter 2, the overall function of governance is broken down into a set of constituent functions: relatively low transaction intensity and high specificity decisions about policy formulation and resource allocation (i.e. *budgeting, planning and policy formation*), versus the high transaction intensity, high specificity activities of *monitoring, supervision, and performance management*.

The budgeting, planning, and policy formation functions improved over the first half of the period in question, before declining over the second half. As mentioned above, the structural and governance reforms that began in the late 1990s – the SWAP, creation of a Health Sector Strategic Plan, designation of a Minimum Health Package, and decentralization – improved governance of the health sector starting in the late 1990s and continuing into the early 2000s. Policy became more coherent, donor fragmentation was reduced, and budgeting was more closely tied to results.²⁴³ Health sector stakeholders often refer specifically to the first HSSP, and the period it covered (2000/2001 to 2004/2005) as a period of effective planning and genuine strategic thinking about

Uganda's health challenges; "a time when technocrats were able to drive the process."²⁴⁴ Olivera Cruz et al (2006) argue that not only did the SWAP reduce fragmentation, it also created a useful policy forum involving the donors and government (the Health Policy Advisory Committee) that provided a needed space for policy debate and built trust between the donors and government. Furthermore, the technical working groups commissioned operational research that targeted key constraints (such as drug and financial tracking studies), resulting in more evidence-based policy.

Like Tanzania, Uganda faces difficulties in *monitoring* front line service providers. A major goal of decentralization was to improve bottom up monitoring of health services. In order to institutionalize bottom up oversight, community-level facility committees known as health unit management committees (HUMCs) were established. But in many cases they meet infrequently and do not provide meaningful oversight (Hutchinson 2001; World Bank 2004; Ssenooba et al 2007). Tashobya et al (2006) note that the elimination of user fees took away one of their main responsibilities and thus weakened these committees. During the late 1990s, it was felt that district supervision structures were not performing adequately, and so in order to facilitate supervision of service delivery at the facility level, a new administrative level known as the "health sub-district" was introduced. This was instituted at the administrative level below the district: the county level, which is also the Parliamentary constituency level. The district health team would keep responsibility for budgets, strategy, and coordination with donors and the central government, but the HSD would manage day-to-day operations, supervision and technical support for facilities in their county. Each health sub-district was supposed to

have a facility equivalent to a district hospital or high-level health center with capacity for emergency obstetrics and surgery (an “HC-IV” in the Ugandan system) which would also serve as the headquarters for the HSD management team. This new HSD system provided part of the impetus for the major facility construction program (mentioned above) that took place during the HSSP I period (2000-2005). However, from a promising start, the HSD concept is now seen as a mixed bag: While devolution of responsibility has visibly improved supervision in some districts (Ssenooba et al 2007), the process has been hindered in recent years by the proliferation of districts, and the interruption of HSD-level investment due to the district level health budget squeeze in recent years.

Concurrently with the health sub-district scheme, the Ministry of Health instituted another monitoring and supervision initiative known as the “Yellow Star Program” in 2001. Health facilities were to be evaluated on a quarterly basis according to 35 quality of care indicators, and those that achieved a 100 percent score for two consecutive quarters would receive a yellow star certification which could be proudly displayed in a publicly visible place outside the facility. (Lundberg, 2008). The program had been rolled out in 54 districts by 2010, and showed some promise. But the HSSP III notes that “implementation of the Yellow Star Program is irregular and supervision of community programs is limited,” perhaps explaining why Lundberg (2008) found no difference in quality between facilities that had been awarded a yellow star and those that had not.

Another attempt to improve performance management was the implementation of a pilot pay-for-performance scheme for private not-for-profit health facilities, supported by the World Bank and USAID, between 2003 and 2005. However, this scheme was plagued by design and implementation issues: bonuses were too small and the formula was too complex, and poor planning led to serious data quality issues (Morgan, 2009). Another movement for improved performance monitoring came from the SWAP technical group, which identified supervision as a major problem and commissioned two public expenditure tracking surveys (PETS) focused on the health sector. But neither had much success in catalyzing pressure on service providers.²⁴⁵ In 2009-2010, there were some green shoots on the accountability side. First, a World Bank-funded randomized experiment in village-level social mobilization around health facility committees had dramatic results on health outcomes (Bjorkman and Svensson 2009). This demonstrated the possibility, if there was political will, to greatly increase accountability pressures on public health service providers. And 2010-2011 saw renewed high-level interest, as President Museveni began to speak out about corruption in the health sector. He also commissioned a health sector corruption inspection unit, which went around the country arresting health workers suspected of stealing drugs for re-sale in the private sector (*Independent*, February 7 2010). But it was hard to find observers of the health sector in Uganda during this period who viewed this as a genuine commitment to improved accountability, rather than election year posturing.

A final aspect of Uganda's health sector governance is the stewardship and regulation of the private sector, which includes the private not-for-profit and the private for-profit

sector. These are important actors in the Ugandan health sector, given that almost one-third of all health facilities in Uganda are private, either for-profit or non-profit. Private for-profit providers are a relatively new phenomenon, and largely serve better-off populations in urban areas, especially Kampala and its environs. Private not-for-profits (PNFPs) have a much longer history, and are found all around the country, especially in rural areas. Originally started by missionaries during the colonial period, they are now organized into umbrella organizations, each of which represents a religious group: the Uganda Catholic Medical Bureau, the Uganda Protestant Medical Bureau, and the Uganda Muslim Medical Bureau. The government of Uganda had little role in supporting PNFP facilities through much of the post-independence period, but this began to change in the mid-1990s. In 1997 the government initiated the PNFP grant program, which was a quarterly subvention to these facilities to cover recurrent costs. The government also developed an institutional mechanism for coordinating with non-profit health providers, via an office of public-private partnership located in the Ministry of Health. Lochero et al. (2006) argue that the institutional governance mechanisms associated with the SWAP facilitated this process by bringing NGO and FBO providers into the policy dialogue in a consistent way. There is evidence that this subsidy was a major help to PNFP providers, since it provided on average 30% of their budgets. However, the budgetary subvention stopped increasing in the mid-2000s, and as a result PNFPs have again come under severe cost pressure. In particular, they have seen dramatic staff attrition as public sector salaries increase. The salaries that PNFPs pay, by contrast, are essentially fixed, given flat budgetary subventions (the rest of their revenues come from user fees and international donations). This squeeze on PNFP budgets may have been a lost

opportunity for Uganda. Reinikka and Svensson (2004) present evidence from Uganda that quality of care is higher in PNFPs, in part because intrinsic staff motivation appears to be better.

As discussed in chapter 5, Tanzania implemented a large program to regulate, license, and accredit their informal private sector drug shops (*duka la dawa baridi*) over the past decade. No comparable effort existed in Uganda, despite equally high reliance on these shops for first line treatment for many diseases, especially malaria. Informants cited the higher capacity of the relevant regulatory agency in Tanzania (the Tanzania Food and Drug Authority) compared to Uganda's National Drug Authority as a possible reason for Uganda's neglect of private drug shop regulation.

Thus the governance functions of planning, budgeting, policy formation, monitoring, supervision, performance management, and regulation all began to improve in the late 1990s to early 2000s, before reversing their progress in the 2004-2010 period. This reversal came not for any reason relating to the inherent nature of these functions, but rather due to the broader political forces that encroached on the health sector. Given that the 2003-2006 period is generally identified as a key turning point in sectoral governance, it is tempting to blame vertical programs for this decline. Indeed, virtually all analyses of Uganda's SWAP cite the emergence of PEPFAR and the Global Fund as a major threat to the governance gains that the SWAP brought (Hutton 2004; Olivera Cruz et al 2006; Ortendahl 2007). However I would argue that while vertical programs undermined sectoral governance at the margin, to give them the primary blame is a misreading of the

situation. Vertical funds have underperformed in Uganda because the health sector is badly governed; they did not cause the bad governance. While they have, at the margins, had negative effects on various aspects of health sector governance, weak sectoral governance in Uganda is rooted in deeply political dynamics that are not directly related to the arrival of PEPFAR and the Global Fund.

The one way in which vertical programs played a role in decline of sectoral governance is through the embezzlement of Global Fund resources in 2005 and the subsequent suspension of funding. This had devastating direct effects: As described above, the lack of funding of key malaria control interventions can be traced to the interruption of Global Fund support. But it also had highly damaging indirect, governance-related effects: by demoralizing Ministry staff, and hastening the exodus of qualified technical staff and the concurrent shift towards a more politicized, less autonomous ministry. As one former Ministry official stated: “The Global Fund problems set in motion a cycle which resulted in demoralization of the [health] sector, and reduced resources.” Another blamed the Global Fund for political naivete, or at least for extremely bad timing, by bringing major aid resources to Uganda and demanding relatively rapid spending of those resources during the highly sensitive political period of 2005-2006.

That said, it is hard to blame PEPFAR and the Global Fund for these effects, even if the presence of their resources was in some sense the proximate cause of the highest profile health sector corruption scandal. It is by no means clear that these resources were any more susceptible to corruption than normal health funding. In fact, vertical fund resources

are typically harder to steal than normal health funding, because of the elaborate controls that these donors demand. If top officials were involved in theft of Global Fund (and GAVI) resources, it is hard to believe that there was not even more chicanery associated with domestically-generated funds.

Beyond this, there are a range of other governance effects that can legitimately traced to the arrival of the vertical funds. These effects are quite similar to the ones described in Tanzania in chapter 4. First, it is clear that policy coherence declined: The existence of a new pool of funds, as large as the overall health budget but managed outside of government systems, reduced the ability of the government to plan, budget, and make informed resource allocation decisions (Nabyonga et al 2009). Although Global Fund and GAVI resources are now theoretically captured in the MTEF (MOH 2010), PEPFAR continues to be off budget. Early on, the Ugandan government fought this trend, insisting on fitting project-based health spending under sector ceilings, citing concerns about the coherence of budgetary and planning processes (Wendo, 2002; Ortendahl 2007). But this proposal was quietly dropped when the size of PEPFAR and Global Fund budgets became apparent.

Moreover, vertical funds brought about further fragmentation in the institutional architecture that governs health sector aid in Uganda. With the formation of the SWAP, the Health Policy Advisory Council (HPAC) became a key venue for negotiations between health sector donors and the government. However, there was already a separate consultative body for AIDS programming known as the AIDS Partnership Committee. This group, hosted by the Uganda AIDS Commission, met monthly and consisted of both

public and private and NGO participants in the national HIV/AIDS response. PEPFAR started participating in this body as its main forum for coordination with the government. Similarly, the Global Fund required the creation of a Country Coordinating Mechanism, which played a similar function. In addition to these competing, overlapping institutions, there was extensive fragmentation within PEPFAR, as USAID and CDC often squabbled amongst themselves, and both struggled to coordinate their many implementing partners. This was mirrored on the Ugandan side by divides between the Ministry of Health and the Uganda AIDS Commission.

Compounding this problem is the fact that, as several interlocutors stressed, decisions about PEPFAR and Global Fund resources were often handled at the political level, further decreasing planning coherence: As one former Ministry official put it: “the Ministry and the rest of us are completely paralyzed, we don’t know what to do, because it is all happening above us...it makes planning extremely difficult.” Another noted that “here in Uganda we have negotiated for individual interests... [PEPFAR and the Global Fund] were overtaken by political power... there was a lot of rushing to the big politicians, and directives would come down,” adding that the initial PEPFAR negotiations were on the Embassy to Statehouse level. As a result, technical Ministry of Health input was often ignored.²⁴⁶ Unlike in Tanzania, the Ugandan government was not able to take firm stands with PEPFAR to make it avoid some of its own worst habits, such as extreme fragmentation and duplication. One PEPFAR program manager described active requests for direction and leadership from PEPFAR and its implementors to the government of Uganda to rationalize PEPFAR care and treatment

activities, to no avail: Only PMTCT activities had been rationalized and regionally organized under government direction at the time of writing.

At the technical level, the government of Uganda continues to request what it calls “Long Term Institutional Arrangements” to regularize its relationships with the vertical funds. They propose that the Global Fund’s Country Coordination Mechanism be merged into the HPAC (for TB and malaria issues) and that it be merged into the UAC-hosted Partnership Committee (for HIV/AIDS issues). This proposal should have fallen on fertile ground, since at the global level, both PEPFAR and the Global Fund have begun to change their modes of operation to increase country ownership and reduce parallelization. For PEPFAR, this has taken the form of negotiated “Partnership Framework” agreements which give greater control over priority setting to recipient governments. These agreements are also supposed to create new institutional mechanisms by which US government agencies and recipient countries interact. Yet while this process had been completed in Tanzania by early 2010, it had not even begun in Uganda by late 2010. According to interviewees, the US government simply did not trust the Ugandan Ministry of Health enough to hand over any real responsibility, especially in advance of the 2011 presidential election. All discussion of a Partnership Framework process had been postponed until mid-2011 at the earliest. Similarly, in the post-scandal environment (and with ongoing, deeply frustrating disputes about proper procurement procedures), the Global Fund was also extremely wary of handing greater responsibility to the Ugandan government. A vicious cycle had set in, whereby PEPFAR and the Global Fund maintained parallel systems because sectoral governance was so weak, yet the Ministry

stayed weak and irresponsible at least in part because PEPFAR and the Global Fund had taken over many of their core responsibilities. Meanwhile, the regular health sector donor group (HPAC) was gradually losing its functionality; the government's own Health Sector Strategic Plan III notes that "there is an emerging view that the earlier dynamism and effectiveness of the Uganda SWAP has begun to wane;" and noting that "a strong disincentive for active participation of partners is the increasingly common practice of late coming and/or absence of key MOH officials from meetings convened by the Ministry of Health itself."

The government of Uganda's reaction to this fragmentation was to trumpet its interest in the International Health Partnership Plus, which was founded by a group of European donors as a more horizontal, country-led alternative to PEPFAR and the Global Fund. The IHP envisioned that health sector aid would be delivered via a "country compact" which would lay out the terms of IHP support to Uganda's health sector. But at the time of writing, this was still very much in the planning phase.²⁴⁷ In general, there was a clear sense from interlocutors that the increasing coherence which had begun in the health sector in the late 1990s/early 2000s was interrupted by the arrival of the vertical programs. But it is also clear that there were bigger problems with governance in the health sector at this time.

Pharmaceutical supply chain

You've seen a lot of money dumped into National Medical Stores, and basically I think that there management and board was so corrupt that they basically had to start over. So I think anything that went into the system before 2008 was kind of gone. They hired new general managers and established a new board in 2008. And they've put in money to the Global Fund for new trucks, and USAID is giving some

support. But to me, it's not that they don't have the infrastructure to do a good job...they're only going to 80 districts every two months. It's not an overwhelming logistical task.

-HIV/AIDS NGO country director²⁴⁸

We thought [supply chain problems] were something temporary, but it has gone from year to year. So it's not something like where it is just a temporary thing. It seems now to be systemic. It's gone on forever. I last had some work to do with NMS in 2006 and we had looked at previous records from 2000, and we actually saw that these stock outs started in the late 1990s, and have worsened over time, until 2006. And now in 2006, it seems to have been better than what it is today, in 2010. So I can conclude that the drug situation has not really improved. In fact it has gone from bad to worse

-former Ministry official²⁴⁹

I mean the procurement and supply chain system has completely failed. Most times 40%, 50% of facilities don't have [malaria] medicines.

-Ugandan malaria researcher²⁵⁰

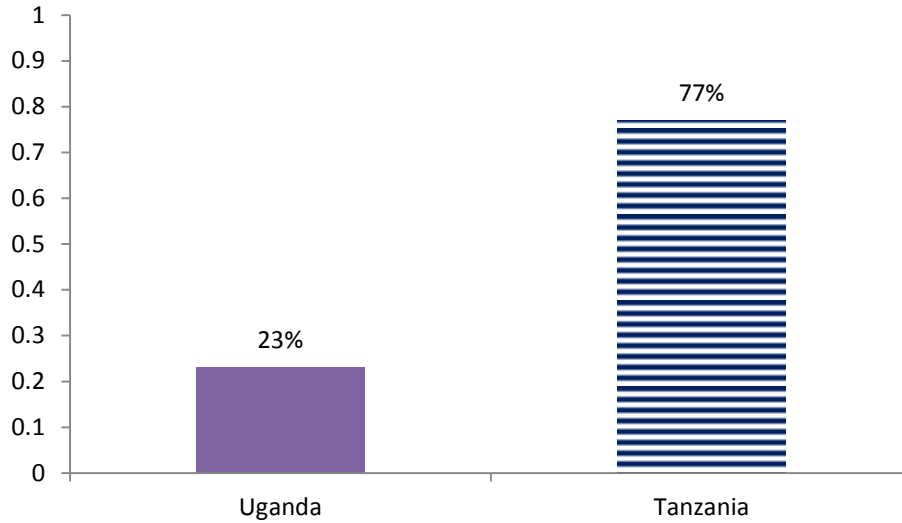
The pharmaceutical supply chain is a key health system function, and a problematic one for Uganda: For many years, lack of drugs in facilities was perhaps the single biggest health system-related complaint (Hutchinson, 2001; Iliffe 1998).²⁵¹ However, just as in Tanzania, there have been a series of reforms aimed at improving the drug supply chain. In fact, the basic elements of reform are essentially identical: a shift from a “push” to a “pull” system of drug distribution, some initial (and subsequently reversed) consolidation of parallelized distribution chains, and significant increases in resources for drug procurement.

These reforms began in the late 1990s under the aegis of the SWAP, when a Technical Working Group on Medicines Procurement and Management was formed (Nazerali et al, 2006).²⁵² The Working Group commissioned two studies (a drug tracking study and an evaluation of the then-operative “push” system),²⁵³ which together helped build consensus for reform. Over a six month period in 2003, a pull system was instituted, financing streams were rationalized, planning was improved, and a tracking system was installed. To finance the purchase of drugs on a demand-driven (or “pull”) basis, districts

were given funding from their earmarked Primary Health Care block grant (of which 50% is supposed to be spent on drugs),²⁵⁴ as well as through a credit line at the National Medical Stores (NMS). Fragmentation was reduced, as the separate supply systems for the central government, for districts, and for donor projects were consolidated to an extent. In theory, decentralization also empowered local health officials, and through the pull system, allowed them to match needs with supply. The budget for essential medicines also increased from \$0.80 to \$1.80 per capita between 2000 and 2005 (Omaswa 2006). Nazerali et al (2006) conclude that “In a relatively short period of time, the health sector has taken a leap forward in...medicines supply... There is a better balance of resource inputs and dramatic improvement in medicines funding overall. Available resources have been increasingly prioritized towards the sub-district level and more efficiently.”

Yet this positive view is somewhat hard to credit, when compared to the data that is publicly available on supply chain performance. Annual Health Sector Performance Reports, for example, show no improvement: the number of facilities with no stock-outs of any “tracer” drug or supply actually decreased from 33% in 2002-03 to 28% in 2007-08. More troublingly, in 2007, the DHS Service Provision Assessment facility survey found that only 23% of facilities surveyed had a first-line anti-malarial, an oral antibiotic for respiratory infections (amoxicillin, cotrimoxazole or Chloramphenicol), and oral rehydration salts, the three essential medicines to treat major childhood illnesses (the comparable figure from Tanzania was 77% in 2006).

Figure 6.5: Percentage of health facilities with three major child illness treatments in stock



Data from the 2007 Tanzania Service Provision Assessment; 2007 Uganda Service Provision Assessment

Equally as striking as the massive disparity in availability of child medicines is the difference in availability between public and private facilities. In Uganda, 59% of private facilities (including for-profit and not-for-profit) have all three essential child health drugs, but an incredible 12% of public facilities have all three drugs. By comparison, Tanzania has virtually no public/private gradient for these essential medicines: 78% of public, 78% of faith-based facilities, and 76% of for-profit health facilities have these drugs. Nor is this disparity simply driven by Uganda's Global Fund-related malaria treatment problems: presence of first-line malaria drugs is actually quite high, at 80%.²⁵⁵ First-line oral antibiotics for respiratory infections (such as amoxicillin, cotrimoxazol, or Chloramphenicol) are the main driver of this difference; they were available in just 18%

of public facilities. Yet in 2006, 15% of Ugandan under-5s suffered from acute respiratory infection in the two weeks before the DHS survey.

What causes this extremely weak performance, especially in public facilities? One reason suggested by numerous interviewees was politicization and corruption in the pharmaceutical supply chain in Uganda. While hard data on corruption is not available, there is ample anecdotal evidence that corruption in the public supply chain in Uganda had reached massive proportions. Evidence that this was common knowledge comes from someone who might seem to have a strong interest in denying that this was the case:

President Museveni himself. In a letter to the former Permanent Secretary of the Ministry of Health, Mary Nanono, he made the following statement:

In 2006, I gave a directive to the Ministry of Health to emboss all Government drugs so as to stop *the by now well-known theft of those drugs*, which are sold in shops owned by the medical workers. The Permanent Secretary and other bureaucrats in the Ministry of Health as well as the officials from the National Medical Stores (NMS) dismissed my directive claiming that it was not practical “because it would be costly.”

A similar statement came from the State Minister for Health, James Kakooza. After a 2009 visit to a health center in rural Uganda where he saw customers sent to private pharmacies to buy drugs, even though the drugs were in stock, he told the *Independent* newsweekly, “After my recent experience, I have come to the conclusion that the biggest problem is theft of drugs. The theft is mainly orchestrated by medical workers in our public hospitals.”²⁵⁶

Together with the survey evidence that shows pervasive public sector stock outs, the above quotes from the president and high-level ministry officials speak volumes about the pervasiveness of corruption in Uganda.²⁵⁷ Nor were these statements unusual: In late

2010, for example, Museveni held a press conference in which he stated that it was pointless to allocate more money from the budget for medicines, since he knew that the drugs would simply be stolen and smuggled to southern Sudan or DRC anyway: “The issue is not about increasing the budget because even if we did and the drugs are stolen because there’s a big need in the DRC, we would not get enough drugs to survive our own hospitals.” (*Daily Monitor* September 10, 2010). On another occasion he said: “Local governments have not made the purchases, and even the few drugs that reach health centres from the National Medical Stores have been stolen, leading to shortage of drugs.” (Namutebi, February 7 2010)

Nor was Museveni was the only government authority highly critical of NMS and the medical supply chain: the 2006/07 Auditor General’s Report noted a gap of 6.6 billion UGX between Parliament’s allocation and NMS’ delivery of drugs, noting that funds had also been re-allocated for things like foreign travel for NMS senior staff (Ssewanyana et al 2010). In August 2010 the Auditor General showed that 6.7 billion worth of drugs expired between July 2005 and June 2008, while 736m UGX was lost via the storage and eventual destruction of unneeded drugs (*New Vision*, August 20, 2010). The Danish aid agency DANIDA, which had been a major supporter of efforts to reform the supply chain, decided not to renew its support, and as a result the health sector in 2010 was facing a shortfall in financing for essential medicines.

The final indication that reforms to the essential medicines supply chain did not have the desired effect is that these reforms were, as of mid-2010, in the process of being

completely reversed. Persistent failure of the pull system to ensure supply at the facility level led NMS first to attempt to decentralize ordering down to the facility level, and then to request the Ministry to simply to return to the kit system (*Monitor*, February 24 2010).

As one district health official summarized these developments:

We've been having systems changing over different period of time. There was a time when we were given money and we were the ones procuring drugs straightaway. And then we went to the essential drugs kit... And then we went to the system of the credit scheme, whereby you [at the district level] just order. But because there is a lot of corruption at different levels, that system was also failing. So they have gone back to the other system – the kits.²⁵⁸

The clear implication is that a full decade of “reform” was wasted, in large part due to Uganda’s inability to stem corruption in the pharmaceutical supply chain. The extraordinary difficulty that Uganda has had with this function is problematic for the theory that a low frequency, high specificity service should be relatively amenable to intervention. This stands in contrast to Tanzania, which showed some improved performance, while still falling short of expectations. Again, governance plays a major role. Supply chain functions may be particularly vulnerable to corruption, given the high value of the commodities involved. A lax regulatory and oversight approach to the supply chain may therefore undermine otherwise well-conceived reforms. A further governance-related complicating factor relates to decentralization – several supply chain stakeholders noted that the task of delivering medicines to the district level has become exponentially more difficult as the politically-motivated creation of new districts continues apace (Ssewanyana et al 2010).

A further stress on the functioning of the supply chain in this period was the arrival of vertical funds, and the increased volume of medicine delivery that they require. The

integration of vertical funds into the supply chain appears to be particularly problematic in Uganda. Unlike in Tanzania, in Uganda the majority of drugs and commodities are purchased by the US government rather than by the government of Uganda using Global Fund resources. (Global Fund procurement has been outsourced to various third party agents). ARVs and other commodities are then stored in NMS and JMS warehouses, and distribution occurs on a monthly basis direct to facilities. Essential medicines, by contrast, are distributed by NMS once every two months to district headquarters (Ssewanyana et al 2010).²⁵⁹ Vertical program drugs and commodities had greatly increased the throughput of the system – by 2005 third party stock was three times as large as government-funded essential medicines stock, UGX 17.2 billion to 5.5 billion (World Bank 2010). As one program manager stated:

Creating parallel systems is not good, because it distorts. Like you've seen in HIV/AIDS, you have two trucks carrying the same medicine going to the same facility to put them in the same store, to be managed by the same person. But they still want separate records, separate stores and all that kind of stuff. So that is one of the things that actually distorts the system.²⁶⁰

However, the supply chain problems related to vertical funds in Uganda go beyond the basic facts of parallelization which are also present in Tanzania. First, while some fragmentation was probably inevitable, it has been extreme in Uganda. HIV/AIDS implementing organizations are not organized on a regional basis, as they are in Tanzania. Multiple partners deliver various services in the same regions and districts, and in many cases they have their own dedicated supply system. Moreover, there is no clear division of labor between government, Global Fund, and PEPFAR. Both the regionalization of PEPFAR partners and intra-donor division of labor were imposed (or at least coordinated) by the government in the Tanzanian case. In Uganda, there has been

very little government-directed coordination. Both PEPFAR and the government of Uganda (using Global Fund money or its own resources) may be financing ARVs for different patients at a single hospital. This means that for that facility, there could be an essential medicines supply chain, a government ARV supply chain, a PEPFAR ARV supply chain, and a pediatric ARV supply chain. This extreme duplication, while at some level a response to the dysfunctionality of the basic drug supply system, is clearly wasteful. Similar disorganization is evident at the macro-level. In Tanzania, there is a functional division of labor whereby the Global Fund procures first line and PEPFAR procures second line ARVs. In Uganda there has been no such rationalization of donor functions, which has had serious consequences in the form of stock outs and expiration of HIV drugs. For a period of time in 2009, Uganda reportedly started to refuse additional ARV donations, because too many drugs were expiring due to poor coordination between the Ministry of Health and the National Medical Stores (Plus News, 2009). There have also been stock outs of ARVs, which have been very rare in Tanzania.²⁶¹ Okwero et al. (2010) note that from July 2005 to July 2007, \$2.4 million worth of drugs (82% of which were from vertical funds) were lost to expiry in Uganda. Oomman et al (2008) also highlight the problem of ARV expiry in Uganda.

Both PEPFAR and the Global Fund (along with the World Bank's Multi-Country AIDS Program) have invested in some system-wide physical capacity expansion to mitigate the pressure they have put on the supply chain, but the bulk of their efforts have focused on ARV specific systems (Oomman et al. 2008). This was also largely the case in Tanzania through 2009, but both the Partnership Framework phase of PEPFAR and Global Fund

Round 9 are now slated to bring major new investments in the supply chain function.

Uganda, thanks to its dire relationship with both vertical funds, has not received this new wave of health-systems focused aid.

Finally, the procurement function has been highly problematic in Uganda. Since funding for ARV procurement has been in short supply, due to the Global Fund scandal, the government has attempted to fill in the gap. In 2009, for example, 60 billion Ugandan shillings (\$30 million) were used to procure ARVs and ACTs. But as with the malaria procurement irregularities described above, many stakeholders see troubling patterns in ARV procurement. One Ugandan supply chain analyst made the following point:

They [the Ugandan government] got 60 billion shillings from the Poverty Alleviation Fund, which is actually where donors put their money. And they buy single-sourced, double-the-price ACTs and ARVs from a local company, Quality Chemicals. And it's not value for money! One, the price is wrong, and two, the products are not needed because they're getting them from Global Fund and other donors... They have some interests, and money should be changing... then all of a sudden, they give them 60 billion (UGX), they take off 15 billion for capitalization. It's a private company, for God sake! What are you capitalizing it for? It's not your business.²⁶²

Another HIV/AIDS program manager noted the same problem:

They allocated money for ACTs and ARVs for the first time ever in the last fiscal year, 2008-2009, 60 billion shillings (UGX), which is about \$30 million, and they signed a seven year exclusive agreement with Quality Chemicals, so that they can only use that money with Quality Chemicals... So we get the prices, and we compare them to our price list: it's 50% over for ARVs and ACTs! But nobody asks about it, nobody talks about it. All the program managers know the prices that are being paid. Nobody knows who negotiated the prices; the general practice is that they just don't ask about it, or talk about it. So when things are driven from a higher level, a political level, where the President is said to have direct investments in this company, people just don't actively challenge it or look into it.

The evidence of poor procurement practices is not just anecdotal. In 2005 Uganda's Public Procurement and Disposal of Public Assets Authority (PPDA) audited a sample of

20% of NMS procurements, and found that 22 of the 36 audited procurements were “high risk,” where high risk procurements were those with “serious weaknesses that are liable to cause material, financial, regulatory, or reputational loss...warranting immediate attention by senior management” (cited in Okwero et al 2010).

Politicization and poor performance clearly challenge all aspects of the supply chain, from procurement at the highest levels to “leakage” at the facility level. Increased verticalization via PEPFAR and the Global Fund have added to fragmentation and have put pressure on the fixed physical assets of NMS, but the problems of Uganda’s supply chain go deeper than fragmentation and insufficient physical infrastructure. Politicization and corruption have undermined progress in what could have been a key lever for the improvement of Uganda’s health system.

Human Resources for Health

There’s a huge human resources for health crisis in both countries [Tanzania and Uganda], and not much happening to deal with it in either country...The whole human resources management function is completely wonky. They say, you know we get know these people and they abscond after 3 months. What they don’t say is that they probably haven’t been paid yet. They’ve got people that have been there for 6 months and haven’t been paid yet, and they’re not on the payroll. And it seems to be something that’s endemic to the health sector... There are systematic problems in human resources management, and they are multi-sectoral.

-World Bank health specialist²⁶³

The resistance is from other civil servants, they don’t see why health workers should be paid more than other people. They don’t think it’s a good thing. The president always says: “Increase the salaries of health workers!” but nobody does it. So I don’t know whether it’s lip service that he’s also paying, or if he’s serious about it.

-Ugandan human resources for health expert²⁶⁴

One of the paradoxes encountered in the course of research was that among people who had worked in both Tanzania and Uganda, it was axiomatic that Uganda had significantly higher levels of human capacity, and therefore should have been better placed to make rapid health progress. Nonetheless, both countries have faced very similar difficulties with respect to human resources for health (HRH). In Uganda, there are 27,000 health workers in the public and non-profit sectors (of which just 953 are doctors), spread among a population of 32.8 million (USPA, 2007).²⁶⁵ Human resources-related problems include low wages (leading to moonlighting, absenteeism and side payments), inequitable geographic distribution, high turnover, and low overall staff numbers.²⁶⁶ Distribution is particularly problematic: the Central region has 27% of the population, but 64% of the nurses and 71% of the doctors (World Bank 2008). The scale of the absenteeism problem, in particular, is captured by Chaudhury et al (2006), who measure it at 37% in level III health facilities in 2005. Bjorkman and Svennson find that 52% of staff were not present when their survey team visited, although by making no allowances for excused absences they likely overestimate true absenteeism. There is no equivalent data from Tanzania, but Chaudhury et al.'s finding of 37% is extremely high in absolute terms. Moreover, among different cadres of health workers, doctors had the highest absenteeism rate at 48%. This waste of health resources is compounded by the fact that a payroll review in 2005/06 found that 1.5% of health care workers were "ghost workers," whose wages continue to be paid despite no longer working in the government health sector (World Bank 2010). More recent partial reviews have found similar results: in 2010 for example, 289 ghost workers were identified on the Mulago Hospital payroll (*Monitor*, August 5, 2010), in

addition to the health workers associated with the 10 “ghost” health centers identified in Kampala in February 2010 (Malutebi, February 7 2010).

This litany suggests that the contours of the HRH problem are very similar in Uganda and Tanzania. However, unlike in Tanzania, in Uganda official statistics and documents point to improvements over the period in question. The Annual Health Sector Performance Reports note that there has actually been a significant net increase in public sector staffing levels in Uganda. Over the HSSP I period (2001-2005) Uganda recruited 3,200 primary health care workers, and in doing so, improving staffing from 33% of required levels to 68% in 2005. If the lower level cadre of nursing assistants is included in this calculation, Ministry of Health data suggests that the percentage of filled positions increases to 86% of the required staff levels (USPA 2007).²⁶⁷ In addition, as in Tanzania, there was a policy shift towards differential pay increases for health workers in 2006. Scientists and technical staff across government (including doctors) were slated to receive salary increases (World Bank 2008). However, implementation of this policy was extremely slow. Minister of Health Mallinga reportedly made the case for accelerated implementation to President Museveni in a 2009 cabinet meeting (*Monitor* April 9 2009). Yet at the time of this project’s fieldwork in 2010, the shift had not been made. More information was revealed with the election year budget for fiscal year 2010-2011, when Minister of Finance Syda Bbumba announced a 30% pay increase for “lower end health workers.” Confusion persisted due the vagueness of this announcement; one newspaper reported that “Not even Health Minister Steven Mallinga could explain who exactly will benefit from this pay rise.” (*Monitor*, June 13 2010)

In 2010, rural health workers were slated to get a 30% salary increase relative to urban workers (*New Vision*, April 4 2010) and would receive extra funding for further studies (*New Vision*, December 19 2010). As with human resource staffing levels, Uganda might appear to be significantly ahead of Tanzania on health worker pay reform, but the situation on the ground was actually very similar.

Nonetheless, the increase in staffing levels appears to represent major progress on the human resources problem – and potential vindication of the prediction that a low transaction-intensity, highly specific function such as projecting human resource requirements and hiring sufficient staff should be relatively tractable. However, there are several reasons to pause before declaring Uganda's HRH policies a success. Several interlocutors pointed out that the numbers behind this impressive improvement were somewhat misleading; one former high-level official argued that since many of these new hires were largely low-skilled nursing assistants, their hiring, while impressive in sheer numbers, did not represent meaningful progress towards fixing Uganda's human resources for health problem. Another HRH expert noted that the norms promulgated were extremely conservative – a contention supported by Oomman et al's observation (2010) that the Ministry's long term HR projections leave Uganda with less than half of the workforce density needed to achieve the MDGs. Another interlocutor noted that relatively few of these new hires are retained:

Well actually they [the districts] do hire... they induct people, they get people there, but at the end of the day then they leave, because of the bureaucracies within the process itself. You find that maybe they've recruited these 150 people, but 60% of them, within a year, they are not yet on the payroll. ...So they put in their reports, yes, we have recruited 150 people. But how many of these guys are still working? Usually

that's the whole problem – they leave at the earliest opportunity. People do come, because they are looking for work, but immediately when they get a job elsewhere, they will take off! So yes, the person is there on paper, the Clinical Officer is in charge, but only he appears once a week, arrives at 10 and leaves at 3, so it doesn't help service delivery at all.²⁶⁸

Moreover, there is some evidence that a good percentage of this increase in public sector staff levels simply represents movement of workers out of the PNFP sector. Increased government hiring and wage levels have been widely seen to cause a crisis in the non-profit and faith-based health sector (Ministry of Health HSSP III, 2010). Orach (2008), for example, shows that the Uganda Catholic Medical Board (UCMB) lost almost one-third of its staff every year from 2003 to 2005, both to the government and to vertical programs. Similarly, in a sample of 12 remote districts, attrition of PNFP medical officers in 2007/08 was 54% (Okwero et al 2010). Okwero et al. (2010) also note that Uganda is producing 2,800 new health workers on an annual basis, enough to keep up with attrition and retirement but not enough to dramatically increase the per capita stock of health workers in the country.

The salary increases in Uganda have also not kept pace with those of neighboring countries. A new Ugandan doctor receives a salary of UGX 550,000 per month (\$275), while certain classes of Tanzanian doctors (*daktari daraja la pili*) now receive \$450-\$525. Interlocutors pointed to the serious differentials between civil servants (even highly skilled ones like doctors), and district-level representatives of the central government:

The political side, they are living in luxury, while we are living in misery... a senior medical officer gets 800,000 to 900,000 shillings, and to become senior, he must have worked for about six years in a hospital of some other place. To take an example, the RDC [Regional District Commissioner] gets 2.5 million! Somebody is maybe senior 6, or because of contribution to the struggle. We can't live like that, with these kinds of disparities. These people buy food from the same market!²⁶⁹

Ugandan health officials cited salary differentials like these as a major driver of emigration to neighboring countries such as Kenya, Rwanda and recently South Sudan. But while emigration was widely seen as a growing problem, it was hard to quantify, given another major challenge in the HRH sector: a weak and unreliable human resources information system.

Despite the achievements in staffing levels and pay policy cited in official Ministry of Health pronouncements, a more realistic conclusion is that Uganda has made very limited progress in addressing its health workforce challenges. The reasons for this failure are very similar to the reasons that were encountered in Tanzania. For example, interlocutors emphasized that the multi-sectoral nature of human resources policy was a major barrier to coherent reform (National Health Policy II, 2010). The 2010 Health Sector Strategic Plan III notes that “training of medical doctors and other health staff is governed by several institutions (Ministry of Health, Ministry of Education, PNFP trainings institutions, [and] Professional Councils) with no clear leadership, lines of responsibility, and mandates.”

The other institutions that now play major roles in health workforce policymaking are the District Service Commissions (DSCs). They symbolize the extent to which decentralization of hiring has complicated human resources policymaking.²⁷⁰ A former high-level Ministry official noted:

In Uganda, deployment of health workers in the districts has been abysmal, all the way through, because of recruitment issues, not because of the budget... [Decentralization] made it very complicated, basically because it's not coordinated. Five districts advertise for jobs, applied for by the same people. Someone can get appointed in three districts, he can only take one job, then it leaves the other two unfilled, they have to advertise again, they have no money for ads, because they have to pay the newspaper people, and so posts remain unfilled, over and over.

Another interviewee made a similar point, noting that "Because the hiring is done by the district level, if you get hired by a rural district, you're stuck."²⁷¹ The current Minister of Health echoed this point, telling a district official in Soroti district in 2010, "You will never be able to get them [doctors]; the reason being that under decentralization, the medical personnel are limited to working within the district. There is no chance of transfer, promotion or even study. So someone looks at working with the district as dead, and nobody wants that."

Decentralizing the HR function was widely seen as a mistake, and although recruitment had not yet been re-centralized as of 2010, there was discussion at the policy level of this step (*Monitor*, April 25 2010). As in Tanzania, attrition in rural areas was a major problem, particularly because newly-hired health workers were often not paid for many months after starting work.

The arrival of vertical funds brought new challenges to the human resources for health system, given that they are often accused of creating parallel service delivery units that pull staff out of the public sector. Oomman et al. (2008) examine this claim in Uganda, and find some support for it, noting that PEPFAR has not funded any pre-service training, and has hired technical staff in the ministry, such as procurement specialists. It has also

supported top-up payments for many of its partners. Informants working for PEPFAR-funded NGOs note that they cannot fund new hires in the health centers they work with – although they can fund hiring-related expenses, such as advertising, or sitting fees for the district Public Services Commission, or new worker induction.²⁷² The contribution to human resources that PEPFAR has made has been in the form of in-service training for existing health workers. While this clearly increased HIV-related skills, its overall contribution to the health workforce is questionable. As one PEPFAR program manager pointed out:

We [PEPFAR implementing NGOs] keep on pulling these guys away to engage other activities - we are training them. They literally jump from one training to another. And they *love* training. Even if he [a health worker] has been at the same training 4, 5 times he will still go. You turn up to these places, and you see the same faces showing up, in every training, every workshop.²⁷³

Similarly, the Global Fund has not funded pre-service training in Uganda, and its support for new hires is limited to the Ministry of Health's Project Implementation Unit. Moreover, it rejected Uganda's attempts, in Round 1, to use Global Fund money for broader human resources support. According to Oomman et al (2010), "This had a chilling effect: Uganda avoided requests for systematic workforce improvements in future grant rounds." Given Uganda's troubled relationship with the Global Fund, a major HRH grant, of the kind Tanzania received in Round 9, seems unlikely. Similarly, with the PEPFAR Partnership Framework on hold and with PEPFAR funding set for minimal increases through 2013, it does not seem likely that PEPFAR will make major HRH investments. The one glimmer of hope is a major forthcoming World Bank health systems strengthening loan of \$130 million over 5 years. The project was set to spend \$5 million to strengthen the HR management system, with a focus on reforming the payroll

system: according to project documents, the project aimed to increase the number of public sector workers who received a paycheck within the first two months of duty from 0% to 30% by 2015.²⁷⁴

Thus the pattern identified in Tanzania, where PEPFAR resources strain limited stocks of human resources for health, is present as well in Uganda. However, the problems related to human resources for health go beyond the poaching done by PEPFAR and Global Fund-supported NGOs, and this is far from the first problem that interlocutors mention in their discussion of the HRH problem. While Uganda increased its human resources management performance on paper over the period in question, this wave of hiring does not appear to have tangibly improved the situation at the service delivery level. And while vertical funds in Uganda appear to have aggravated the HR problem further, they did not create it and are not the greatest contributor to the problem.

Monitoring and Evaluation

I don't know about now, but in my days [the HMIS] was working. It was a high premium for districts to report on time, and it was one of the benchmarks which were used for ranking district performance... Supervision is very important, supervision and then the tools... It's a permanent struggle, that one.
-former Ministry of Health official

Of course the HMIS has its challenges, but it's good enough for day-to-day work. You can use it.
-multilateral health specialist

There is a lot of that has gone into the Ugandan HMIS, it's probably one of the HMIS in the region... people at the level of collection realize that they use the data... There was a deliberate effort to have human resources for surveillance and HMIS, and the data, even with its limitations - timeliness and sometimes completeness - at least consistently for the things that we track, you could use it.
-former ministry surveillance officer

A strong health management information system (HMIS) is an important component of a well-functioning health system. Unfortunately, strengthening this system is a difficult task since it is very high transaction intensity – essentially every single interaction in every health facility must be recorded, and those records must be aggregated at facility, district, and national levels. In Tanzania, we saw an extremely weak routine health information system, and little improvement in the system over the past 15 years. Uganda provides an interesting counterexample to the Tanzanian case, because despite Uganda's weaker health system performance overall, the routine health information system is clearly stronger than it is in Tanzania. It also improved its performance over the period in question.

The first national health information system in Uganda, installed in 1985, focused exclusively on mortality and morbidity statistics for national policymaking. The system was redesigned in the 1990s to focus on other system-related variables such as drug availability, human resource levels, and financial flows. This system was widely seen as an improvement on its predecessor, but was somewhat cumbersome in that multiple, overlapping forms and registers were required at the facility level. A 2000-2001 reform to this system focused on simplifying and streamlining the reporting requirements.

Numerous informants spoke of this version of the system as a flawed but somewhat functioning system, in contrast to Tanzania where the HMIS was consistently described as essentially unusable. Several former high-level ministry officials noted that the HMIS data was considered relatively reliable by policymakers and was used extensively for

planning purposes. The percentage of districts that report fully and on a timely basis is tracked; 68% of districts submit their reports on time (HSSP III 2010). This data is then used to rank districts annually in a league table, which is a format that the public can readily understand and interpret. It is also aggregated into an annual health sector performance report. The results of this annual report are widely cited and used as markers of trends in the health sector, unlike in Tanzania where most references to trends are from DHS surveys. One participant in the annual report compilation process admitted that the final numbers are subject to some political negotiation, but affirmed that they are considered broadly accurate and reasonably reflect the direction of trends in service delivery.

The strength of the Ugandan HMIS should not be overstated: comparison with DHS data shows significant inaccuracies, and the system still faces major challenges of underreporting, incomplete and inaccurate data. But in the comparative framework of this paper, it is certainly stronger than that of Tanzania. How did Uganda manage to strengthen this transaction intensive function? One factor was that it was simply prioritized more in Uganda, most visibly in that the necessary human resources were provided for the HMIS. One former Ministry official noted that “There was a deliberate effort to have a HMIS focal person in every district, and a surveillance focal person” while a serving district official concurred: “The government made a policy to make sure that we recruit a records assistant in every sub-county. So every sub-county in the district, we have got a records assistant... We pay them a salary, they are part of our workforce, and their work is nothing other than collecting the data.” In addition to the human

resources component, officials in the system stressed the importance of an annual data quality audit, followed up with training:

There is a data quality audit every year. So annually you go to look at what is in the registers compared with what is at the district level, compared with what is at the national level. Then you find some discrepancies and then and do training for people. Most people have been trained in HMIS by now.

This highlights the importance of *specificity*. Simple measures of completeness of reporting can be observed easily by the relevant Ministry of Health office. In Uganda's case this is a specialized unit in the Ministry known as the Resource Center. Data quality is more difficult to observe, but as described above, it can be checked by standardized processes such as data quality audits. As a result, the process can be managed even though it is extremely transaction intensive. And since filling out patient cards and facility registers is a relatively simple, non-discretionary task, it can be routinized and entrusted to records assistant cadres with modest levels of education. More broadly, this fits with the classification of the HMIS as a sectoral function that is highly transaction intensive but moderately specific. The moderate level of specificity indicates that its performance can be checked, but that this can only be done through specialized procedures such as data quality audits. It also highlights the dependence of the HMIS on a functioning human resources system. A data quality audit is only possible if the data has been collected in the first place, and there is still a first-order problem of having staff in place with responsibility to collect the data.

The second notable aspect of Tanzania's information environment was the use of field epidemiology. While the HMIS is clearly stronger in Uganda than in Tanzania, there has

been no comparable use of Demographic Surveillance System data to inform *child survival* programming to date. There are in fact two large field epidemiology sites in Uganda, in Rakai district and in Iganga district, and the Rakai program (affiliated with Johns Hopkins University) has produced very high profile research on HIV/AIDS.²⁷⁵ These findings have had transformative impact on HIV/AIDS programming in Uganda and indeed globally. However, the Rakai cohort study's HIV/AIDS focus, while highly beneficial to AIDS programming, has meant that there was relatively little child survival impact from their findings. The Iganga DSS site is newer, and is focused on child survival-related issues, including evaluations of Uganda's home-based fever management programming. However, two factors appear to have reduced its policy impact. First, as discussed in the malaria section, Uganda's home-based approach to management of malaria and other fevers was stymied by the Global Fund scandal. Second, interlocutors emphasized that, given lack of interest from the Ministry, local research institutions did not play a productive policy role similar to the role Ifakara played in Tanzania. While the Makerere University School of Public Health (MUSPH) is a well-respected center of research and technical skill in the public health field, it lacks a receptive audience in the current Ministry. As one informant observed:

The School of Public Health is a very credible institution and it produces very good reports and research, but the Ministry does not care about these reports. They don't even look at it. These people could go and talk to them, but they will probably literally go to sleep until it is all done, and they will just close the books and that's the end of the story. And so we don't have that relationship ... [By contrast] I see that strong linkage also in Kenya. KEMRI [Kenya Medical Research Institute] is a very strong institution and ... there is also a much stronger link between KEMRI as a research institution and the Ministry's policies, just like the Ifakara one in Tanzania. But we don't have this relationship here in Uganda.

The relationship of vertical funds to the routine HMIS is structured slightly differently in Uganda than in Tanzania. In Tanzania each PEPFAR partner was responsible for

collecting HIV-related statistics from the facilities and organizations that they were working with. In Uganda PEPFAR took a different approach, funding a US-based aid contractor called Social and Scientific Systems to handle their data capture. This project, known as “Monitoring and Evaluation of Emergency Plan Progress” (MEEP), was tasked with ensuring that all PEPFAR-funded partners captured and reported all the data required by PEPFAR. As in Tanzania, interlocutors reported that the creation of this parallel monitoring system had a negative impact on the routine HMIS. As one Uganda HMIS technical expert put it: “Vertical programs haven’t only derailed progress on the HMIS, they’ve derailed progress on health systems strengthening more generally.” Others described a confusing picture of overlapping partners all eager to claim ARV patients as their own, even when supported by numerous groups, both domestic and foreign (see similar points in Oomman et al 2008). The lack of clear division of labor, regionally and between the donors and government (detailed above in the supply chain section) exacerbated the challenges of monitoring the HIV/AIDS response.

Like almost all aspects of the health system, the HMIS has been strained by the degradation of sectoral leadership and governance and the proliferation of districts. However, it did not alter the basic fact that in Uganda the routine HMIS was significantly stronger than in Tanzania (although the use of field epidemiology was much less important). If the Ugandan health system is to be revitalized at some point in the future, the HMIS could be an important building block of management and accountability.

Health financing

Only 28% of their facilities didn't have stock out of the tracer drugs last year, and they are buying fighter jets from the Russians with their money! Who do they think they are about to have a war with?
-health systems strengthening specialist²⁷⁶

We moved well, but then we didn't get enough money. We costed the [health] sector plan to be spending \$27/capita, and nobody gave us that money. You'll see when our SWAP started, in the annual performance reports, all the proxy indicators were really moving really well, and then we said give us more money, and they didn't, and in fact the budget for the sector dropped. We were hoping to get more money from the Global Fund, and then we had that disaster with the Global Fund. So the health system in Uganda has really suffered a lot quite a lot in terms of its resourcing, although the policies and strategies were in place.
-former high-level Ministry official²⁷⁷

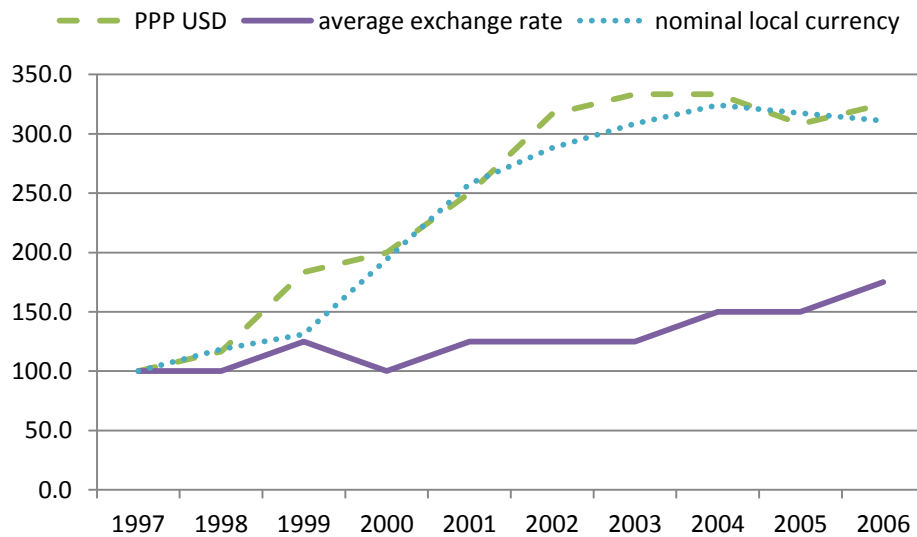
There is a larger budget now, but services are less than when the budget was half of that.
-former NMR leader and current opposition party politician²⁷⁸

Over the last decade, government has increased by 400 percent the budgets for infrastructure, education and health. Yet our roads are filled with potholes; and although our hospitals are teeming with hoards of diseased citizens, they are short of medical staff, basic drugs, equipment and the structures are rotting; and while our public schools are congested with students, they are collapsing under the weight of disrepair, teachers do not show up for most of the time and pupils can neither read nor write.

-Andrew Mwenda, "Understanding Museveni's Grip on Uganda," *Independent*, November 23, 2010.

Several developments have taken place in health sector financing in Uganda over the period in question. The first is simply a major increase in resources for the health sector. These increases have been significant, as Figure 6.7 below demonstrates. As in Tanzania, however, this was driven by an expansion of the overall budget rather than an increasing share devoted to health. 1998 to 2003 in particular were years of sharp increases in health spending. The second is a shift in the modality of donor financial support: in Uganda the SWAP was accompanied by a move towards general budget support, as opposed to the sectoral budget support and decentralized district basket fund that were used in Tanzania. The third development was that user fees in public health facilities, instituted in 1993, were scrapped in 2001.²⁷⁹ The fourth development has been the institution of various forms of pre-payment for health services.

Figure 6.6: Percentage increase in per capita health expenditure in Uganda, 1997-2006 (1997=100)



Source: PPP USD and average exchange rate figures from WHO; nominal local currency from figures from World Bank (2010) and Ministry of Health (2011); author's calculations.

There is some difficulty in quantifying the precise magnitude of Uganda's increase in spending, since data from national accounts, from WHO accounts, and from the World Bank all differ to a degree.²⁸⁰ Moreover, even within the WHO data, whether spending is valued at purchasing power parity or at average exchange rates has dramatic effects on the trends depicted. Valued at PPP international dollars, for example, Uganda health spending increases over 300% from 1996-2006, while valued at average exchange rates, the increase is only 75%. (This can partially be explained by the fact that the Ugandan shilling depreciated dramatically against the dollar over the 1996-2009 period, going from UGX 1,000=\$1 in 1995 to approximately UGX 2,000=\$1 today). Using Ministry of Health data, however (which is likely to be the most reliable source) the magnitude of the spending increase is closer to the increase recorded in WHO PPP calculations: Spending increases in nominal terms by almost by a factor of four from fiscal year 1998 to 2008. In

addition to these increases in public spending, donor spending was also increasing dramatically. On the government side, the period of dramatic increases came from 1997 to 2004. Then from 2004 to 2008, government funding stayed roughly constant (as PEPFAR and the Global Fund resources came on line), before increasing again in 2008 and 2009.

While the increases have been significant, impressions from health workers at the service delivery level were largely at odds with this picture. Many stakeholders felt that, whatever the national accounts said, they saw and worked in a health service that did not have adequate resources. There are three possible reasons for this disjuncture. A first reason can be found in the composition of public spending. One health financing specialist noted:

Ministries of Finance aren't stupid. They quickly figure out the least amount they can do and still get the money. And so in Uganda, they're not making money available to the districts. If you look at over the last 3 years for example, non-wage expenditure for primary health care, over a 3 or 4 year period has increased by only 10% in absolute terms. The overall financing has gone up 50%, most of that has been wages and there's also been a significant increase in capital expenditure, which is not a bad thing. But you still need the non-wage recurrent costs to be able to do business.²⁸¹

The 2008 Public Expenditure Review (World Bank, 2008) makes the same point about the lack of non-salary recurrent budget for districts. This helps explain why, even in the face of major increases, frontline service personnel feel that budgets are being squeezed. The sources of funding that they can actually use for key inputs like drugs has actually not increased in recent years. Increased budgets have largely gone to pay salaries for larger numbers of low-level health workers (Mugisha and Nabyonga-Orem 2010). In the context of population growth and increased use of facilities, this feels to service providers

like a palpable decline in sectoral funding. This provides a contrast to the situation in Tanzania, where the donor-funded district basket fund has cushioned district-level health spending. Uganda's budget support arrangement means that broad categories of funding are protected, but allocation across subcategories is left up to the government. For example, the budget support group of donors closely monitor the percentage of funding going into Poverty Alleviation Fund (PAF) categories, which include the basic services of health, education, water and sanitation, rural roads, and agriculture extension services (Canagarajah and Williamson, 2003). But within these goalposts, the government has freedom to allocate (or misallocate) funding as it wishes.

These final reason why increased national expenditures have had limited impact on the ground is related to what the donors have taken to calling, diplomatically, "value for money" issues. So while much of the recent budget increases have gone into salaries and personnel costs (the "wage recurrent spending" category), the absenteeism rate is an important constraint on the productivity of this funding. Here Chaudhury et al.'s finding that 37% of all health workers were absent on any given day suggests that increased salary spending will not translate into health improvements without some concurrent improvements in accountability mechanisms. Using these absenteeism numbers, as well as data on drug expiry and absenteeism, expenditures identified as questionable by the Auditor General, and data on the amount of "leakage" of Primary Health Care grants between central and local levels, Okwero et al (2010) estimate that at least 13% of the health budget is completely wasted. This appears to be a conservative estimate.

This misallocation is consistent with broader patterns in Ugandan public finance, which in turn help explain health sector funding dynamics. First, the 2008 PER shows that the fastest growing area of spending is public administration. This is perhaps unsurprising, given the rapid expansion of districts. Given the role of district creation in President Museveni's patronage strategy, these are likely not efficient expenditures. Second, ministries and agencies are largely overspending their budgets and making up the difference in supplemental budgets, and the main beneficiaries of this have been State House, the Office of the Prime Minister, the Ministry of Defense, and the Prisons and Police. Finally, budgetary allocations for semi-autonomous agencies have been rising rapidly: the PER notes that "over the four years between 2003/04 to 2006/07, Uganda budgeted almost twice as much for transfers to semi-autonomous agencies as for frontline health services (including salaries)." These agencies, discussed in the governance section above, were created by Museveni in response to donor pressure to cut the traditional civil service, and are widely seen to be centers of patronage spending, dominated by Museveni's co-ethnics from western Uganda (Rubongoya 2007).

The final reason why increased funding was not a panacea is that *demands* on the system were also increasing, thanks to the removal of user fees at public facilities. As figure 6.1 shows, outpatient visits per capita in public and non-profit health facilities more than doubled between 2000 and 2010. Tripling the funding levels likely does not feel like such a windfall to service providers if usage levels have doubled over the same period. The removal of user fees was in some sense the centerpiece reform of the first period of health sector reform (the HSSP I period), and was widely praised both at home and abroad. It

undoubtedly did increase access to health services in Uganda. Burnham et al (2004) show that in 78 facilities across 10 districts, new outpatient visits increased by 57% while under-5 visits were up by 27%. Using facility level data, Nabyonga et al (2003) show that utilization also went up dramatically in a sample of 106 facilities, and that the increases were largest among the poor. Deininger and Mpuga show that the poorest quintile of Ugandans increased their utilization of health services and decreased their spending on health in the period after the introduction of free services (2004). All else equal, this increase in utilization by poor Ugandans should have resulted in improved basic health outcomes. The fact that it did not suggests that quality of health services was declining at least as rapidly as quantity was increasing.

The government budget was not the only source of increases in resources devoted to health. The donor budget has also expanded sharply, to the point where PEPFAR has approached the size of the entire rest of the health budget. The main implication of this for service delivery is that it has made otherwise unaffordable treatments such as ART for HIV/AIDS and ACTs for malaria suddenly possible. Yet the unpredictability and volatility of this donor funding has already had harsh consequences for health finance. The malaria story is a cautionary tale. Uganda switched its first-line treatment from the relatively cheap CQ-SP combination to the much more expensive ACTs in 2006, on donor advice, and with the expectation that donors (in particular the Global fund) would cover the resulting cost increases. But when the Global Fund scandal happened, donors cut malaria funding and ACT procurement was disrupted. While the government is largely to blame for this, it is easy to understand the bitterness that some at the working

level of malaria control in Uganda feel towards the Global Fund. Unpredictability in Global Fund HIV/AIDS funding has had a similarly disruptive effect, forcing the government and PEPFAR to make emergency ARV procurements. (*New Vision*, July 24, 2009).

From the beginning, there have been voices within the Ugandan government that were very wary of verticalized donor health funding. When PEPFAR and the Global Fund were first being discussed, the Ugandan government threatened to impose hard sectoral ceilings on all health funding, meaning that off-budget HIV/AIDS funding would result in one-for-one reductions in on-budget health allocations (Wendo 2002). This has not been applied – if it had been, the non-HIV portion of the health budget would be approaching zero. But it does seem likely that the existence of vertical funds has led to a degree of crowding out. One interlocutor noted:

On the macroeconomic level, there was a disengagement. The feeling was, why put our money into the health sector when there is so much donor money? There was a feeling at [the Ministry of] Finance, among other ministries, that those guys already have money.

In addition to the dispute over sectoral funding ceilings, the Ugandan government has also been upset with vertical funds for not putting their funding on-budget. There is some merit for this complaint: The negative effects of massive pools of off-budget funding on sectoral planning were a consistent theme in interviews with Ugandan health sector policymakers. But this issue was also used opportunistically. In the Ogoola Commission's hearings about Global Fund corruption, then-Minister Muhwezi seemed to use this disagreement as a rationale for various highly irregular financial management

practices related to the corruption that occurred (*New Vision*, March 22 2006).

Furthermore, the fact that a large portion of vertical fund resources are used for foreign currency drug purchases would seem to mitigate the effects of “Dutch disease”, yet concern about currency appreciation was an often-cited reason for opposition to vertical funds.

Crowding out of health spending by vertical funds was also decried by a number of health policy-oriented Ugandans who questioned the cost-effectiveness of PEPFAR funding. A recent PEPFAR costing study showed that to keep one patient on ART in Uganda costs PEPFAR an average of \$846 per patient per year (Berruti et al 2009).

Given that total health spending in Uganda, public and private, is estimated to be \$25 per person, this has naturally generated discussion about resource allocation. One NGO analyst stated the following:

When I looked at the money that is supposed to be coming to the health sector, I saw that half of this money is coming from 3 places: PEPFAR, PMI, and then the Global Fund. Half of this money comes from these areas, and you know these monies do not really address the critical things that we need. Okay, they are addressing TB, malaria, and HIV, but they are just providing drugs. But [they are] providing drugs without supporting human resources, supporting the health system, supporting the infrastructure, and supporting the management systems through which everything will work. So when you talk about this money that is coming in, it is really money for drugs, and for consultancies.²⁸²

Wariness about unreliable donors and pressure for some form of financial sustainability provided the impetus for the final development in the health finance arena, the movement towards a pre-paid national health insurance plan. At the time of writing, the government was attempting to introduce a pre-payment system of health insurance, known as the National Health Insurance Scheme (NHIS). The original plan provided for a system that began with civil servants, would then extend coverage to all formal sector workers, and

would progressively extend coverage to the informal sector and the self-employed. The main problem with this is there are only an estimated 400,000 Ugandans in the formal sector (Okwero et al 2010). As one health financing specialist noted:

They drafted a bill for the establishment of social health insurance, using the old trick: We'll start with the formal public sector workers, and then over time we'll expand to everyone else. And we know, this is the approach that Kenya's been taking for the past 40 years! ... it was said, this is not going to work, for these reasons. And you're certainly not reaching the poor in the short run, and it's highly unlikely that you're going to reach the poor in the long run with this vehicle. So they actually stepped back and started thinking about what they're doing.²⁸³

The National Health Insurance bill was tabled in Parliament in 2009, but the government pulled back, after receiving sharp criticisms of this nature from technical staff in the donor and multilateral community. As a result, the bill has not yet been passed, technical teams in the Ministry are re-evaluating their approach, and the expansion of health insurance is currently stalled.

Conclusions

I was working with these people at the district level, and you could see, those of us who were transparent, we were not so rich. And then I was controlling the World Bank HIV/AIDS project, 1 billion shillings; it was a big project at the district level. And people were saying to me, when will you become rich? Why do you send all this money to the communities? Why don't you just divert it? People are not even ashamed to mention that to you! ... Even the scandals of the Global Fund money, I was not surprised, because I have seen these projects.

-former district medical officer²⁸⁴

The problems of Africa, and Uganda in particular, are caused by leaders who overstay in power, which breeds impunity, promotes corruption and patronage.

-Yoweri Museveni, *What is Africa's Problem?*

The Ugandan case sheds some light on Tanzania, and vice versa. The two countries are superficially quite similar. Especially according to summary statistics presented by international organizations such as the World Bank and the WHO, the two countries

appear to be well matched. Yet these statistics hide very different dynamics in the political economy of public service delivery.

Chapter Two proposes a theoretical framework whereby the *institutionalist* or the *public health-technocratic* views are contrasted as competing sources of health system change.

The Ugandan case provides evidence for the institutionalist school, given that governance, politics, and regime dynamics were the fundamental determinants of the effectiveness of health sector aid in Uganda. This influence manifested itself in at least three ways. The first is simply the level of health sector corruption, most clearly manifest in malaria control. Malaria is Uganda's single biggest cause of ill-health, and yet the country had major shortages of key tools for prevention and treatment of malaria for five years, as a result of the Global Fund corruption scandal.

The second set of issues is related to state capacity and sectoral governance. In many cases, judging bureaucratic capacity is quite challenging. However, the weakness of the Ministry of Health in Uganda is not hard to detect, with key posts vacant for long periods of time, clear lack of autonomy, and blatant politicization of technical decisions and high-level appointments. While in the late 1990s and early 2000s, Uganda began a strong health sector reform process (similar in many ways to the contemporaneous process in Tanzania), before long regime politics took over, corruption increased, and technical quality and morale decreased. Similar dynamics drove the decentralization of health services. Over the past decade, patronage at the district level became a key plank of Museveni's regime maintenance strategy, sowing administrative chaos and degrading

governance at the district level. Unfortunately for the health sector, this dynamic reached its apotheosis just as health decentralization was being implemented. Finally, the views of leaders matter. Yoweri Museveni is keenly interested in industrial policy and economic growth, but appears to view social services like health and education as matters best left to the donors. This is in contrast to Tanzania, whose leaders have a lingering *ujamaa*-based affection for primary health care. These themes, as well as the broader health systems comparison between the two countries, will be discussed at greater length in the concluding chapter.

²²⁵ Author interview, August 18 2009, Kampala.

²²⁶ Author interview, April 19, 2010, Kampala.

²²⁷ Malaria vector control is also listed by the World Bank but it is not a useful measure of capacity for Uganda since decisions about what percentage of houses to spray for malaria are typically based on the local epidemiology of malaria. Low coverage may therefore be appropriate epidemiologically and not a measure of poor performance.

²²⁸ Uganda and Tanzania have almost identical HIV prevalence rates (5.7% and 6.2%), similar sized HIV-positive populations: 1.0-1.1 million in both countries (THMIS 2007; UDHS 2006), ²²⁸ and similar incidence rates: Tanzania sees 120,000 new infections per year (National Prevention Review 2009), while Uganda has 135,000 (Allen, 2010). Accordingly, the package of aid that both have received from the two funds is quite similar, especially for PEPFAR.

²²⁹ This is compared to over \$1 billion approved and \$491 million disbursed in Tanzania.

²³⁰ As in Tanzania, the majority of PEPFAR grants are funneled through non-governmental organizations, although in Uganda, there are several home-grown NGOs that are large scale PEPFAR implementers, such as The AIDS Support Organization (TASO) and the Joint Clinical Research Center (JCRC).

²³¹ Data on PMTCT and VCT results accessed from <http://www.pepfar.gov/countries/uganda/index.htm> on February 21, 2011.

²³² PEPFAR coordinator Michael Strong told the *New Vision*, “They were asked to be cautious and responsible and to refocus their emphasis on care in order to postpone the time when infected people will need ARVs.”

²³³ Author interview, March 29, 2010, Kampala.

²³⁴ Timberg, Craig (2007). “Uganda’s Early Gains Against HIV Eroding.” *Washington Post*, March 29, 2007.

²³⁵ Tanzania’s two district evaluation showed that child mortality declined by 13% more in the treatment district, while Uganda’s larger evaluation, covering 10 districts, was not done using a demographic surveillance system, and thus did not produce evidence of mortality impact. Both evaluations, however found that IMCI improved health worker performance (Pariyo et al, 2005).

²³⁶ Another key difference at the lowest levels of service delivery for children is that Uganda in theory had introduced a community health worker initiative through “village health teams.” There is debate in international health policy over the value of low level community health workers, who visit homes and provide the most basic care. Tanzania has moved away from this model, but Uganda has in theory adopted

it through a policy whereby the Ministry of Health encourages the formation of Village Health Teams. However, this policy, announced with fanfare in various strategy documents, is currently operational in only a few districts, and Ministry officials blame lack of funding.

²³⁷ Author interview, WHO specialist, February 2010, Dar es Salaam.

²³⁸ Nsungwa-Sabiiti et al (2004) note that the program was hindered by lack of effective monitoring and evaluation. This provides a clear contrast to Tanzania where IMCI was piloted in the DSS districts, meaning that evaluation was an important part of the project.

²³⁹ Author interview, district health official, April 28, 2010, Central Region.

²⁴⁰ Author interview, August 14, 2009, Kampala.

²⁴¹ Author interview, April 1, 2010, Kampala.

²⁴² Author interview, March 29, 2010, Kampala.

²⁴³ Uganda's equivalent to Tanzania's Joint Annual Health Sector Review is the Joint Review Mission. It is preceded, as in Tanzania, by Joint Technical Reviews. Uganda also has an annual National Health Assembly.

²⁴⁴ Author interview, August 2009, Kampala.

²⁴⁵ The two health PETS had quite different results: a 1996 survey concluded that the evidence "suggests that leakage is limited...[and] takes place mainly at the facility level, rather than in transfer of money to the facility," while a 2000 survey concluded that "leakage of specific drugs and supplies estimated at 70% in government, private non-profit facilities." Neither study led to action on the problem of drug leakage. By contrast, an education PETS in Uganda resulted in significant action against the problem of leakage at the facility level (Reinnikka and Svennson 2004).

²⁴⁶ Author interview, August 14, 2009, Kampala.

²⁴⁷ See

http://www.internationalhealthpartnership.net/CMS_files/documents/uganda_progress_report_EN.pdf.

²⁴⁸ Author interview, March 2010, Kampala.

²⁴⁹ Author interview, March 25, 2010, Kampala.

²⁵⁰ Author interview, April 19 2010, Kampala.

²⁵¹ See McPake et al. (1999) for a now somewhat-dated estimate that 78% of needed drugs were unavailable in surveyed facilities.

²⁵² They note that the Joint Review Mechanism, in particular, was a key forum.

²⁵³ Uganda had a "push" system, whereby standardized kits of essential medicines are directly supplied to districts and facilities on a regular schedule, from 1987-2002 (Nazerali et al 2006).

²⁵⁴ See Ssewanyana et al (2010) for detail on this.

²⁵⁵ The ACT Watch survey of September/October 2008 also found that 83% of public facilities had ACTs in stock.

²⁵⁶ Cited in Bate et al, 2009.

²⁵⁷ The Permanent Secretary was cleared in 2010 of the charges outlined in that note. The point that theft of drugs was common knowledge remains.

²⁵⁸ Author interview, April 28, 2010, Central region.

²⁵⁹ See also Oomman et al (2008) on the relationship between the essential medicine and ARV supply chains in Uganda.

²⁶⁰ Author interview, March 30, 2010, Kampala.

²⁶¹ IRIN/PLusNews, "Will Saying No to ARV donations End Distribution Problems?" January 21, 2009.

²⁶² Author interview, March 30, 2010, Kampala.

²⁶³ Author interview, March 4, 2010, Dar es Salaam.

²⁶⁴ Author interview, April 6 2010, Kampala.

²⁶⁵ The Capacity Project (2008) gives different HRH figures, but they are based on the 2002 Census: 2,919 doctors, 3,785 allied clinical, 20,165 nurses and midwives. Their presentation of the data is not directly comparable to the USPA (2007) totals because of differing categorizations of cadres and of public sector versus private sector, but they show a similar order of magnitude.

²⁶⁶ Uganda, like Tanzania, had a donor-mandated hiring freeze in the 1990s.

²⁶⁷ The USPA (2007) gives the figure of 2,900 new workers recruited.

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- ²⁶⁸ Author interview, March 29, 2010, Kampala.
- ²⁶⁹ Author interview, April 29, 2010, Central region.
- ²⁷⁰ McQuide et al (2008) shows that 86% of surveyed health workers believed that salaries were unfair. Ssengooba et al. examine the effect of health sector reforms, such as decentralization, civil service reform, on human resources, finding that decentralization is seen to have increased nepotism in recruitment, but also has increased the speed of recruitment and quality of supervision.
- ²⁷¹ Author interview, March 4, 2010, Dar es Salaam.
- ²⁷² Author interview, August 16, 2009, Kampala.
- ²⁷³ Author interview, March 29, 2010, Kampala.
- ²⁷⁴ Project document available at:
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,menuPK:115635~pagePK:64020917~piPK:64021009~theSitePK:40941,00.html>.
- ²⁷⁵ Influential findings from the Rakai Cohort study including work on the impact of male circumcision and also the impact of viral loads on the probability of HIV transmission.
- ²⁷⁶ Author interview, April 8, 2010, Kampala.
- ²⁷⁷ Author interview, April 6, 2010, Kampala.
- ²⁷⁸ Author interview, September 21, 2010, Kampala.
- ²⁷⁹ USPA (2007), chapter 2. Hutchinson (2001) argues that user fees were already de facto in use, in the form of side charges.
- ²⁸⁰ More recent WHO figures (from the 2010 World Health Statistics report, for example) are inconsistent with the older WHO data series, although they show a similar trajectory for the period for which revised figures are available (2000-2007).
- ²⁸¹ Author interview, March 4, 2010, Dar es Salaam.
- ²⁸² Author interview, March 25, 2010, Kampala.
- ²⁸³ Author interview, March 4, 2010, Dar es Salaam.
- ²⁸⁴ Author interview, April 28 2010, Central region.

Chapter 7: Conclusion

In this chapter, I will discuss the Uganda and Tanzanian cases in comparative perspective, draw conclusions, and discuss some policy implications.

The role of politics

The central conclusion from these two case studies is that politics and governance are central to the success or failure of health sector aid programs. For many in the development community, this is by now a familiar insight. But it is rarely a focus for health sector specialists. Health sector aid has largely failed in Uganda not because of problems of technical design or resources; in fact the strategies and programs were extremely similar to those in Tanzania, and resource increases were of similar magnitudes. Yet the politics went badly wrong, and that made all the difference. For these two cases at least, *institutionalist* concepts explain the divergence in outcomes better than *public health-technocratic* ones.

There are at least four pathways by which politics affected health services in Uganda. The most important mechanism is related to the elimination of term limits, and President Museveni's attempts to stay in power. The shift from what might be thought of as "equilibrium" levels of corruption to pervasive, endemic patronage in support of regime survival was a progressive process. Some observers point to 1996 as the "high water mark" of Museveni's regime (Barkan et al 2007; Rubongoya 2007). Others point to the 2001 presidential election, when Kizza Besigye's candidacy signaled a split within the NRM elite (and within Museveni's ethnic base in the Ankole region of Western

Ugandan), as a critical juncture in the process of political decay. But in the health sector, the acceleration of neopatrimonial dynamics is quite clearly linked to the period preceding the 2005 referendum to eliminate term limits and the 2006 presidential election. The health sector has not recovered from the patrimonial dynamics that became entrenched in the Ministry of Health during this period.

These patterns were present to a much lesser degree in the health sector in Tanzania. Tanzania has a basically neopatrimonial political economy as well, but it appears to be locked into a rough equilibrium. There are few political or institutional pressures for dramatic improvements in governance. However, the institution of term limits in the presidency, and the wide acceptance of alternation in power within CCM, does prevent the kind of downward spiral that Museveni has initiated in Uganda. For example, as the term limits imbroglio was heating up in Uganda in 2005, Tanzania was also preparing for a transition, but of a very different kind. President Benjamin Mkapa was preparing to step down after two terms, and a competition was underway within CCM for the right to succeed Mkapa as the party's presidential nominee. In the jostling for primacy, competition was intense and there was likely a great deal of horse-trading and rent distribution. But once Jakaya Kikwete emerged as the nominee, the party was confident of victory, and there was no need to shift the patronage machine into a qualitatively higher gear. The situation was not much different than it was before the 1995 election, when Hoffman and Robinson (2009) quoted President Benjamin Mkapa saying that the ruling party "didn't need to cheat, because it was quite certain that CCM was going to win." Hoffman and Robinson also detail ways in which state resources and influence were used in the 2005 campaign. But not *all* state resources were put to this use. The

Global Fund and PEPFAR money could be left to the technical leaders in the health sector, where it has been used to good effect. This set in motion a virtuous circle, as success in malaria control generated positive political attention for the malaria program, and more donor support. In contrast, the misuse of Global Fund resources in Uganda did the exact opposite, setting off a vicious cycle of disruption, demoralization, and politicization of key health issues.

Yet the differences between the two countries should not be overstated. It would be wrong to interpret this dissertation as arguing that Tanzania, in line with its donor darling reputation, is so well-governed that it can use aid effectively. Many aspects of Tanzanian political economy are deeply dysfunctional. Politics are still mostly neopatrimonial, and the ruling party, CCM, completely dominates political life. Furthermore, there is a widespread popular sense that corruption entered politics with the passing of Julius Nyerere from the political scene, and has only intensified over the past generation. The potential for aid to be used effectively likely depends on the sector, on the nature of the task that aid finances, and other contextual variables. Indeed, the education sector might be an example of a sector where aid has been much less effective: recent surveys show that Tanzania is getting extremely poor educational results despite a large aid-financed expansion of primary education (Uwezo 2010). Tanzania's success in the health sector is less a story of generic good governance, and much closer to a story of what Grindle (2002) calls "good enough governance."¹

The second key pathway from politics to health outcomes relates to the decentralization process. Not only did both countries decentralize at roughly the same time and in the same ways, but in the health sector both based their design on the exact same international model, the essential health interventions package model promoted by the World Bank. In Tanzania decentralization was not a particularly smooth process, but health sector stakeholders uniformly view it as positive on balance. In Uganda, given that decentralization was the heart of Museveni's patronage strategy for regime maintenance, health sector decentralization never really had a chance. This suggests a lesson for policymakers and donors promoting decentralization of basic services in developing countries: Before promoting this step, invest time and resources into understanding the role of local governance structures in the political and patronage structure of the regime in question.

The third pathway relates to malaria control. For various historical and path-dependent reasons detailed in chapter 3, malaria control institutions both inside and outside government have been unusually effective in Tanzania. In Uganda, the malaria control effort was stymied by the general problems with corruption in the health sector – the revelations surrounding Global Fund-related NMCP corruption in 2005, and the arrest for corruption of top NMCP managers in 2010, are the two most obvious examples. But the malaria control effort was also bogged down by perverse effects of Museveni's obsession with industrial policy – an obsession which may be a positive thing in other areas, such as the processing of agricultural goods, or the development of Uganda's industrial base.

This calls to mind the fourth variable that links politics to health outcomes: the interests and ideological predispositions of political leaders.² There is no doubt that Yoweri

Museveni values economic growth. For many years his speeches have talked about the need for structural transformation, integrated regional markets, and investment in science and technology, and Uganda's economic policies gained him his early reputation as a star economic reformer.³ The dramatic fall in poverty in Uganda, versus its stagnation in Tanzania, demonstrates the success of this market-friendly strategy.⁴ Museveni's view of human development goals, like the reduction of child mortality, is that they are a consequence of industrialization and economic growth:

You cannot maintain a pre-industrial society and, then, somehow, meet these MDGs. That is what Uganda has been working for in the last 20 years. This means that Africa must industrialize, develop modern services sector and commercialize agriculture. ... The MDGs are consequences of these. They are not precursors or autonomous phenomena to these. The second position I would like to point out under MDGs is that Uganda is on course to meet all of them except maternal and child mortality. I see no reason why these goals should not be achievable. Other than HIV/AIDS which is behavior-related, I am sure all the others are achievable if in Uganda we do enough political-led sensitization and investment.⁵

This belief affects what his government spends money on, what it prioritizes, and what he personally devotes political attention to. It also affects which Ministries he protects from patrimonial pressures and corruption. As Andrew Mwenda (2011) has noted:

Museveni has also cultivated a fairly bureaucratically competent ministry of finance, central bank and tax authority. He has personally provided them a significant degree of protection from particularistic pressures. He has exercised a reasonable degree of restraint from personal interference in their functioning. For example, in the 2001 and 2006 elections, he faced a real threat to losing power. He did many dirty things but never printed money to finance his campaigns and never went to Uganda Revenue Authority or Bank of Uganda to grab sacks of cash to save his regime.

The contrast with the health sector is clear. When his regime was in danger between 2001 and 2005, rather than protecting the Ministry of Health from politics, he sent his political allies directly there to use health resources as their personal and political fiefdoms.

Meanwhile in Tanzania, the Ministry of Health was somewhat insulated from politicization. It seems logical to link this to the political culture of CCM, where

Nyerere's ideas about the importance of basic health and education were still present. By contrast, Tanzania's Central Bank was actually a key locus of grand corruption. For example, two of the largest scandals of the 2005-2010 period were the EPAA scandal, which involved outright embezzlement of Central Bank funds, and the "twin towers" scandal, where millions in public funds were siphoned off in the building of the Bank of Tanzania's headquarters. The third big scandal in Tanzania over this period was the Dowans scandal, related to electricity generation. Again this provides a contrast with Uganda: the importance of increased power generation capacity is Museveni's pet topic. This suggests a broader lesson about state capacity in weak, neopatrimonial states. While state capacity overall may be limited, leaders have wide discretion in choosing which functions and ministries to protect from patrimonial pressures.

Yet while the drivers of outcomes are institutional, they are all at the elite level. In neither country is the health sector a major driver of mass politics. For one thing, majorities in both countries express satisfaction with the government's role in health care services. This should not be too surprising. De Waal (2006) noted that not even very high HIV/AIDS prevalence African countries have a real politics of health. Likewise, Banerjee and Duflo (2006) point out that in their experience, "most communities are not actually particularly upset about the state of education and health services, even when, objectively, the system looks dismal." This means that, unlike for example in Latin America, where McGuire shows that interest groups and civil society played important roles in health, in East Africa the role of such groups is limited.⁶

This is not to say that health plays no role in political campaigns. It often plays a secondary role, usually in the form of promises about provision of infrastructure. In

Uganda, for example, the elimination of user fees was announced just prior to the 2001 election (Rubyonga 2007), the creation of health sub-districts (with accompanying infrastructure) was a campaign promise in 2001 (Tripp, 2010), while in 2006 Museveni promised every sub-district an HC-IV level hospital (Mugerwa, 2010). Similarly, Kikwete campaigned on a promise of a dispensary in every village (the “MMAM” plan) in 2005. But there are few interest groups that pressure the government about health issues. This suggests that donors should think carefully about how to integrate governance into health sector programming. Generating extensive popular political pressure or vigorous interest group mobilization maybe less likely than the creation of an elite policy network of the kind that has generated momentum for malaria control in Tanzania.

Health systems strengthening: The Pritchett-Woolcock-Fukuyama framework

A secondary purpose of this dissertation was to take the conceptual models that Pritchett, Woolcock, and Fukuyama generated for state-building as a whole, and to see if they could be applied to health systems strengthening. In general, predictions generated from the adapted framework captured actual developments in the Tanzanian and Ugandan health sectors quite well. For example, applied to service delivery, the model accurately captures that population-oriented preventive services – in the form of distribution of bed nets or provision of immunization – is achievable, but that improving curative care (for example through IMCI) is not. The model appears to miss the degree to which human resources and supply chain issues have been resistant to improvement. For human resources, focusing only on transaction intensity and specificity misses two key factors. The first is the difficulty of reforms that require cooperation across many ministries,

departments, and agencies. The second is that the politics of the civil service are particularly knotty in countries where government employees are a very influential interest group due to their relatively elite status and concentration in capital cities. Even basic reforms affecting their pay and terms of service are highly sensitive.⁷ The transaction intensity and specificity categories probably need some alteration in areas that involve large political constituencies and very sensitive political economy issues.

Using the PWF categories, the supply chain should have been the other area of improvement. It did improve in Tanzania, although fitfully and not commensurate with the resources spent on it. In Uganda, the supply chain has continued to be a disaster. This may point less to a failure of the framework than to a misapplication of it: In *Statebuilding*, Fukuyama notes that the framework presumes that the outside actor has at least some cooperation from local policymakers. If they do not, then the transaction-intensity and specificity categories are not likely to be determinative. Deeply entrenched patterns of corruption in drug distribution held this function back in Uganda, not the transaction-intensity or specificity of the task.

With respect to the health information system, the framework accurately captures the weakness of the HMIS in Tanzania but misses the surprising (semi)-functionality of the Ugandan HMIS.⁸ It does however provide a framework for understanding why Tanzania's use of DSS systems and regular surveys were a good second-best option. Running five national malaria surveys over the course of three years, as was done in Tanzania, is a way to both reduce transaction intensity and increase the specificity of health information collection.⁹ The resulting data served important program management goals, for example by convincing sectoral leaders that the national voucher scheme was

not performing up to expectations and that a shift to a combined vouchers and free distribution hybrid model was desirable.

On health financing, the move towards a system of social health insurance (a relatively high specificity but also high transaction intensity activity) did not succeed in either country. It seems plausible that poor performance on this front was a combination of both the nature of the task itself, as well as the incentives health sector policymakers faced. With hundreds of millions of dollars of new resources being spent in the sector, the incentive to prioritize pre-payment schemes was weak. The framework also makes relatively accurate predictions about governance: budgeting, planning, resource allocation and regulation/stewardship of the private sector clearly can be improved with donor assistance, while improving supervision and monitoring is a much more difficult task. In both countries, reforms designed to improve accountability did not work. For example, the creation of district level health oversight committees was a failure in both countries. There does not appear to be an untapped pool of *wananchi* who are eager to do the painstaking work of sectoral oversight. Also in both countries, performance-based financing schemes have so far been unsuccessful.

Overall, given the relative accuracy of its predictions, the PWF framework does provide a useful guide for thinking through which components of the health sector are responsive to outside resources and attention. This suggests that it may be a useful heuristic for donors to consider as they move forward with new programs that focus on health system strengthening.

Policy implications

What does any of this tell us about policy going forward? The implications are important because, as the Tanzanian case shows, better aid to the health sector can help bring about dramatic improvements in basic health indicators.

A first implication is that it makes sense for donors to move in a less vertical and more health systems-focused direction. But the specific sense in which this should be implemented is not at all straightforward. For some proponents, this means that all aid should go on budget and be disbursed through country budget and financial systems. On-budget modalities do receive some support from the Tanzania and Uganda cases.

Virtually every health sector interlocutor in both Tanzania and Uganda believed that the reforms associated with the SWAP improved health sector governance. Planning was more coherent, resource allocation more meaningful, and strategy more effective.¹⁰ On the other hand, Uganda is also a case where working through the government is a high risk endeavor. The temptation to verticalize aid delivery outside of government structures is understandable. Relying on the Ugandan public sector drug supply chain, for example, to supply ARVs for PEPFAR programs would not have been a good strategy. The correct aid modality depends on country characteristics, *and the correct mechanism can change over time*. Uganda may well have been a strong candidate for budget support in the mid-1990s, when the various budget support mechanisms were conceived and initiated. But this was no longer the case a decade later. Donors have been far too slow to recognize these changes.

The details of the particular on-budget approach also matter. In Tanzania, the district-level basket fund seems to have enabled donors to protect resources at the service delivery level. In 2004, Hutton praised the Ugandan approach, arguing that the shift to

unearmarked budget support meant that accountability relationships between Parliament and the Ministry of Finance were developing. This mechanism, combined with the designation of a “ring-fenced” portion of the budget (known as the Poverty Alleviation Fund) devoted to basic service delivery, was supposed to ensure that aid to Uganda could be on budget, but also under close donor scrutiny. Subsequent experience has shown that neither of these accountability tools were strong enough to ensure adequate funding of services at the district level. A district basket fund might have been a better mechanism.

If a less vertical, more systems-focused approach to health sector aid refers not necessarily to budget support, but rather to aid that targets the broader functions of the health system, Tanzania is a test case for the value of this approach. In the mid-1990s, well before the current focus on global health, various far-sighted donors (DFID, GTZ, Canada’s IDRC, SDC) made investments in the health system, most effectively through the various district-level Demographic Sentinel Surveillance systems. These investments provided a model for health sector decentralization, built momentum for policy changes aimed at child mortality, and provided an arena where current senior policymakers could be trained in a population health, systems-oriented way of thinking.¹¹ In doing so, they set the stage for the rapid mortality reduction in the following decade. A PEPFAR or a Global Fund that had come in and build on these already-existing currents in the health sector, rather than build separate, verticalized, and parallel systems, would likely have had an even greater effect, at least in Tanzania.¹²

Yet while the need to move in a systems-focused direction is clear, the overall effect of vertical funds is a complex question. In fact, discussing “vertical funds” is not particularly meaningful, since PEPFAR and the Global Fund are different in structure,

focus, and effect. Certainly, the highly pessimistic idea that vertical funds would hollow out health systems to the point where they would see backwards movement on indicators like child mortality (Garrett 2007) was dramatically overblown. Tanzania has been both a vertical fund recipient and a rapid child mortality reducer, while other PEPFAR countries such as Zambia, Kenya, Rwanda, Ethiopia, and Mozambique have also seen significant child mortality reductions as well. Moreover, there are clear links between the level of mortality reduction and malaria control, for which the vast majority of funds come from vertical programs – the Global Fund and also the President’s Malaria Initiative. More generally, the clear implication of the two case studies is that while vertical modes of service delivery disrupt governance and other sectoral functions at the margin, their fundamental effects are determined by pre-existing country characteristics. Tanzania has put PEPFAR and Global Fund resources to good use, while Uganda’s deteriorating health sector governance structures meant that it was not able to benefit in the same way.

Yet while the case studies provide evidence for the need to invest in health systems, they also suggest that the particular system leverage point may be *sui generis* and highly sensitive to country and even sectoral characteristics. Moreover, they will often be “second best” solutions. Broad based health system reform is desirable, but often unattainable. Here the ideas of De Savigny and Adam (2009) are relevant: They argue that health systems are complex and move in non-linear ways, and the trick is to find *strategic entry points* that can catalyze broader improvements. As De Savigny notes, Tanzania’s experience with TEHIP and the DSS districts is a good example. Creating a functional HMIS was likely an unattainable goal in Tanzania. But creating the several DSS areas was feasible, and could create a positive feedback loop.¹³ Tanzania’s current

project of creating a nationally-representative DSS system is testament to potential scalability of partial system reforms.

Entry points for system strengthening are likely to be different across countries. For example, while the DSS experience was critical in Tanzania, it is also clear that investment in this kind of local research capacity will only be effective at the policy level if Ministry officials are interested. There is plenty of health research capacity in Uganda, and several field epidemiology sites with talented Ugandan and international researchers. But the Ministry has essentially ignored this resource.¹⁴ So while demographic surveillance was an entry point in Tanzania, there is no reason to believe it would have played the same role in Uganda. By contrast, the problem of drug stock outs would seem to be a potential strategic entry point. A country where only 23% of public facilities have all three basic child survival drugs in stock is extremely unlikely to make major child survival gains (USPA 2007). The private non-for-profit health sector is another logical place to put resources. These facilities have proven their quality, are being starved by the government budget, and helping them would avoid working through the deeply corrupt public health sector. And since accountability relationships at the level of national politics are clearly broken, a citizen monitoring initiative on the model of the program evaluated by Bjorkman and Svensson (2009) would seem like a potential leverage point in Uganda.

The third set of policy implications relates to malaria control. While this study cannot prove any direct relationship or magnitude between malaria control and mortality

reduction, the facts are certainly highly suggestive. They are also consistent with a number of recent studies that credit malaria control with large reductions in child mortality in settings across sub-Saharan Africa (Fink et al, 2010; Kleinschmidt et al 2009). This appears to be due to a combination of both the enormous burden of malaria on children, but also because of malaria control's strong but poorly understood effect on other diseases, such as various bacterial infections (Snow and Marsh 2010). Because of this, Snow and Marsh argue, many countries in Africa could essentially achieve Millennium Development Goal Four (reducing under-5 mortality by two-thirds) just by achieving effective malaria control.

From the point of view of this study, malaria control has counterintuitive implications. The first order conclusion from comparing Tanzania and Uganda is about the importance of governance for the success of health sector aid. But ironically, much of the evidence from outside Tanzania and Uganda suggests that significant components of malaria control can be implemented *even in conditions of relatively weak state capacity*. This suggests that countries can make serious progress on child survival without really "fixing" the health system in any comprehensive manner. Tanzania for example, has made dramatic progress, despite a health system that still has deep problems.¹⁵

Here it may be worth bringing in the example of the third large East African nation, Kenya. Few observers would credit Kenya over the past decade with good governance. The Kibaki government has been notorious for its corruption (Wrong, 2008), and the post-election violence in 2008 was a symptom of a deeply troubled polity. Accordingly, the Kenyan health sector has faced challenges, including being split up into two ministries in the post-election political settlement, the Ministry of Preventive Health and

the Ministry of Medical Services. Yet the 2008-09 Kenya DHS shows a decline of over 30% in under 5 mortality over the 2003-2008 period. This is likely at least in part due to successful malaria control. Rates of ITN usage have increased sharply, with 47% of under-fives sleeping under a net by 2008-2009, and Kenya saw a decline in fever for under-fives of similar magnitude to the one in Tanzania, from 42% to 24%. Kenya also has a tradition of strong malaria field epidemiology, with DSS sites in Coast Province (Kilifi) and also in Kisumu. There appears to be a strong technical community outside government, based in these sites and at the Kenya Medical Research Institute (KEMRI), that may also have helped sustain momentum for malaria control. Overall, Kenyan progress in reducing mortality is less notable than that of Tanzania because it had far better basic health statistics at the beginning of the period. In 1993 for example, Kenyan under-5 mortality was already 96 per 1,000, a rate only reached in Tanzania in 2007 and one still not attained by Uganda. Nonetheless, there are circumstantial reasons to believe that malaria control was a strong contributor to the 2003-2009 mortality reduction.

Zambia is a similar case. Despite governance problems, including its own Global Fund scandal, successful malaria control has contributed to strong under-5 mortality reduction. The international community has contributed significant resources to malaria control, and has also embedded technical assistance in Zambia's NMCP through the MACEPA program. Fink et al. (2009) show links between malaria specific mortality and that country's strong under-5 mortality decline.

Yet while initial levels of progress at malaria control may only require a minimal threshold of state capacity, the Ugandan case shows that a politicized and patronage-dominated Ministry of Health can fail at the task. This reinforces the final and most

central policy implication, which is that donors should integrate political and governance considerations in their health sector policymaking. Donors may have believed that they could take a relatively relaxed approach to Museveni's political machinations, but still get results with their health sector programs. This was a mistake. What could donors have done? It does seem unlikely that a stronger donor stand would have forced Museveni to step aside in 2006. But all along, donor reactions have been fairly tepid to Museveni's actions. Various outrages have been met with token reductions in budget support, but at no point was it enough to change Museveni's cost/benefit calculations.¹⁶

In general, this experience focuses attention on struggles over term limits as crucial, path-shaping moments in the political economy of many African countries. Historical institutionalist approaches to political economy stress path dependency. Central to the idea of path dependency is the concept of certain *critical junctures* which can set a country on paths towards sharply divergent equilibria. The term limits struggle in Uganda may well have been one such critical juncture. Donors and neighboring countries did try to influence Museveni on this point. Nelson Mandela, George W. Bush, and then-Tanzanian president Benjamin Mkapa all pushed Museveni to consider retirement in the period before the 2005 elimination of term limits (Barkan et al 2004; Monitor 2007). But the message from Bush probably did not ring too loudly since in that year, Uganda was receiving \$148 million from PEPFAR. Protests from others donors rang equally hollow, given the rest of the project aid and budget support that finances roughly 40% of Ugandan public expenditures. Political scientist Nicolas Van de Walle has argued for the importance of term limits. He recently wrote the following about the 2011 uprising in Tunisia:

[Tunisia's] Ben Ali was probably in the category of leaders who were not always awful. When he came to power in 1987, he was initially viewed as a moderate technocrat and reformer, who would steer the country towards slow but progressive democratization. The economic reforms he pushed through brought steady economic growth rates to a country blessed by many natural advantages and an industrious people. Nonetheless, ineluctably, the quality of his rule decayed over time. The longer he was in power, the more personalized and arbitrary it became. His relatives were allowed to engage in massive corruption and abuses of power. He encouraged an Orwellian cult of personality which was widely ridiculed by most Tunisians. As his popularity waned, he increased the share of budgetary resources going to an ever expanding repressive apparatus, which is today said to include over 100,000 police and intelligence personnel, whose sole purpose was to keep him in power.

Minus the cult of personality, this also describes Uganda under Yoweri Museveni. Van de Walle goes on to advocate that the US and other donors cut off foreign aid to any ruler who has served for more than 3 terms. It is hard to imagine this happening, considering the political and security rationales that often determine aid allocation for many donors, especially for the United States. But it is hard to argue that it would not be a good thing.

Donors are likely to be deeply entangled in African health systems for the foreseeable future. Their ability to determine long range outcomes, however, is ultimately limited. Locally determined political and institutional dynamics are far more important than donor actions. But particularly in highly aid-dependent PEPFAR and Global Fund countries, donors will continue to have major influence. Sometime they get in the way and complicate matters. Sometimes they help. The lessons from this study are that health systems are complex entities; deeply difficult to build and reform. In low capacity, poor, aid dependent countries, even basic functions cannot be taken for granted. Yet the Tanzania case shows that patient, systemic health system support can over time empower local reformers and give them new tools and resources to help reduce the burden of disease in their countries. This study has aimed to help build the collective stock of knowledge about this shared endeavor, in the hope that this will help both donors and

local actors as they continue the painstaking, often frustrating, but deeply necessary work of building effective health systems in Africa.

¹ It is also likely a reflection of the huge role that malaria plays in the burden of under-5 mortality, and in particular features of malaria control and of path dependency in Tanzania.

² Individuals matter at lower levels as well. Certain people in Tanzania appear to have been extremely influential. Hassan Mshinda, the former head of Ifakara and the current head of COSTECH, is one example. But it is not just about individuals, but rather their interactions with the system. Uganda had individuals of equally high capacity – indeed discussions of the reform era of the early 2000s refer to skillful technical staff in the Ministry, some of whom now work at WHO or in other international health roles – but many were driven from public service by the negative atmosphere in the Ministry of Health.

³ See for example the speeches collected in Museveni, Yoweri (2000). *What is Africa's Problem?* Minneapolis: University Minnesota Press.

⁴ Essentially, Museveni's bargain with economic elites is that he will leave the private sector alone, if they either stay out of politics or support the NRM. Tripp (2010) for example notes that "the most striking feature about the hundred richest people in Uganda is that they made their wealth through a wide variety of businesses in all sectors, and not through their connections to the state." A survey of the one hundred richest businessmen in Tanzania would likely show much closer connections between politics and wealth.

⁵ Speech to the United Nations General Assembly, September 23, 2008.

⁶ Uganda is actually a partial exception to that rule: there was a politically-led response to HIV, the movement to care of victims of HIV had a major grass-roots component, and there are a handful of advocacy NGOs that focus on health issues, often with an emphasis on HIV/AIDS. But this has not led to a meaningful political coalition in favor of rational health policy.

⁷ These reforms can be done – donors basically forced civil service reform on unwilling countries in the 1990s. But it will not be done willingly. And they certainly will not be done if donors are ignoring the human resources issue and making it worse at the margins. Moreover, Finance ministries have emerged in both countries as powerful and relatively technocratic ministries, and are highly reluctant to allow expansion of health sector numbers or wages, since they believe that this approach to the civil service led to Africa's bankruptcy in the 1980s and 1990s.

⁸ It does raise the question of why Uganda can collect somewhat reasonable statistics (in 2010, 98% of facilities reporting on time) while failing with the less transaction intense task of delivering drugs once every two months.

⁹ Survey teams are small, their work takes place over several months, and they are implemented by a small group of trained professionals. Usually the project combines outside researchers with survey professionals from the National Bureau of Statistics or organizations such as the National Institute of Medical Research (in Tanzania).

¹⁰ Of the four sectoral functions that Hutton and Tanner (2004) suggest that SWAPs can improve (ownership, governance, resource flow, and monitoring and evaluation), all four improved in both countries in ways that can be linked to the SWAP, even if they later retrogressed in Uganda.

¹¹ Uganda also had some large projects at the district level. The DISH project from USAID, and the World Bank District Health Services Project, were remembered positively by Ugandan health sector participants but did not appear to have the kind of transformative effect that the TEHIP, the Dar Urban Health Project, and other district-level DSS projects did in Tanzania.

¹² What was missing in both countries was some measure of quality of care, and what is provided in facilities. Here the donors could have done a better job. Both countries received a Service Provision Assessment (SPA), an enormously detailed, once-every-five-years facility survey. Final SPA reports are over 700 pages, and contain a wealth of useful detail, but it was rare to find a health sector policymaker in either country who was aware of their results. It would have been far more useful would it have been to fund several smaller, less detailed, national facility surveys. (I am grateful to Dr. Benjamin Loevinsohn for suggesting this point to me.)

¹³ A counterexample is the attempt in both countries to shift the supply chain from the simple "push" system where all districts received the same essential medicine kit, to a theoretically more efficient "pull"

system where districts ordered from the MSD based on their usage of drugs. After many years of reform and millions of dollars of resources, the pull system seems to have reached the level of functionality that the simpler pull system had, while in Uganda, NMS has recently dropped the pull approach altogether.

¹⁴ It is also notable that much of the research in the Tanzanian DSS areas was not based on randomized controlled trials, but often using matching or difference-in-difference methods. What was likely lost in precision was gained in country ownership of the results.

¹⁵ The real indicator of genuine health system strengthening might be similarly dramatic reductions in maternal mortality and neonatal mortality. Unlike much of malaria control, this relies in large part on improvements to clinical care.

¹⁶ It is also not the case that donors could not have known the trajectory of the regime. The World Bank commissioned an analysis of Ugandan political economy in 2005 which remains an extremely useful guide to the relevant dynamics (Barkan et al 2005). Nothing was stopping PEPFAR from commissioning similar work, and factoring it into their decisions.

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Vita

Kevin Croke was born in Wantagh, NY, on July 16, 1979. He grew up in Huntington, NY, and attended Walt Whitman High School. He studied political science and history at the College of William and Mary in Williamsburg, Virginia, graduating in 2001.

From 2003 to 2005 he attended the Johns Hopkins University School of Advanced International Studies (SAIS), where he received an MA in International Economics and European Studies.

In September 2007 he began his PhD at Johns Hopkins University-SAIS, under the supervision of Professor Francis Fukuyama. He defended his dissertation, which was awarded with distinction, on April 25, 2011.

As an adjunct professor at SAIS, he has taught courses in comparative politics and international development.

In addition to his academic work, he has worked for a range of international development organizations, including PEPFAR, Management Sciences for Health, Results for Development, the Inter-American Development Bank, the World Bank, and the Tanzanian NGO *Twaweza*.