

The Road for the Healthcare System in Uganda

This paper aims to ascertain the intersection point between economic, political and socio-cultural factors in predicting the institutional readiness for advancing the healthcare system in Uganda. To address the research question of whether Uganda as a state has or will have the institutional capacity to significantly reduce morbidity indicator gaps, a historical review will analyze the development of institutions as well as the current state environment that lend to institutional strength and weaknesses pertaining to the healthcare delivery system. The question of why some states develop and others do not continues to evade researchers (Olson, 1982; Sen, 1999). Robust bodies of literature focus on political development, democratization, institutional capacity, imperialism, military strength, natural resource wealth, religion, cultural propensities, and other factors. None independently address the foremost question, which begs to understand if it is the right question. It is argued that institutional development is the mechanism through which development occurs and, using this logic, it should serve to reason that understanding first why institutions are strong or weak or lend to desired development outcomes can serve to predict the development of a state. Therefore, this inquiry will look to the Ugandan healthcare system not to determine why it may or may not be strong, but to better understand the institutional structures as a predictor of system development. This will be accomplished through comparative analysis with countries ranked higher as healthcare systems and also other African countries that have seen improvements over time in their respective healthcare systems. This exploratory comparative analysis aims to summarize some clues as to what institutional capacity Uganda has or needs to adopt in order to provide more robust healthcare services for its growing population. Key questions will include: What is the impact of institutions on healthcare development? Is Uganda

institutionally ready for healthcare reform? What would help Uganda to be in the position to make sweeping reforms that would yield high impact on morbidity indicators? What states in Africa have made successful reforms? Are they applicable to Uganda as best practices? How are quality healthcare systems structured that contrast with Uganda?

There have been attempts to make investments in Ugandan healthcare though indicators of health remain poor (Chandler et al., 2013). Uganda is not presently on target with Millennium Development Goals (MDGs) for health (ibid). It has been suggested that Uganda, despite its investments in healthcare, has faced barriers to quality care, primarily owing to externally-defined or socio-cultural priorities. This paper seeks to add to the literature by delving into institutional misalignments that may contribute to why Ugandan healthcare may not be keeping pace with desired objectives. For the purposes of this research, healthcare system will be defined as “all activities whose primary purpose is to promote, restore, or maintain health” (Kamwesiga, 2011).

“Low-income countries do not have to wait to become wealthy to become healthier, however. Experience has shown that, even in the absence of income growth, using existing knowledge and technologies can reduce deaths and illnesses even in the poorest countries. These health improvements, in turn, will help countries achieve their development goals”
(Laxminaryayan & Ashford, 2008).

Inputs to Development

A persistent question across relevant disciplines in examination of international development is ‘why do some countries develop and others do not’ (Harrison & Huntington, 2001; Minkov, 2012; Moore, 2012)? This is an important question because of the downstream impacts of underdevelopment; more glaringly so in the wake of globalization. For example, mineral wealth in developing Africa may be a more significant export and income opportunity to contribute to the

physical and economic wellness of the populations therein but for the limits imposed by underdevelopment such as corruption, conflict, and deep inequality. Having more people living in countries with infrastructure that can contribute to a more peaceful and progressive whole is the current institutional push. Answering the question as to why some develop and others do not has been explored from economic, political and cultural perspectives, the latter of which has been largely ignored in the inquiry, only to shine a bright light on the failures of economic and political theories in providing a comprehensive explanation.

The level of political development, or progress towards a stable political order, is contingent upon the relationship between active political participants in societies and the political institutions (Huntington, 2006). Level of institutionalization, or the “process by which organizations and procedures acquire value and stability,” can be measured based on “adaptability, complexity, autonomy, and coherence of organizations and procedures” (ibid). Operationalizing the criteria for these elements can serve as a foundation for comparative political development. For example, in the United States, Congress serves as an institution with low transaction costs such that stable legislation becomes possible (Hall & Taylor, 1996), whereas in Uganda, it has been exceedingly difficult to build stable institutions due to many of the desired elements of institutionalization such as lack of coherence. Huntington’s gap hypothesis proposes that social mobilization resulting from advances such as in education, urbanization and modernization, in turn influence people’s values and expectations while economic development impacts economic output and capabilities. The gap between social expectation and economic reality is what leads to political instability (i.e., lack of development) because politics becomes the mechanism by which the gap can be closed. If political institutions are not strong enough to accommodate the mobilization being

driven by the gap, then the result is political instability. That political instability has numerous impacts such as to institutional capacity to develop adequate healthcare systems.

Neoliberal institutionalism purports that humans and states are rational actors, that there is a natural goodness of actors, and that cooperation is ultimately achievable (Keohane, 1998). Institutions, in this view, are an effective mechanism through which cooperation is attained and agreements are reinforced. This international relations theory would accordingly suggest that institutions have a positive effect on international development and sustainable growth not only for political stability, crime, and security but also for disease, wellness, and health of nations (Burchill et al., 2009).

Institutional Assessment

The influence of institutions has important direct relationships with healthcare systems because institutions set agendas and derive how efforts are spent, especially when concerning those who are disadvantaged (Bjornskov, Drener & Fischer, 2010). Institutions can be defined as “rules of the game” (North, 1990). To think about development as a ‘game’ is crude, but the simplification provides context for how there are rules which are followed to focus attention on the desired course of action. As such, the quality of institutions is a major concern and whether they are steering populations toward a better future, given that they are rooted in specific ideologies, values, and preferences (Duffield, 2007). Joseph Stiglitz, an economist awarded the Nobel prize said it well: “What you measure affects what you do. If you don’t measure the right thing, you don’t do the right thing” (Forgeard et al., 2011). Institutions set the policy agenda and set it to hopefully achieve progress. Defining what “progress” means is therefore key to obtaining the objective of greater welfare of nations. Of the values that remain at the forefront, is the focus on economic growth as

a primary institutions push (Easterlin, 1974). However, scholars are questioning if those values are misaligned with the true aims of global progress (Booroah, 2006). In public policy concerns, most everyone would claim to be interested in human well-being (Bates, 2004).

Institutions can be both formal and informal, the former being state-led and the latter functions of society (Lau, 2005). Institutions are important when observing the course of development because “countries with better institutions, more secure property rights, and less distortionary policies will invest more in physical and human capital and will use the factors more efficiently to achieve a greater level of income” (Acemoglu, Johnson and Robinson, 2001). It has been observed that strong institutions that do invest in human capital have direct impacts on rates of infant and maternal mortality in addition to factors such as literacy, population growth rates, legal stability, GDP growth and other variables that can impact the health of nations (Lau, 2005). For Uganda, assessing the current state of institutional strength and capacity to support change in healthcare is fundamental to understanding barriers to progress.

Institutional capacity-building is an effort espoused by development institutions (USAID, 2000). Strengthening of institutions is an activity undertaken with the aim of bolstering administrative management, service provision effectiveness, building upon institutional culture, and enhancing sustainability. The measurement of institutional capacity is important because it helps to establish a baseline and set targets for organizational improvement. In Africa, the discourse on strengthening health systems has only recently become a driver of agenda-setting. Mbacke (2013) argues that this discourse was solidified in 2004 as a result of the Mexico Statement on Health Research that put forth a call to action in global health and cooperation from all global governments to commit resources to creating sustainable health systems to the benefit of the international community as a whole. It was argued, that only through this push could Millennium

Development Goals be viably reached since any weaknesses in national health systems would create negative downstream impacts for all global health initiatives.

A USAID instructional publication (2000) focused on measurement of institutional capacity identified that a barrier to successful change is lack of institutional capacity to achieve and reinforce desired results. Strong institutions are most effectively able to realize programmatic objectives that are sustainable. USAID utilizes certain capacity-building techniques that include technical assistance, advisory council, long-term consultation, and provision of tools to support sustainable development. This survey of applicable techniques proposes that sustainability is most appropriately had through expansion of institutional capacity and efforts and resources are best spent in this regard.

Uganda: A Background

Uganda, under Britain's rule until 1962, is currently an independent state on the African continent (CIA Factbook, 2014). Subsequent to independence, Uganda succumbed to two dictatorial regimes under Idi Amin (1971-1979) and Milton Obote (1980-1985), with the current leader, Yoweri Museveni in place since 1986, which extends relative stability (ibid). Uganda, population 36 million, is land-locked, with Sudan to the North, Kenya to the East, Rwanda and Tanzania to the South, and the Democratic Republic of the Congo to the West. A variety of ethnic groups are represented in Uganda: Baganda 16.9%, Banyankole 9.5%, Basoga 8.4%, Bakiga 6.9%, Iteso 6.4%, Langi 6.1%, Acholi 4.7%, Bagisu 4.6%, Lugbara 4.2%, Bunyoro 2.7%, other 29.6%. A variety of religions are also represented: Roman Catholic 41.9%, Protestant 42% (Anglican 35.9%, Pentecostal 4.6%, Seventh-Day Adventist 1.5%), Muslim 12.1%, other 3.1%, none 0.9%. Only 4.5% of Ugandans are over 55 years of age, with nearly half of the Ugandan population being

under the age of 14 leading to a median age of 15.5 years. Population growth is high at 3.24% making Uganda among the fastest growing populations in the world. Healthcare indicators show maternal mortality of 310 deaths of 100,000 live births; infant mortality of 69 deaths per 1,000 live births; life expectancy at birth is 55 years old; total fertility rate of 6 children on average to every woman; a contraceptive prevalence rate of 30%; .12 physicians per 1,000 people; .5 hospital beds per 1,000 people; sanitation facilities are accessible by 34% of the people; HIV/AIDS prevalence is 7.2% (ibid).

Healthcare in Uganda

Uganda maintains a decentralized healthcare system since 1999 wherein local governments are responsible for the provision of healthcare for their respective local populations (Ndaruhutse, 2013). Prior to decentralization, local healthcare facilities were funded by Uganda's Ministry of Health (ibid). This decentralized model was implemented with the goals of improving efficiencies and effectiveness, promoting community and local-level ownership and responsibility, as well as more readily allocating goods and services at the local levels. A main benefit observed of this model is that it has opened up free market opportunities for private and public healthcare services. However, the same challenges that existed in the former centralized model were simply transferred to the local levels and exacerbated. Thus, decentralization can be argued to have moved Ugandan healthcare into a weaker institutional position since consistency in approach, commonality of goals, and governance cannot be centrally observed or tracked (Wooding, Nagaddya, Nakaggwa, 2012). In addition to decentralization, Uganda has also taken additional measures towards other health sector reforms. These include eliminating user fees, establishing government partnerships

with private healthcare organizations and providers, and promoting public hospital autonomy and bottom-up planning practices (Kamwesiga, 2011).

The decentralized structure of the Ugandan healthcare system makes interstate cooperation both a viable approach and simultaneously challenging one due to alignment issues that may arise (Ndaruhutse, 2013). A growing middle class in Uganda is investing in private healthcare as they aim to consume more quality care than that which is provided publicly. Those who cannot afford this option remain under the provision of the government (EIU, 2011). Interestingly, a study to observe the impact of Uganda's abolishment of health system user fees found that the cost of care did not impact the quality of care but did impact the perceptions of the quality of care; whereas patients felt that free care was lower quality (Nabyonga-Orem et al., 2008).

The Ugandan healthcare system is structured somewhat hierarchically (Kamwesiga, 2011). One level is the "village health teams." This is the level of first contact in rural areas and is supported by volunteers that have no medical training or carry medicine, but they mobilize on bicycle and can refer patients to health clinics when there is a need. Another level of the system is called a "health centre II." Each Ugandan parish is expected to have a health centre II facility that has the capacity to service several thousand people for common diseases like malaria or other health challenges (e.g., antenatal care) on an outpatient basis staffed by a nurse. "Health centre III" level facilities are allocated to sub-counties and staff approximately 18 personnel with an on-site laboratory. The "health center IV" is a district-level hospital serving an entire county that can admit on an in-patient basis as well as have a doctor on staff and capacity for emergency operations. Across Uganda there are 10 "regional referral hospitals" that also extend specialty services including mental health and dentistry. Lastly, there are "national referral and teaching

hospitals” where the most complex of cases can be seen and attended to by the most well-trained of medical professionals (ibid).

Communicable diseases such as malaria, HIV/AIDS and tuberculosis have been ravaging healthcare challenges in Uganda. Today, these have become compounded by rapid rate increases in chronic diseases such as diabetes and heart disease (EIU, 2011). Heart disease and obesity, in fact, are on a project to outpace communicable diseases by 2030 (ibid). This double-threat to the population’s health lends to an overwhelming disease burden for an already insufficient healthcare infrastructure. “Healthcare delivery infrastructure is insufficient; skilled healthcare workers and crucial medicines are in short supply; and poor procurement and distribution systems are leading to unequal access to treatment” (EIU, 2011, pp. 4). The current state of Uganda’s healthcare system with the double-threat of disease, the rapidly growing population with very low life expectancy, and an ineffective healthcare infrastructure draws a bleak current state picture. According to the World Bank (2014), Uganda has demonstrated a slight decline in spending on healthcare as a percentage of GDP between 2009 (2.1%) and 2012 (1.9%). Uganda remains one of the worst healthcare systems in the world (Kelly, 2009). Fifty-one percent of people do not access public healthcare facilities, 38% of healthcare positions are filled by qualified professionals, and of those, 70% of doctors and 40% of nurses provide care only in urban areas, thus limiting service to only 12% of Ugandans (ibid).

A study was conducted to assess the institutional capacity within Uganda in regard to parasite-based malaria in Ugandan lower level health facilities (Kyabayinze et al., 2012). It was determined that the health facilities were primarily unequipped to address malaria, a leading cause of death. This type of targeted assessment is helpful for determining the precise interventions needed in order to realize the desired outcome of reducing malaria deaths that have impact on

MDGs. Analyses found that only 24% of lower level health facilities had the requisite equipment on-site to treat parasite-based malaria (ibid). This finding helps to quantify what is needed to those the gap in a targeted manner and what type of institutional strengthening can occur to realize a shift in the delivery of care. It may well serve to focus early on institution-building as it pertains to the healthcare delivery system in Uganda.

Case: Saving Mothers, Giving Life

A great deal of Uganda's healthcare infrastructure relies upon non-governmental organizations (NGOs) and donor organizations (Kruk et al., 2014). On the one hand, these groups have been hugely impactful in targeted areas. Kruk et al. (2014) conducted an assessment of the efforts of a program called Saving Mothers, Giving Life (SMGL) to ascertain the benefits of these types of interventions. Findings showed that within service delivery, SMGL was able to increase the capacity of hospitals to be equipped to provide better maternal care. For example, solar lamps were implemented to reduce power outage barriers. Conversely, the lofty and aggressive goals specific to maternal care shifted resources and took attention away from other health conditions. This resulted in huge numbers of new obstetric patients, crowded healthcare facilities, and unpreparedness of healthcare workers.

From a human resources perspective, the program was also able to fund additional doctors and nurses to increase access points for care. However, the program demanded an intensive off-site training schedule so staff shortages occurred at healthcare facilities as a result. In addition, the existing staff and newly hired staff experienced tension between them such that retention of staff at the close of the program fell into question. Financially, the program was able to lobby for increased wages for participating doctors and accordingly a bill was passed toward this aim. This

reduced the previous wage gap for doctors who were unwilling to travel to rural areas. This approach, while closing financial and access gaps, was specific only to the SMGL program, which questions whether the solution is scalable to other interventions and, if replicated, wouldn't place a significant burden on the Ugandan government as well as challenge the decentralized healthcare system structure.

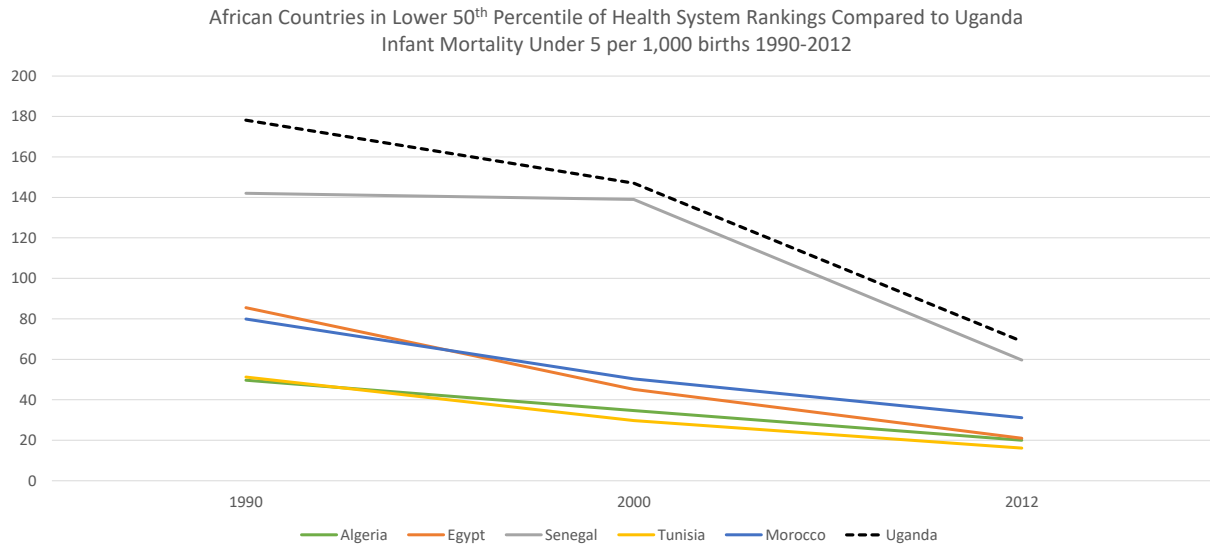
Another benefit found was in the raised awareness and focus on maternal health and the prioritization on the healthcare agenda that was reinforced by state institutions. Because this was an outside agency program, however, lack of ownership became a threat to sustainability. In addition, different districts implemented the program in different ways which undermines a consistency of approach to lend to a sustainable model. The SMGL program further realized positive changes in purchasing and supply management training so benefits were realized in the supply chain and the prevention of 'stock-outs.' This supply chain, however, relied upon donor funding again raising sustainability questions. Lastly, the SMGL program implemented upgrades to communications, medical records management and healthcare information technology to facilitate patient care tracking over time. Unfortunately, since few personnel were trained and able to use these systems, wait times increased within the health facilities.

This review of a large-scale national intervention aimed at rapid improvement demonstrates that positive changes may occur but are often, and in this case always, accompanied by negative impacts. A 'big bang' approach to implementation to receive quick results may not only elude achieving desired sustainable outcomes, but undermine future worthy attempts if the value of the implementation does not outweigh the risks such as financial investment, human time, and institutional involvement.

Healthcare system comparisons

Uganda is 149 of 191 ranked healthcare systems (Tandon et al., 2000). While many African countries fall to the bottom of this list (i.e., > 95), some African countries do rank in the top 50th percentile to include: Morocco (29th), Tunisia (52nd), Senegal (59th), Egypt (63rd) and Algeria (81st) (ibid). The Brookings Institute's "Weak States Index" (Patrick & Rice, 2008) unsurprisingly finds that, taking into account economic, political, security and social welfare indicators, the same trends apply: most African countries rank the weakest, Uganda included. This demonstrates that health and effective health institutions are at the core of not just the health of populations, but of nations as well.

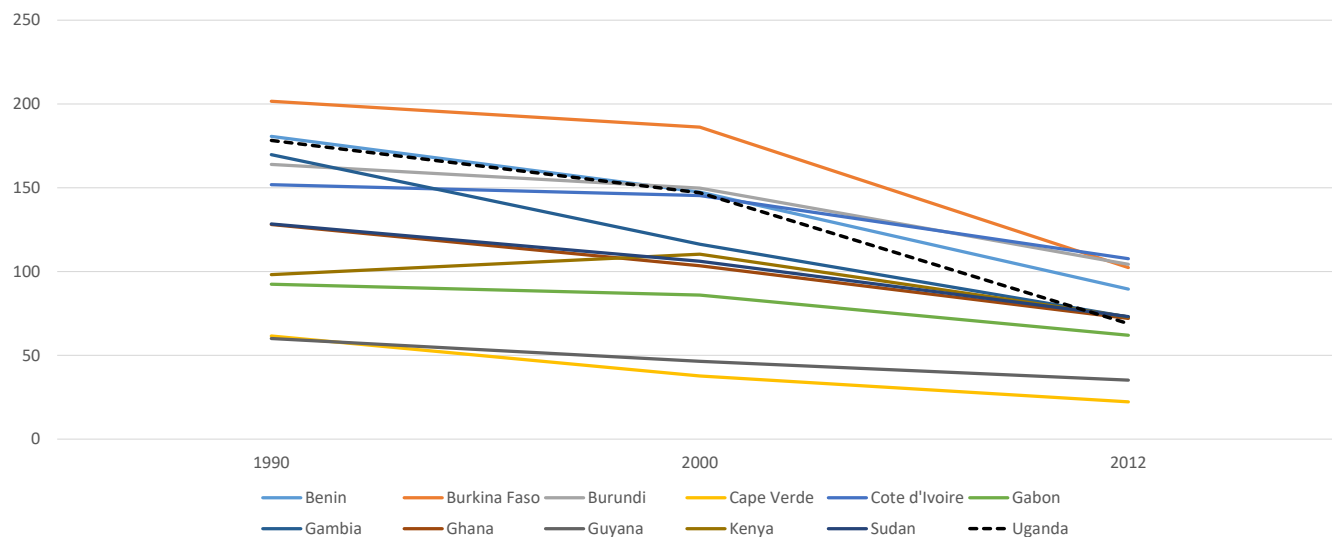
Among the United Nation's Millennium Development Goals, is the charge to reduce child mortality rates (United Nations, 2000). This is not an arbitrary goal in that the World Health Organization has identified child mortality as a leading indicator of the overall development of countries and the health of their populations (World Health Organization, 2012). Child mortality has decreased by 35% globally from 1990 to 2010, with an average annual decrease for all countries of 2.2%, whereas the least progress has been noted in developing countries (UNCF, 2011). Policy interventions targeted at women's health, increasing access to healthcare services, and enforcing the accountability of health systems have been cited as the underlying reasons for the reduction in child mortality rates (UNCF, 2011).



Graph 1. Health Systems Rankings (lower 50th percentile) Child Mortality Comparison

In Graph 1 above, Ugandan child mortality trends are compared to those observed for the 5 African countries (Algeria, Egypt, Senegal, Tunisia, and Morocco) who ranked in the top 50th percentile of the healthcare systems ranking (Tandon et al., 2000). In Graph 2, below, Ugandan child mortality trends are compared to African countries whose healthcare systems rank in the top 50th percentile but still are ranked higher than Uganda overall. It is interesting to observe that in both graphs, Uganda started out the highest or nearly highest for child mortality but in Graph 2 comes to fall in the middle of the group in 2012.

African Countries in Upper 50th Percentile of Health System Rankings in Advance of Uganda
Infant Mortality Under 5 per 1,000 births 1990-2012



Graph 2. Health Systems Rankings (upper 50th percentile) Child Mortality Comparison

Country	% Change 1990-2012
Egypt	-75%
Tunisia	-69%
Cape Verde	-64%
Uganda	-61%
Morocco	-61%
Algeria	-60%
Senegal	-58%
Gambia	-57%
Benin	-50%
Burkina Faso	-49%
Ghana	-44%
Sudan	-43%
Burundi	-36%
Gabon	-33%
Cote d'Ivoire	-29%
Kenya	-26%
Guyana	-23%

Table 1. % Change Child Mortality 1990-2012

The findings in the graphs above prompted an analysis of the change over time for child mortality across all African countries with healthcare systems that ranked higher than Uganda. In Table 1 the percent change in child mortality is calculated for the years 1990-2012. With the exception of Cape Verde, Uganda has outpaced all of the other lower 50th percentile healthcare systems in reducing child mortality to keep pace with those healthcare systems ranking in the highest 50th percentile. This appears to be good progress over time, and while the absolute rate of child mortality (i.e., 69 per 1,000 live births) remains high, additional focus in this area could realize real gains in the coming years and facilitate meeting MDG aims.

African country health system advances

Ghana has been successful in reducing maternal mortality from 500 deaths per 100,000 live births to 350 deaths per 100,000 live births within a four-year period from 2004-2008 (EIU, 2011). Ghana achieved this major shift by making the delivery of babies a free service for all mothers. This result demonstrates that many want care and will access it when cost is not a barrier. As such, models that are moving towards privatization and increased costs to populations will likely negatively impact a healthcare system's progress and outcomes, particularly in developing countries. On the other hand, the study also revealed that many did not choose to seek out medical care for child birth despite it being free (ibid). It appears that, culturally, a barrier can be those unwilling to access healthcare or lacking knowledge to understand the benefits.

The Institute for Healthcare Improvement (IHI) in South Africa published a white paper (2012) to articulate their recommendations for health systems improvement based upon the lessons learned of their interventions. Recommendations include: 1) Implement training programs to embed knowledge within societal groupings; 2) Provide tools and resources to make change easier

(i.e., make it easier to exhibit desired behaviors); 3) Conduct small tests of change rather than take on full-scale interventions. For example, in South Africa, the IHI has limited its scope to improving hospital safety and improving care for HIV patients. Targeted interventions are significantly more achievable than undertaking an entire healthcare system overhaul (ibid); 4) Maintain data that tracks progress of interventions over time; 5) Start with evidence-based interventions as ‘low-hanging fruit’ and help to mitigate risk to intervention success; 6) Create support networks for patients with similar health challenges such as in the instance of chronic disease clubs; 7) Keep innovation periods short and reinforce with metrics for desired behavior changes.

A study of South Africa’s public healthcare reforms reviewed their lessons learned pertaining to the HIV/AIDS pandemic (Knijn & Slabbert, 2012). A hybrid public/private model did not work well in post-apartheid Africa. Leveraging NGO’s and donor funding to address HIV/AIDS has been critical to applying antiretroviral treatment. But, this donor aid is not sustainable given the heavy burden of HIV/AIDS. The South African government is working to use the public healthcare system to address population care needs in cooperation with NGOs, though the obstacles observed in this hybrid model include: 1) governance integration; 2) priorities and timelines are difficult to reconcile; 3) the public system is at a disadvantage without NGOs especially in rural areas (ibid). Transitioning from NGO support to public healthcare presents an immense challenge.

Best Practices

Healthcare reform has become a global challenge that even developed nations are encountering. While all states do not share the same political, economic and social profiles and

thus cannot address their health system structures the same way, best practice review can offer a helpful launch for where to begin addressing an overwhelming undertaking. One commonly agreed upon best practice, for example is that a primary healthcare approach is highly recommended as a positive first step in health system strengthening, particularly as it relates to meeting MDGs (Mback, 2013). In addition, Kruk et al. (2014) argue that having high, broad healthcare goals rather than incremental goals will over time threaten the sustainability of health system changes, thus small and targeted changes are preferred. Also, widely promoted is that country-level interventions combined with community-level buy-in and ownership facilitate better coordination and opportunities to achieve desired outcomes (WHO, 2010).

The Economist Intelligence Unit (2011) conducted a broad study on the state of Africa's healthcare systems. In general, this environmental scan yielded several recommendations for shifting systems most substantively and sustainably through: 1) shifting to preventive care in lieu of curative care; 2) empowering communities to 'own' their healthcare and healthcare resources; 3) increasing the role of technology in healthcare (i.e., for mobility); 4) focusing on healthcare supply chain efficiencies to get the right supplies and equipment to the right locations to facilitate the right care; 5) shifting from a model that relies on foreign aid to one that sustainably leverages local resources; and, 6) making healthcare universal so that all Africans may benefit from and access care.

Another survey of "best buys" in the advancement of global health was conducted by the Disease Control Priorities Project (DCPP)--an effort of the U.S. National Institutes of Health, the World Health Organization, the World Bank, and the Bill & Melinda Gates Foundation. This initiative worked to determine which opportunities existed for developing countries as a 'low-hanging fruit,' or low cost, high impact approaches that could result in massive early benefits in

global health (Laxminarayan & Ashford, 2008). DCPD used disability-adjusted life years (DALYs) as the common metric to assess the cost-effectiveness of various health interventions. The DALYs measure whether premature death or disability lower individual's health status. It is the aversion of death or disability that can be attributed to an intervention that impacts this metric. The survey found the following top ten recommendations for best health buys for developing countries: 1) vaccinating children; 2) preventive pediatric care; 3) tobacco taxation (i.e., to dissuade consumption); 4) HIV/AIDS prevention; 5) maternal and child nutrition; 6) insecticide-treated bed nets (i.e., malaria prevention); 7) enforcement of traffic laws (i.e., injury prevention); 8) short-course chemotherapy to treat tuberculosis; 9) education for mothers and birth attendants; and, 10) promotion of aspirin to assist with chronic disease management. All of these suggestions with the exception of #8 are preventive in nature rather than curative.

To address alignment and resource issues, a community based education (CBE) approach has been broadly promoted, whereby communities lie at the center of a taxonomy with bi-directional reinforcement to students, academic institutions and healthcare facilities. The concept is that students, academic institutions and healthcare facilities are all external factors that are the external components necessary for a successful healthcare system but their influence is mediated by the communities being served (Ndaruhutse, 2013). Thus, any effort to strengthen a healthcare system that ignores the role of community would likely undermine desired institutional impacts.

These best practices all place the community at the core reinforced by targeted directives for realizing solid primary care infrastructure that focuses on preventive care in key areas focused on small changes over time rather than sweeping reforms. While Uganda's policy reform did attempt to localize healthcare in a bottom-up fashion, a gap may exist in centrally communicated

objectives with strong institutional leadership, metrics, reinforcement and resources to realize the desired changes—one country all moving in the same direction.

Singapore Healthcare System

Singapore, also once a British colony and previously considered a developing country, has come to offer one of the world's best healthcare systems ranking 6 of 191 (Tandon et al., 2000). Not only has Singapore succeeded in delivering quality healthcare to its citizens at the level of healthcare leaders like France, Italy, and Malta (ibid), it has been able to do so inexpensively and sustainably (Haseltine, 2013).

Primary factors enabling Singapore to, in under 40 years of development, achieve this status include: 1) political unity; 2) prioritizing economic growth before investing in healthcare; 3) a common goal of collective well-being; and, 4) prioritizing the rights, education and health of women. In addition, to encounter the question of universal coverage that all countries face, the Prime Minister of the time, Lee Kuan Yew, reasoned that for individuals to psychologically own their own health, they should pay something for services, which would also prevent a 'welfare state' mentality (ibid).

Early in the health system development, infrastructure was established to support collective gains across sectors that touch health such as housing. After independence, Singapore faced a housing crisis and widespread slum conditions, which fostered poor sanitation and hygiene. Beginning in 1960, the government build 20,000 housing flats climbing to 55,000 flats by 1965. Today, nearly 85% of the population of Singapore are inhabitants of these housing flats that are equipped with exercise areas, clean grounds, and nearby healthy public food centers (ibid). This infrastructure building was a form of institutional strengthening by ancillary sectors to health. In

addition, the government invested in increasing access to care by sponsoring education for healthcare professionals abroad so they could return to Singapore and practice medicine. Other infrastructure investments included upgrading or building healthcare facilities, and shifting primary care to outpatient clinic networks and, while public hospitals remained under government control, they were granted more autonomy to participate in a free market and help to keep costs low. By 1983, Singapore launched its National Health Care Plan that detailed the long-term strategic plan for maintaining a quality and affordable healthcare system that was scalable and sustainable as well as responsive to the growth of its economy and population needs (ibid). At the core of change was a focus on individual responsibility and supplying the tools and infrastructure to help citizens to help themselves as part of a collective wellness culture.

According to the United Nation's Millennium Development Goals data, in 2012, the rate of child mortality under 5 years in Singapore was 3 per 1,000 live births compared to Uganda's 69 per 1,000 live births (United Nations, 2014). Differences between how Singapore has approached the strengthening of its healthcare system and how Uganda is approaching its health system development are listed in Table 2 below:

Table 2. Healthcare System Differences Between Singapore and Uganda	
Singapore	Uganda
Public services are allowed autonomy to contribute to free market economics and help keep costs low	Decentralized system places autonomy at the local level
Government intervention is permitted to keep healthcare quality high and costs low if there are any observed market shifts	Government subsidies for certain programs are made available
Patients are required to pay some fee though healthcare is guaranteed	Healthcare is free to all, though lack of oversight breeds corruption (i.e., denial of care for those who cannot pay; Wooding, Nagaddya, Nakaggwa, 2012).

Private providers keep pace with costs set by public hospitals since quality of care is equivalent	Private providers attract a growing middle class and may provide more quality/specialized care than provided by public services
Strong institutional support and common messaging across the country	Fragmented institutional messaging

Certainly, Singapore is in a very different economic, political, and socio-cultural position than Uganda so the comparison between them could seem inappropriate. However, there is always use in surveying when a country does something well to backwards from there to determine what tools and methodologies could be leveraged and altered. At the very least, starting with understanding what thriving healthcare systems do to maintain that position can provide clues for development. Singapore stands out among healthcare leaders because they have not always enjoyed their economic status or health prosperity and have in a fairly short period transformed their healthcare system, lending to the notion that it is possible to achieve given the right set of factors in alignment. In 1980, Singapore's GDP per capita was \$5,004 in current US dollars. Comparatively, Uganda's GDP per capita for the same period was \$99 (World Bank, 2014). In 2013, Singapore's GDP per capita was \$55,182 compared to Uganda's \$572 (ibid). While Singapore saw double the growth in GDP per capita over the 33 year period, Uganda did see growth. It is worthy to note that if there is any relationship between economic growth and healthcare system development, progress (as measured by MDGs) is a real possibility in Uganda.

Relationship between Institutional Strength and Healthcare System Strength

To assess the relationship between institutional strength and strength of healthcare systems, both are represented herein by validated indices, the Global Report 2014 published by the Center for Systemic Peace (Marshall & Cole, 2014) and the health systems ranking index published by the World Health Organization (Tandon et al., 2000). The Global Report 2014 is applied to index countries based upon armed conflict, governance, and societal-system development. This index is being used to proxy for

institutional strength since the report reveals the fragility of states and relevant literature suggests that institutions are key to the development of weak and fragile states (Keohane, 1998). This composite index is comprised of an effectiveness score and a legitimacy score. The effectiveness score is calculated from security effectiveness (total residual war), political effectiveness (regime/governance stability), economic effectiveness (GDP per capita) and social effectiveness (human capital development). The legitimacy score accounts for security legitimacy (state repression), political legitimacy (regime/governance inclusion), economic legitimacy (share of export trade in manufactured goods) and social legitimacy (human capital care). To rank healthcare systems, Tandon et al. used a composite index made up of 5 factors that were accordingly weighted based upon a WHO survey where individuals identified how they prioritized the goals of healthcare systems: 1) overall health (25%); 2) health inequality (25%); 3) responsiveness-level (12.5%); 4) responsiveness-distribution (12.5%); and, 5) fair-financing (25%). The resulting country rankings are enabled by a score assigned that aggregates these measures to indicate overall health system performance.

The healthcare system index ranked 191 countries whereas the fragility index ranked 167 countries. Both indexes held measurement for the same 158 countries. Using this combined data set the scores of healthcare systems were correlated to observe if there was a relationship between healthcare system strength and institutional strength. The healthcare system index ranked states from low to high and the fragility index scored from high to low. For example, Uganda ranked 149 (score=.464) on healthcare system, but received a score of 18 (high fragility) on the fragility index. Therefore, the correlational analysis showed a negative significant relationship between the scores on these indexes, depicted in Table 3 below:

	Fragility Index	Effectiveness Score	Legitimacy Score
Healthcare System Score	-0.760920865	-0.760176321	-0.65555051

This data shows that the relationships between healthcare system strength and overall state fragility is high ($r=-.76$) as are the relationships between health system strength and state effectiveness ($r=-.76$) and legitimacy ($r=-.66$). This lends support for the hypothesis that institutional strength and health system strength are interrelated concepts and, as such, better understanding these mechanisms should be prioritized. These strong relationships also lend credibility to using the composite score of overall state fragility solely to look at the ability to predict healthcare system strength.

<i>Regression Statistics</i>					
Multiple R	0.75824				
R Square	0.574929				
Adjusted R Square	0.572186				
Standard Error	0.146168				
Observations	157				
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	4.479076	4.479076	209.6446	1.3491E-30
Residual	155	3.311589	0.021365		
Total	156	7.790666			

Table 4. Regression Fragility Scores on Health System Scores

In regression of state fragility scores on healthcare system scores, the robust model proved significant at $p<.00001$ (Adj $R^2=.5721$; $F=209.644$; $df= 1, 155$). Using these indices to represent the underlying constructs, shows that security, political, economic, and social legitimacy and effectiveness account for 57% of the variability in health system strength. This finding helps to add to the literature and reinforce the influence that institutions have on achieving desired outcomes in health.

Discussion

This exploratory comparative analysis sought to identify what institutional capacity Uganda has or could adopt in order to provide more robust healthcare services for its growing population. Based on the case studies and global index data reviewed, the notion that the role of institutions is key in developing healthcare systems appears to be a solid direction for future in-depth analysis. In particular, better understanding what aspects of Uganda's existing institutions work well or may serve to be bolstered in measurable, re-enforceable and accountable ways may add clearer, more targeted direction for development. In addition, ancillary institutions such as housing, legal, security, economic, or political, can be surveyed for areas where desired healthcare outcomes can be better achieved if those institutions partner for strategic aims.

Due to the rapid population growth in Uganda, massive healthcare reform has not been supported in review of best practices, but instead finds for taking a targeted approach that starts low, tracks progress, validates the desired impacts, institutionalizes the change, and then disseminates to a broader scale so that all may benefit. Such an approach would limit the risk to wasting valuable time and resources, both of which are already under strain. It is argued that, though there is a push towards healthcare system strengthening across Africa, much of that push is 'talk' that lacks the reinforcement of targeted and substantive 'action' much of which can be attributed to the challenge of restructuring healthcare systems being a massive and overwhelming endeavor (Mbacke, 2013). Owing to the decentralized healthcare system structure, should individual parishes take on health outcome improvement initiatives, such progress can be tracked and funneled through the state's Ministry of Health with central cooperation and information dissemination to help create a knowledge base accessible to all.

In general, it is reviewed that the primary institutional push would do well to focus on preventive care rather than curative care to begin with. Preventive services, through international health system survey and best practices, have demonstrated to provide for the greatest lift despite economic growth of a country. Uganda faces an extremely heavy burden of disease, limited healthcare personnel, inadequate healthcare infrastructure, and a growing population that is a very young population, many of which will not survive (if keeping with current trends) to realize an adulthood to contribute to the healthcare workforce, just be consumers of it. Allocating resources and efforts where they will be the most valuable can be a working strategy with the broadest reach. Additional priorities for maturing the healthcare system over time once preventive care services are institutionally solidified would augment this strategy.

It was also reviewed that the measurement of interventions and their outcomes is the best, most reliable method for helping a country to determine what works well for their population. In Uganda, much of the healthcare interventions are made possible through outside aid such as donor funding or NGOs. For such externally-driven influences, having policies in place to establish governance can be helpful. For example, mandating that NGOs and donor organizations adhere to a standard of data gathering would be hugely beneficial for assessing the impacts of targeted interventions and where some work or others to not from a contextual perspective. Fragmentation of approaches should be avoided. Institutional strength and common goals across the health system can facilitate a needed integration that will reduce cost owing to intervention failures and build a centralized knowledge base to be leveraged in the future.

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