EPRC
ECONOMIC POLICY RESEARCH CENTRE

Towards Sustainable Development

Speed
FOR UNIVERSAL HEALTH COVERAGE IN UGANDA

RESEARCH SERIES No. 136

UNIVERSAL HEALTH COVERAGE IN UGANDA: THE CRITICAL HEALTH INFRASTRUCTURE, HEALTHCARE COVERAGE AND EQUITY

TONNY ODOKONYERO
FRANCIS MWESIGYE
ANNET ADONG
SWAIBU MBOWA

June 2017

RESEARCH SERIES No. 136

UNIVERSAL HEALTH COVERAGE IN UGANDA: THE CRITICAL HEALTH INFRASTRUCTURE, HEALTHCARE COVERAGE AND EQUITY

TONNY ODOKONYERO
FRANCIS MWESIGYE
ANNET ADONG
SWAIBU MBOWA

JUNE 2017

The Economic Policy Research Centre (EPRC) is an autonomous not-for-profit organization established in 1993 with a mission to foster sustainable growth and development in Uganda through advancement of research –based knowledge and policy analysis. Since its inception, the EPRC has made significant contributions to national and regional policy formulation and implementation in the Republic of Uganda and throughout East Africa. The Centre has also contributed to national and international development processes through intellectual policy discourse and capacity strengthening for policy analysis, design and management. The EPRC envisions itself as a Centre of excellence that is capable of maintaining a competitive edge in providing national leadership in intellectual economic policy discourse, through timely research-based contribution to policy processes.

Any enquiries can be addressed in writing to the Executive Director on the following address:

Economic Policy Research Centre
Plot 51, Pool Road, Makerere University Campus
P.O. Box 7841, Kampala, Uganda
Tel: +256-414-541023/4
Fax: +256-414-541022
Email: eprc@eprcug.org
Web: www.eprcug.org

TABLE OF CONTENTS

ABSTRACT

Universal Health Coverage (UHC) has gained popularity within the global health policy and academic circles as countries strive to meet the UHC target established under the Sustainable Development Goal agenda. To accomplish this goal, developing countries such as Rwanda, Ghana and others have pursued bold policy initiatives including the introduction of health insurance schemes. In addition to financing, presence of critical health infrastructure and Human Resources for Health (HRH) are crucial to achieving UHC. Using administrative data from IntraHealth Uganda Country Programme (as well as document review) and the Demographic & Health Survey data, this paper analysed Uganda's critical health infrastructure (including HRH) needed to attain sustained progress towards UHC. It also reviewed UHC progress and analysed equity by computing Composite Coverage Index (CCI) and Coverage Gap Scores.

Results show fundamental challenges with the health infrastructure needed to deliver UHC in Uganda. Spatial inequality exists in health facility population coverage and private sector health infrastructure investments. Low health workforce density imply that the existing health workforce is deficient and unable to expand population-based healthcare services. Progress towards UHC [considering reproductive, maternal, new-born, and child health (RMCH) interventions] has improved marginally over the reviewed period, although the CCI remained low, and regional and socio-economic disparities in coverage remained. Findings also demonstrate that improved healthcare coverage corresponds to better health outcomes.

Accelerating progress towards UHC require; increased investments in health infrastructure and strengthening Public Private Partnership arrangements to establish health infrastructure in disadvantaged regions; and improvement in health workforce density by reviewing current staffing norms for critical cadres as well as increased deliberate investments in HRH using similar initiatives like the HRH programme model of Rwanda. To scale up healthcare coverage for RMCH, interventions should aim to maintain successes obtained for immunization and address existing gaps in lagging intervention areas. These objectives can only be achieved if the country institutes and effectively implements a coherent set of health sector policy reforms, regarding health financing, for instance, while drawing lessons from the successful policy efforts observed in the Rwandan case scenario.

1. INTRODUCTION

1.1 Background

The global movement towards Universal Health Coverage (UHC) has been gaining momentum. This is partly driven by Sustainable Development Goals (SDGs), a continuation of unfinished health objectives of the Millennium Development Goals (MDGs). Indeed, the third SDG calls for ensuring healthy lives and promoting wellbeing for all at all ages (World Health Organisation (WHO), 2015). Under this goal, the world is committed to; reducing maternal mortality as well as child and neonatal mortality; ending epidemics such as HIV/AIDS, Tuberculosis, and malaria; and to ensuring UHC, among other objectives. However, limited access to basic health care remains a global challenge. Indeed, the UHC agenda stems from the fact that more than one billion people worldwide still lack access to basic healthcare (Nicholson et al. 2015).

The ultimate goal of UHC is to improve health outcomes by expanding access to essential healthcare services for all people in need, and by ensuring that the people who seek access to healthcare services do not encounter excessive or undue financial hardship. Thus, in the efforts to realise UHC, international development agencies (such as the WHO and the World Bank) urge countries (especially developing nations) to pay attention to issues pertaining to the following: (i) coverage of quality essential health services such as health promotion, prevention and treatment, as well as palliation and rehabilitation; (ii) financial risk protection coverage such as health insurance scheme coverage and out-of-pocket medical expenditure; and (iii) equity in coverage.

Beyond creating access to healthcare services for all, UHC presents supplementary benefits to the economy. According to Nicholson et al. (2015), UHC is crucial to strengthening the health system which is essential for improving health outcomes, and is highly effective in providing substantial health benefits both economically and politically. As a result of universal coverage, the poorer and disadvantaged sections of the population can accrue larger health gains, and inequality and poverty can significantly reduce. In addition, UHC can help reduce poverty levels through enhancing productivity of the poor. Indeed research suggests that unhealthy people are poor (Sala-i-Martin, 2002). From the political lens, UHC is a powerful way to reduce social disorder and conflicts through promoting equality in health access.

Some sub-Saharan African countries such as Rwanda, Ghana and Ethiopia have implemented interventions or policies that directly address the agenda of UHC. In Uganda, the Health Sector Development Plan (HSDP) 2016-2020 emphasises the need "to accelerate movement towards Universal Health Coverage". This renewed focus on UHC is in line with Uganda's second National Health Policy (NHP II), whose overriding aim is to; improve access to the national minimum health care package - i.e. a basic package of essential healthcare services; shield healthcare service consumers from catastrophic health spending; and ensure equity in access to healthcare services. The implementation of the Uganda National Minimum Health Care Package (UNMHCP) started in 2000 as a strategy to improve access for the poor, and otherwise marginalized and disadvantaged people (MoH 2000). Interventions such as home-based management of fever, which was introduced under the UNMHCP, are said to have improved utilisation of services because of the increased drug availability and the opening of new health centres in remote areas (GoU 2003).

Notwithstanding this progress, some components of the UNMHCP have not been fully implemented due to resource limitations and other constraints (GoU 2003; Ssengooba 2004). This has resulted into re-prioritization and rationing both within the package and across populations. For instance, Ssengooba (2004) asserts that a comprehensive UNMHCP is only available in higher-level health centres and hospitals and not in lower health units. This restricted

availability might influence equality and/or equity in access to services. This partly explains why important health indicators such as Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) have stagnated and even worsened for the poor (GoU 2004; Okuonzi 2004).

The health related strategies and policies that are in place in Uganda indicate that UHC is not a very new initiative in the country, as the government has made some efforts towards universal access. Nevertheless, many gaps that have plagued the health system still exist. For example, the health system delivery mechanism is weak and inadequate for delivering UHC (Kiwanuka et al. 2008; Kaija & Okwi 2014). This weak system is manifested in poor health infrastructure, sub-optimal operation of health facilities, and staff absenteeism, among others (GoU 2009; Global Health Initiative 2011; Kaija & Okwi 2014). The health system is also characterized by low quality of essential healthcare services, in addition to inequitable access (Ssengooba 2004; Global Health Initiative 2011). These challenges require more efforts to unblock barriers to the delivery of and equitable access to essential healthcare in order for Uganda to accelerate progress towards universal healthcare coverage.

Against this background, this study aims to analyse the status of the critical health infrastructure which is needed to attain sustained progress towards UHC, and to review Uganda's progress towards UHC. Some of the recent studies that have assessed UHC in Uganda (for instance, Zikusooka et al., 2014) have primarily focused on the financial risk protection aspect of UHC, but did not comprehensively analyse coverage including health system delivery or intervention areas. The current study examines coverage based on healthcare intervention areas, – with a focus on Reproductive, Maternal, and Child (RMC) healthcare. Also, we conduct the first kind of analysis on UHC in Uganda based on CCI approach that considers intervention areas, thus a novel contribution to the literature. Broadly speaking, this study contributes to efforts aimed at measuring progress towards UHC. Monitoring UHC progress plays a critical role in achieving global goals such as the MDGs and those outlined in the post-2015 development agenda (WHO & World Bank; 2013). Additionally, the study contributes to the policy discourse pertaining to Uganda's acceleration in movement towards UHC, as emphasized in both the Health Sector and National Development Plans. The study thus seeks to answer key questions such as: what is the state of the critical health infrastructure necessary for delivering UHC in Uganda? To what extent has Uganda registered progress towards UHC, particularly in the areas of RMC healthcare? What are the constraints to the delivery of UHC? Finally, how can Uganda accelerate progress towards UHC?

The rest of the paper is organized as follows: The next sub-section discusses the evolution of Ugandan policies and programmes relevant to UHC and is followed by related literature and the conceptual framework. Section two contains the data and methods of analysis. Section three provides the study findings, and the last section presents the conclusion and policy recommendations.

1.2 Uganda's evolutionary journey towards UHC: Policies and Programmes

While the concept of UHC may be relatively new, the Ugandan government has launched numerous initiatives towards improving equity and efficiency in access to health services, as illustrated by the policies and programmes undertaken over the years. In this section, we pay particular attention to Uganda's efforts to achieve UHC. By reviewing the strategic policies and programmes in the health sector, the section notes some of the initiatives undertaken towards attaining universal health coverage.

From precolonial times to the early 1990s, minimal government funding to the social sectors meant that the quality of many public health facilities remained poor, the staff were underpaid and demoralised and there was shortage in trained personnel and medical

equipment (Deininger & Mpunga, 2005). Subsequently, the majority of the population resorted to relying on church groups and traditional leaders to access health related services.

In the early 1990s, the health sector benefited from the structural adjustment programs. Liberalisation of the sector allowed for private sector players which led to a diverse range of health service providers being available to the population. It also allowed for the private sector to partner with the public sector to provide health services. Currently the private health sector players include: Private-Not-for-Profit (PNFP), Private Health Providers (PHP) and Traditional and Complimentary Medicine Providers (TCMPs). These offer alternative support in the provision of health services beyond government health facilities.

The health sector also benefited from Decentralization under the 1995 constitution and the 1997 Local Government Act which allowed local authorities to participate in health service delivery, recruitment and management of personnel for district health services, passing by-laws related to health planning, budgeting, additional resource mobilization and allocation for health services. Decentralisation has been crucial in bringing services closer to the population. With decentralization, also emerged *cost sharing in health facilities* as a means of generating local revenue for health services at the district level (Orem *et al*., 2011).

In 1999/2000, the first National Health Policy was developed and had the overall objective of reducing mortality, morbidity and fertility as well as the disparities therein by ensuring access to a *minimum health care package*. One of the key features of the policy was subsidization of designated public health and essential clinical services that have visible consequences for the community. To operationalize the first health policy, the Health Sector Strategic Plans (HSSP) I and II were developed. Key features of the health sector strategic plan I that were relevant to UHC was the objective of eliminating the factors of cost and affordability as barriers to access to essential care; this goal led to the *abolition of user fees in 2001* in all government health facilities except in private wings of hospitals. A study by Orem *et al.* (2011) on the impact of the abolition of user fees in Uganda found that the abolition improved access to health services and that the poorest households benefited the most; second, with the abolition, illness reporting increased, especially among the poorer quintiles, and utilization increased in the period immediately after the abolition, particularly by the poorest quintile. The new policy also led to efficiency gains, with increased use of lower-level government health centres. There was also an increase in per capita out-patient attendance rate from 0.40 (pre-HSSP I) to 0.72 in 2002/03 and 0.79 in 2003/04, as an immediate outcome of the policy. Additionally, there was near universal coverage of antenatal clinics; the expanded programme on immunization increased the coverage for DPT (diphtheria, pertussis, and tetanus) from 55 percent (pre-HSSP) to 83 percent in 2003/04.

Following the HSSP I, the HSSP II primarily focused on the *universal delivery of the Uganda National Minimum Health Care Package (UNMHCP)* (Information Box 1). Under the first National Health Policy, the number of health facilities in the public sector and of PNFPs increased from 1,079 in 2004 to 2,301 in 2010 (MoH 2010)[1]. However, the attainment of Uganda's National Minimum Healthcare Package has been labelled ineffective and inefficient mainly because of the budgetary constraints of trying to achieve universal access with $8 per capita rather than $28 (Ssengooba 2008). A further analysis by the same author (Ssengooba, 2008) found that most of the package available under UNMHCP was predominantly available at health centre IVs and hospitals. This restricted availability poses an additional challenge, since most people in Uganda live in rural areas and incur significant transportation costs to attend hospitals in town, as such, they are rationed out of the package.

1 Ministry of Health (MoH, 2010): The Second National Health Policy: Promoting People's Health to Enhance Socio-economic Development

In other words, to achieve the goals of the minimum package, significant increases in budgetary allocation and other resources are needed. In its current form, the minimum package is unable to appropriately serve the targeted population (poor/vulnerable groups).

Box 1: Uganda National Minimum health care package

*The Uganda National Minimum Health Care Package (UNMHCP) is a cost-effective venture that the government established to guarantee free access of its population to a set of health services. The minimum healthcare package includes preventive services such as childhood immunization and health promotion and education as well as treatment and control of common and infectious diseases such as malaria, HIV and Tuberculosis. The package is more of a minimum health insurance package that the state provides to its population. The UNMHCP was implemented by the HSSP I, but due to bottlenecks in implementation such as inadequate level of prioritization, inadequate investments in critical inputs, piecemeal implementation and poor coordination, most of the targets were not achieved (*MoH *2005). As such, under the HSSP II, the package was grouped into four clusters as below:*

1. *Health Promotion, Disease Prevention and Community Health Initiatives;*
2. *Maternal and Child Health;*
3. *Control of the Communicable Diseases Cluster*
4. *Control of Non- Communicable Diseases/ Conditions.*

Source: MoH 2005.

Following the NHP I, the NHP II (2010/11-2019/20) was designed with the main emphasis to achieve universal access to minimum health care package. It is meant to be operationalised through implementation of the Health Sector Strategic and Investment Plan (2010/2011-2014/2015), and lately, the Health Sector Development Plan (2015/16-2019/20) which aims at accelerating movement towards UHC. A key element under this strategy is the establishment of a *National Health Insurance* (NHI), *and other community health financing mechanism* similar to the one found in Rwanda. Establishment of an insurance scheme is crucial for tackling the existing inequalities in the distribution of health system inputs between rural and urban areas and different levels of care and geographic areas. However, currently, there is no consensus around the insurance policy initiative or acceptance of the initiative by all stakeholders in Uganda's health sector. An option being considered is the establishment of a solidarity fund as part of the NHP to enable rich household to subsidize the poor. Other policies relevant to UHC are the National Hospital policy and the proposed National Health Insurance policy. A summary of the policies relevant to UHC is provided in Appendix 5 to reflect how Uganda has progressed in terms of policy efforts aimed at achieving UHC - related targets.

1.3 Related literature

UHC is defined as the availability of quality, and affordable health services for all when needed without financial impoverishment - can be a vehicle for improving equity and equality in healthcare access, in addition to financial wellbeing (Lancet, 2016). UHC covers the aspects of healthcare access, financing, and utilization. Peters *et al.* (2008) explains access as "the timely use of service according to need". Utilization of health care is used as an operational proxy for access to health care. UHC removes financial barriers to health care access, reduces the incidence of catastrophic health expenditures and hence contributes to poverty alleviation and economic development (Sambo and Kirigia, 2014). There is also evidence that broad health coverage, facilitated by extended risk pooling and pre-payment, facilitates better access to necessary care and improved population health especially for the poor. Biodun (2014) argues that UHC has increased access to family planning, and immunization and improved sanitation in sub-Saharan African countries.

According to Jacobs *et al.,* (2011), access to health care

consists of four dimensions: availability, geographic accessibility, affordability and acceptability. The barriers to accessing health services can stem from the demand side and/or the supply side (Ensor and Cooper 2004; O'Donnell 2007). These two sides are related. On the demand side, individuals may not utilize services from which they could benefit if these services are of poor quality, yet the high level of demand, made effective by purchasing power, will induce the provision of quality care. The need to differentiate demand-side from supply-side barriers is relevant to the formulation of appropriate interventions. Indeed, O'Donnell (2007) notes that both sides have to be addressed concurrently. This notion is reinforced by James *et al.,* (2006), who argue that access barriers may not always be mutually exclusive and may interact and influence each other.

Studies indicate that the poor and vulnerable populations experience a greater burden of disease but have lower access to health services than those who are less poor. Barriers to access arise from both the service providers and the consumers. Distance to service points, perceived quality of care and availability of drugs are key determinants of utilization. Other barriers include; perceived lack of skilled staff in public facilities, late referrals, health worker attitude, cost of care and lack of knowledge (Kiwanuka *et al;* 2008).

Previous interventions have aimed to enable access to health services worldwide. For instance, primary health care (PHC) was endorsed in 1978 by the World Health Organization (WHO) member countries to reduce inequities in health, partly through enabling universal access to health services (Rasanathan *et al*; 2009; Jacobs *et al;* 2011). While universal coverage is the aim, most countries' health systems suffer from the 'inverse equity hypothesis', which states that new health interventions initially reach the socio-economically better-off, while the majority of the poor benefit only later in time (Victora *et al;* 2000; Jacobs *et al;* 2011). Addressing inequities in health access requires interventions to extend beyond the health sector to include other social determinants of health. According to Rasanathan *et al.,* (2009), the social determinants of health include education, gender, ethnicity/race, occupation, and income.

Although the health status has been improving in most countries, wide inequities persist both between and within countries. The situation is worse in the poor countries. In developing countries, poor people are less likely than the better-off to receive effective health care. One stylized fact about access to health care in the developing world is the underutilization of effective interventions. A second stylized fact is that utilization is lowest among the least well-off. This trend is of concern from both efficiency and equity perspectives. The poor also tend to be the least healthy and the most likely to attain the most benefit from health care (O'Donnell, 2007). Indeed, a study by Kiwanuka *et al.,* (2008) attests to the inequity manifested in the poor and vulnerable experiencing lower access to healthcare services than the well-off.

The reviewed literature provides two salient aspects on which analysis of UHC can be based. Reinforced by the conceptual framework (as discussed in the subsequent section i.e. 1.4), this study uses the two important aspects highlighted in the literature to analyse UHC. These are healthcare access (e.g. availability of health facilities and geographic accessibility) and wealth (or income) as one of the socio-economic stratifiers for equity analysis.

1.4 Conceptual framework

In light of the fact that monitoring (or measuring) progress towards UHC plays a critical role in achieving global goals such as the MDGs and those proposed in the post-2015 development agenda (WHO & World Bank, 2013), this study adopts the 2013 WHO/World Bank framework for monitoring progress in UHC to review the progress that Uganda has made towards UHC based on select healthcare intervention areas. This framework is designed to track a country's

progress towards UHC by assessing or measuring aggregate and equitable coverage of health services, including financial risk protection, and can be used as part of a comprehensive framework for monitoring national health system performance (WHO / World Bank, 2013). Using the framework, we focus on two aspects of health system performance: the level of coverage for health interventions, and equity. We do not analyse financial risk protection in this paper, as it has already been extensively researched in Uganda (e.g., Zikusooka *et al;* 2014).

According to the WHO and World Bank, country monitoring of UHC based on the framework is aimed at ensuring that progress towards UHC reflects a country's unique epidemiological and demographic features, population demands, health system, and level of economic development. These country specific features are essential in informing what should be monitored, for instance, a developing country such as Uganda may focus on effective expansion of essential services to rural or under-served areas. Country specific context is helpful in driving the specific measures used in tracking progress. However, the key UHC monitoring domains, i.e., access to essential quality healthcare services, coverage of the entire population (equity), and financial risk protection, are applied across all countries regardless of income level and health needs.

Although this is a global framework providing a common approach that all countries can adopt to monitor UHC and compute country data versus internationally standardized indicators, which allow cross-country comparisons of progress towards UHC, individual countries can also tailor the UHC measures based on this framework to best reflect the country-specific context (WHO & World Bank, 2013).

The analysis in this study takes into account the framework's underlying principles based on the common approach to monitoring progress towards UHC, including the following:

(a) Measures of essential healthcare service coverage for the population.
(b) The measures of essential healthcare service coverage consider the full population across the life cycle, for all age brackets and genders.
(c) The UHC measures of service coverage encompass all levels of the health system. For example, Emergency Obstetric Care (EMOC) should be provided in not only specialized health facilities but also at other (lower) level units.
(d) Service coverage should be equitably distributed (equity in coverage). This requires disaggregation by socio-economic strata to assess the degree of equitable distribution of coverage. Among others, the different socio-economic strata include wealth status or household income level, location of residence, gender, and education level.

The methodological considerations for applying the aforementioned principles of the UHC measures for healthcare service and financial risk protection coverage include the following three facets:

(1) Service coverage: As illustrated in Figure 1, the framework comprises two measures of service coverage: The first is a set of interventions related to the health MDGs that focus on communicable diseases (CDs), reproductive health, and nutrition for both mothers and children. The second is a set of interventions related to chronic conditions and injuries (CCIs) which focus on addressing non-communicable diseases (NCDs), mental health, and injuries for adolescents, adults, and the elderly.

In the framework, the two measures of service coverage include services provided at all health system levels. The spectrum of services is categorized into two broad service coverage areas (see Figure 1), i.e., services for promotion and prevention, and services for treatment and care. Under each service coverage area, the framework proposes specific indicators of coverage for priority services based on relevance, quality, and availability.

However, the weakness of this approach is the relative scarcity of good treatment and care coverage indicators, as this scarcity presents a challenge in determining population needs for conditions that require facility-based care (WHO & World Bank, 2013). Another weakness is that available coverage measures rarely incorporate quality adjustments or "effective coverage", instead assessing only "access" or "contact" coverage. Some indicators can measure quality adjustments, for instance, in hypertension control, diabetes, and tuberculosis treatment. However, additional indicators beyond service coverage are required for quality adjustment/measurement for a considerable number of other services.

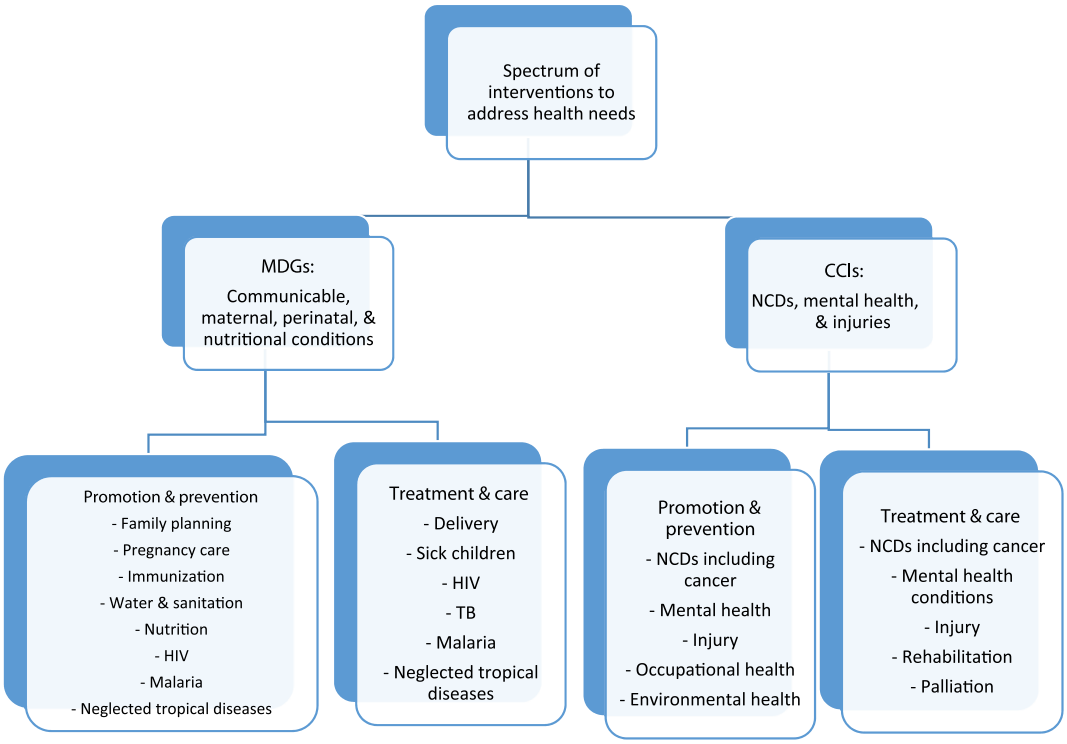
The aggregation of service coverage measures involves weighting of interventions such that an intervention that affects the risks of disease in 100 percent of children such as immunization can receive a higher weight than an intervention that covers less that 1 percent of children, such as appendectomy. Equal weighting may also apply, in which all service areas (or interventions) are considered equally important, and are thus equally weighted.

(2) Financial risk protection coverage: The indicators used to measure the extent of financial risk in health are the - incidence of catastrophic health expenditures, and the incidence of impoverishment due to out-of-pocket health expenditures. However, this study does not analyse financial risk protection coverage, because it is widely covered in existing studies (e.g., Zikusooka *et al;* 2014).

(3) Equity in coverage: Here, UHC must commit to and ensure that there is equity such that the poorer and more disadvantaged sections of the population are not left behind. Accordingly, there is a need to have measures disaggregated by an array of socio-economic and demographic stratifiers, for instance, age, wealth or income, sex, residence, minority, and migration status. One approach that can be used to capture equity or differences in coverage across a range of population groups is to compare the levels of coverage of extreme groups (or one extreme group and the population as a whole). The framework focuses on the poorest 40 percent of the population compared to the entire population.

Regarding targets used to assess UHC country progress, the ideal coverage target for essential health services would be 100 percent across the cluster of priority interventions, however, the more realistic target, especially considering low level of coverage among the poorest 40 percent of the wealth distribution, is at least 80 percent coverage of the poorest 40 percent of the population. This is termed the "80:40" target and is associated with both the MDGs and the CCI intervention groups (WHO & World Bank, 2013).

Figure 1: Indicator framework for monitoring service coverage – progress towards UHC



Intervention coverage indicators among population in need with "effective coverage – equity & quality"

Source: Adopted from WHO / World Bank, 2013.

Using the framework described above, this study analyses progress towards UHC based on service coverage and equity in coverage. In Uganda, service and equity coverage have been scarcely examined, unlike financial risk protection, which has been recently studied. To establish an aggregate measure of coverage, this study adopted a framework based on different health system intervention areas along the continuum of care, which include services for promotion and prevention and services for treatment and care, as reflected in Figure 1. In particular, the service areas of focus in this paper are Reproductive, Maternal, and Child (RMC) healthcare interventions. This area of focus (RMC healthcare) was selected on two grounds. First, they form the top two objectives under the third Sustainable Development Goal, and second, they are critical areas of emphasis under the UNMHCP.

2. METHODOLOGY

2.1 Data

We used two broad sets of secondary data – administrative and national survey data. The data source for the former was administrative data and documents from the Ministry of Health (MoH) [various years] and Human Resources for Health (HRH) data from IntraHealth, Uganda Country Programme (2008-2013)[2]. The latter (survey data) were from the Uganda Demographic and Health Survey (UDHS) for 2006 and 2011 and were specifically used to compile health service coverage indicators and to compute the Composite Coverage Index (CCI). Additionally, the latest population (census) data from the Uganda Bureau of Statistics were used (2014 and projection for 2015).

2 The data used were the ones available at the time of analysis i.e. from Intra-Health Uganda.

2.2 Indicators of critical health infrastructure for delivering UHC

Health facilities and staffing are two of the six building blocks that compose the health system (WHO, 2007). Health facilities fall under the building block of health service delivery, and HRH (staffing) are considered components of the health workforce. We selected these two key building blocks to review the status of the critical health infrastructure necessary to deliver UHC.

2.3 Analysis

Access to health services comprises the dimensions of availability, affordability, and acceptability of health facilities and the facilities' readiness to deliver health services (O'Neil *et al;* 2013). In this paper, access is discussed in terms of the availability of health facilities and distribution of the healthcare infrastructure, Human Resources for Health (health workforce), and services. We also analyse access to healthcare based on the distance individuals have to travel when seeking care. Specifically, the distance measure uses proportions of individuals seeking access to healthcare or treatment within a 5 km radius of a health facility, as measured by the Uganda Bureau of Statistics (UBOS) in periodic Uganda National Household Surveys (UNHS). The rationale for the 5km radius is based on the policy target under the HSDP (2015) that stipulates that the Ministry of Health should aim for 85% of the population to reside within a distance of 5km from a health facility.

In our analysis, descriptive statistics covered the health facility distribution and facility density[3] per 100,000 population. Regarding HRH, staffing gaps were reviewed based on MoH staffing norms and filled positions. Health workforce density[4] is estimated per 1,000 population, in line with the WHO density estimation (Cotlear *et al;* 2015).

2.3.1 Measurement of Composite Coverage Index (CCI) and Coverage Gap Score (CGS)

Progress towards UHC was analysed using the Composite Coverage Index (CCI) and Coverage Gap Scores (CGS) regarding reproductive, maternal, new born, and child health intervention areas. The selected healthcare interventions are critical areas of emphasis under Uganda's National Minimum Health Care Package and represent an integral part of health-related SDGs. UDHS data (2006-2011) were used to compute the CCI and CGS. Our analysis was restricted to a review of progress between 2006 and 2011 because the results of the UDHS prior to 2006 were not comparable to those obtained later on (2006 and after) for most indicators of the different intervention areas under analysis. For example, prior to 2006, the UDHS captured only health seeking behaviour for some of the Maternal and Child Health (MCH) interventions (e.g.; for pneumonia), while the 2006 and 2011 UDHS captured actual care/treatment. Accordingly, only the 2006 and 2011 data were comparable, hence our choice of these two years. The reviewed period in the analysis ended in 2011 because at the time of the study, Uganda's latest DHS (2016) was still being implemented.

The CCI is an effective method of summarizing and comparing coverage of interventions (Corsi & Subramanian, 2014). We contextualized the CCI in the situation of Uganda based on Uganda's DHS and used the index to aggregate coverage of healthcare interventions along a continuum of care for the country and to compare coverage across regions and socio-economic strata.

The traditional CCI model (equation 1) that we adopted is from the work of Boerma *et al.* (2008). The continuum of care considered covered the intervention areas of reproductive, maternal, newborn, and child health (as in Boerma *et al;* 2008; Victoria *et al;* 2012). The CCI in equation 1 is therefore a weighted average of the coverage indicators based on the different interventions (Victoria *et al;* 2012).

3 Health facility density is a measure of the extent to which the population is covered by healthcare facilities (health centers or hospitals)

4 Health workforce density measures the extent to which the population is covered by health workers – critical cadres (Doctors, Nurses, and Midwives).

$$CCI = \frac{1}{4}\left[FPS + \frac{1}{2}(SBA + ANC) + \frac{1}{4}(2DPT3 + MSL + BCG) + \frac{1}{2}(ORT + CPNM)\right] \quad (1)$$

The Coverage Gap Score (CGS) is an index that is measured as the mean percentage point difference between maximum and actual coverage within selected health intervention areas at a given time (Boerma *et al;* 2008), calculated as 100% - CCI.

In this calculation, FPS means family planning services and is measured by current use of contraception (any modern method) by married women of reproductive age (15-49); SBA is skilled birth attendance and was measured by delivery in a health facility; ANC is defined as at least one antenatal care visit with a skilled provider for the most recent birth; DPT3 represents vaccination for diphtheria, pertussis, and tetanus (three doses); MSL indicates measles vaccination, and BCG, Bacillus Calmette – Guerin vaccination (against Tuberculosis); ORT is oral rehydration therapy (ORT or increased fluids) – diarrhoea treatment for children under five years, and CPNM is pneumonia treatment among young children.

Treatment for pneumonia was assessed by a proxy namely, treatment for Acute Respiratory Infection (ARI). Clinically, pneumonia is diagnosed using physical symptoms such as; coughing, rapid breathing or difficulty breathing, and chest X-ray. Based on DHS information, such conditions are captured in terms of the symptoms of ARI (Hazir *et al;* 2013). Therefore, the DHS information on ARI can be used as a proxy for pneumonia, but the limitation of this method is that it relies on the recall of symptoms by caregivers or mothers.

2.4 Country case study review

A comparison between Uganda and Rwanda was performed in regards to progress made towards coverage of RMC healthcare vis-à-vis MCH outcomes. This comparison was conducted using a mix of desk review and descriptive analysis of DHS statistics. Rwanda was selected to provide an interesting country case scenario from which to draw lessons of success because of the Rwanda health system's spectacular improvement and progress in terms of delivery of universal coverage and improved health outcomes. As maintained by ODI (2012), although Rwanda and Uganda differ in some respects, they share many of the same conditions such as general resource scarcity and heavy reliance on external (donor) resources to fund public healthcare. Other similar aspects as noted by ODI (2012) include; similar approaches to health financing – e.g., experimentation of cost recovery in the 1990s and later implementation of user fee abolition, and decentralization, which devolved the delivery of healthcare services to the local government (level). As maintained by Farmer et a; (2013), Rwanda's approach to health system strengthening and delivering healthcare was in a post-conflict poverty setting and offers insights for a poor country (such as Uganda) with lagging health indicators (outcomes) to learn[5].

3. FINDINGS AND DISCUSSION

3.1 Health System Delivery Mechanism: A Review of Critical Tools for UHC Delivery

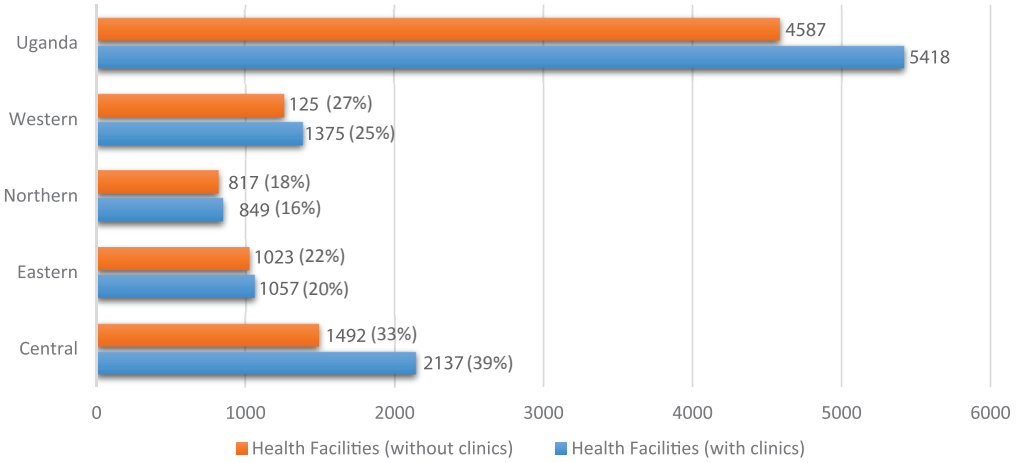
3.1.1 Health infrastructure

Healthcare infrastructure and/or facilities are a central facet of the health system; they are a requisite for health service delivery and an ultimate driver of progress towards universal access and coverage. Generating evidence on the availability of health facilities and their readiness to deliver health services is thus a fundamental aspect of the evidence base needed to assess universal access to health services as a precondition for attaining milestones towards UHC (O'Neil et al, 2013). In this sub-section, the current distribution of the healthcare infrastructure (facilities) and health facility density are presented to delineate

5 "The lessons from Rwanda's success should inform the work of those around the world who seek to deliver on the commitment of comprehensive and equitable healthcare for all" – (Farmer et al; 2013).

the access to and coverage of the population by health facilities in Uganda.

Figure 2: Distribution of health facilities[6]



Source: Author's computation based on HF inventory and HSDP (2015).

As depicted in Figure 2, the distribution of health facilities is skewed in favour of the Central and Western regions. The majority of the facilities are established in the Central region (39% - including clinics and 33% - without clinics), followed by the Western, Eastern, and lastly Northern regions. Private for-Profit (PFP) health facilities (clinics) are more common in the central region (30% of all facilities) followed by the Western region (8.7% of all facilities). There is marginal private sector investment in health facilities in the Northern and Eastern regions, as PFPs (clinics) account for only 3.2% and 3.7% of all health facilities in those regions, respectively. These findings suggest the need for more investments in healthcare infrastructure (facilities) in lagging regions by both the government and the private sector. Investing in lagging regions is important to establishing equity in access across regions to drive progress towards UHC.

Table 1: Health facility density.

Region	Health Facility Density per 100,000 Population	
	With clinic[7]	Without clinic[8]
Central	21.71	15.16
Eastern	11.32	10.96
Northern	11.44	11.01
Western	15.01	13.70
Uganda	15.15	12.83

Source: Author's computation based on HF inventory, HSDP (2015), and UBOS (2015 population projection)

Nationally, the health facility density with and without clinics is 15.15 and 12.83 per 100,000 population, respectively (Table 1). Across regions, the health facility density ranges between 11.32 per 100,000 population (in the Eastern region) to 21.71 per 100,000 population (in the central region). Based on the resulting implications, the health facility population coverage is the lowest in Eastern and Northern Uganda compared to the rest of the regions, which confirms the need for more investments in healthcare infrastructure (facilities), as revealed in the data on facility distribution. Fewer facilities are available to provide services for a larger number of people in the

6 "Health facilities (without clinics)" means government facilities only. Health facilities (with clinics) means government and private facilities combined.

7 With clinic means both public and private health facilities
8 Without clinic means only public health facilities

two lagging regions, and this mismatch potentially undermines both access and quality of healthcare services for the population, thereby posing a threat to UHC progress.

3.1.1.2 Access to health care

The fraction of individuals[9] who access healthcare and are within a distance of 5 km of a health facility is generally low across all types of health facilities (Table 2), implying that distance to health facilities is an impediment to healthcare access. Evidence from the UDHS (2011) confirms this barrier to healthcare access. For example, 41% of women of reproductive age (countrywide) reported that they have a serious problem in accessing healthcare for themselves when they are sick due to distance to health facilities (Figure 3). The problem is more striking in the South-Western and Northern regions as well as in rural areas (compared to urban) and amongst those in the lowest wealth quintile (poorest), as reflected in Figure 3.

Hospitals are facilities that are meant to provide a full range of healthcare services and are more difficult to access for care; this difficulty worsened over the reviewed period of 2002/03 and 2012/13 (Table 2). Access to healthcare from health centres did not improve between 2002/03 and 2009/10; however, thereafter, some improvement was registered (2009/10 - 2012/13), though not substantial. In 2009/10, approximately 24% of individuals sought healthcare within a 5-km radius of their home and access increased to approximately 35% in 2012/13. The improvement at the health centre level, especially between 2009/10 and 2012/13, may be associated with government efforts to establish and equip more health centres. For example, among other interventions in 2010, the District Infrastructure Support Programme[10] commenced, which involved equipping and rehabilitating regional and district health facilities, as well as constructing new ones. This programme contributed substantially towards enabling government to improve the health system infrastructure.

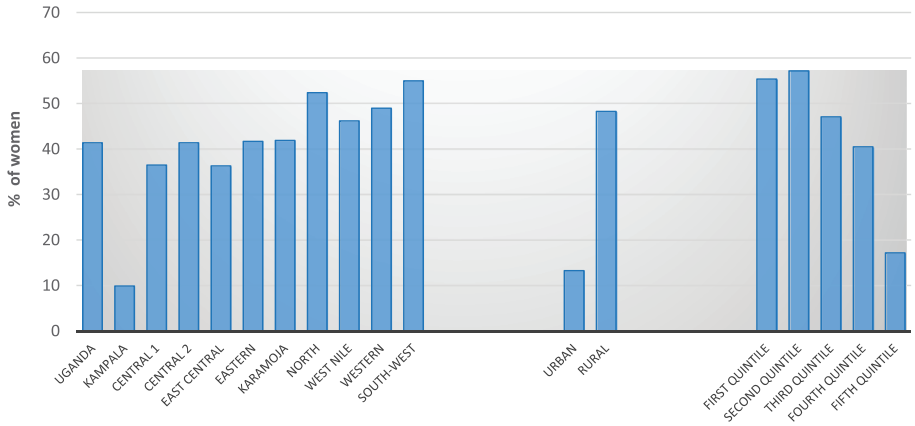
Table 2: Access to health care by facility type

Category of Health Facility	% accessing healthcare within 5 km radius			
	2002/03	2005/06	2009/10	2012/13
Government hospital	10.7[11]	4.3	5.7	4.9
Government health centre	23.1[12]	21.4	23.8	34.9
Private hospital/ Clinic	48.7	48.1	46.5	37.5
Pharmacy/Drug shop	17.5	14.8	16.8	7.8

Source: Compiled from UBOS – UNHS (2002/03, 2005/06, 2009/10, 2012/13)

9 Individuals who fall sick and seek medical care

Figure 3: Distance - a serious problem to healthcare access among women aged 15-49



10 Details about the programme are found in the health sector annual monitoring report for the FY 2013/14 by MFPED, October 2014.
11 Includes other hospitals apart from government hospitals
12 Includes other health centers apart from government health centers

Comparing the above results of the percentage of persons accessing care within a 5-km radius (Table 2) to those reported by the MoH shows some disparities, which arise from a potential failure in the MoH's approach to capture important intricacies of the access indicator. The MoH measures access based on residence within a distance of 5 km to a health facility and reports that (according to health facility inventories) the percentage of households that live within 5 km of a health facility is 75% (HSDP, 2015). Nonetheless, this figure falls short of the target of 80% under the HSSIP (2010/11-2014/15) and is below the current target of 85% (HSDP target – 2015). Indeed the MoH measure does not capture key issues as far as access to healthcare is concerned. This is because being located near a health facility does not guarantee access to needed healthcare or treatment for a number of reasons, e.g., lack or inadequacy of equipment in a health facility, unavailability or stock-out of drugs, and unavailability of health workers. Because of the potential flaw in the MoH's measure of access, this study relies on the measure reported in Table 2 to gauge access to healthcare, and based on the statistics in the table, access to needed healthcare remains a considerable challenge to the country. The implications of these findings are twofold. First, the MoH access indicator shows that the majority of households reside within a 5-km distance to health facilities, suggesting the availability of health facilities in most areas in Uganda. However, there are very few people who actually access healthcare from within 5 km, according to the UNHS statistics (Table 2); this finding implies that most of the existing or established health facilities are not fully functional or are ill-equipped to provide the services needed by the population, which then forces the majority of the populace to seek needed healthcare from facilities located further away. This result is corroborated by the fact that while physical access to health facilities increased to over 70% within 5 km, the health infrastructure remains outdated in many general hospitals and in some lower-level facilities (NDPII 2015/16-2019/20)[13]. Second, the proportion of individuals who access healthcare from within 5 km may be low due to the remoteness or unavailability of health facilities in some areas. This finding suggests that in order to gain steady progress towards UHC, it is appropriate for the government to invest further efforts into ensuring that there is universal access to healthcare needed by the population. Having health facilities in place that are located closer to the people is one objective, but if these facilities are dysfunctional and incapable of serving the healthcare needs of the population, then the goal of UHC will remain a dream in Uganda. Indeed, cases of dysfunctional health facilities are common; for example, only 45% of Health Centre IVs in the country have been found to be functional[14] (MoH – HSDP, 2015). Accordingly, the results suggest the need to stock existing health facilities with the necessary equipment, medical commodities/supplies, and human resources to serve the healthcare needs of the populace. In locations where there are inadequate or no health facilities, new ones can be established and stocked to create or improve access to care.

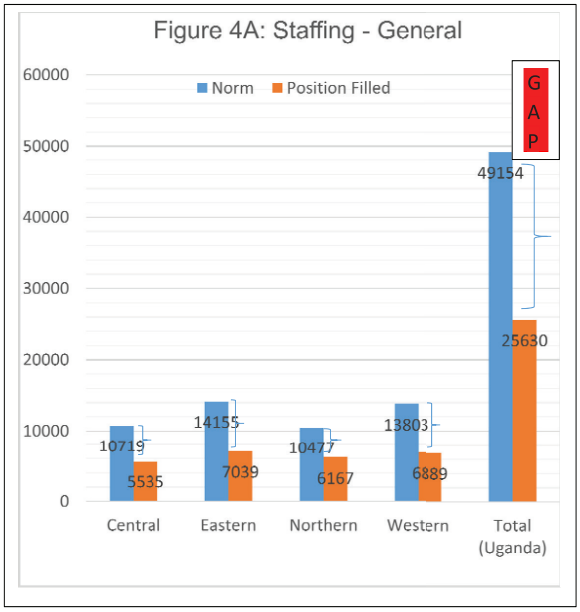
3.1.2 Health workforce

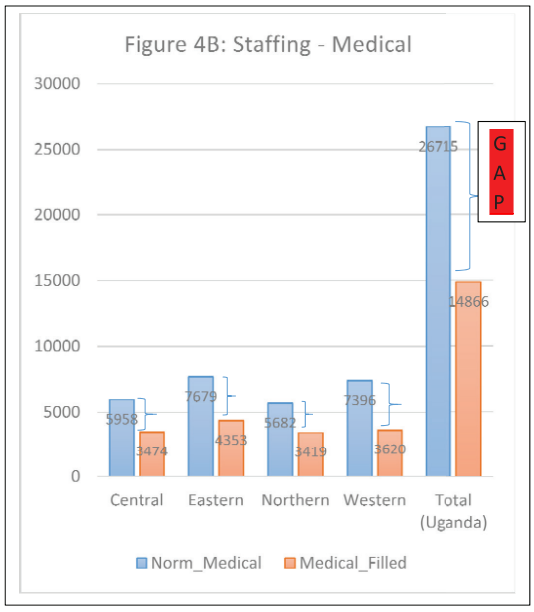
This sub-section discusses Human Resources for Health (HRH), a critical element of the health system that is required to deliver health services and to drive the UHC agenda. The results show some improvement in public sector staffing as reflected by the reduction in staffing gaps at all health facility levels between 2008 and 2013; however, the improvement is marginal (Appendix 1). The statistics in Figure 4 capture public health facility staffing at the district level and aggregate it at the regional and national levels.

From the results of Figure 4, only approximately 52% and 56% of the required HRH positions are filled for general staffing (including non-medical) and medical staffing, respectively. Wide staffing gaps therefore exist both at the national and regional levels, with marginal variations across regions.

13 Uganda's National Development Plan II (NDPII: 2015/16-2019/20)

14 Functionality measured in terms of availability of Comprehensive Emergency Obstetric Care (CEMOC) services





Source: Author's computation based on MoH data on district HRH recruitment plan 2011/12

When staffing is considered based on the tier of health facility, the findings show that the distribution is uneven across facility level. Higher level facilities are relatively well-staffed compared with lower level units (Appendix 1). For example, regional referral hospitals (RRHs) and general hospitals are relatively better resourced than lower level facilities such as HCIIs and HCIIIs. Most RRHs have at least 70% staffing capacity (MoH, 2014), whereas HCIIs have a staffing capacity of less than 50% (Appendix 1). This situation undermines service delivery and efforts to attain UHC, as lower level units are the health facilities that interface with more people seeking healthcare in rural areas, especially the poor and vulnerable population.

The identified HRH gaps can be attributed to various reasons, including a mismatch between the availability of health professionals and the demand for health services, inadequate funding for recruitment to meet staffing norms, and poor retention and motivation of staff, especially in rural areas (Republic of Uganda, MoH – HSDP, 2015). The gaps in HRH are a serious threat to Uganda's progress towards UHC. The goal of universal coverage will remain unrealized for Uganda if health facilities are not equipped with the human resources required to deliver the healthcare services needed by the population. In addition to training adequate health workers, the government needs to develop strong mechanisms capable of attracting and retaining health workers in the health system, especially critical cadres.

Table 3 shows that the health workforce density of the public sector is very low nationally and even across regions, with no significant regional variations. The health worker density ranges between 0.46 and 0.52 across regions. At the national level, the density increased slightly from 0.498 in 2011/12 to 0.710[15] in 2014. However, this figure is generally low and falls short of the WHO's recommended density of 2.28 health workers per 1,000 people (Cotlear et al, 2015). This finding thus means that the existing health workforce in Uganda's public health sector is deficient and unable to expand population-based healthcare services. This situation poses a serious threat to UHC progress. Reviewing current staffing norms, recruiting health workers to satisfy the staffing norms, and implementing staff retention initiatives are critical to achieving the WHO-recommended standard. A review of norms particularly for critical

15 Estimated density for 2013 is reported in Appendix 2. Note that density is computed only for public sector due to unavailability of data on private sector HRH. However, even if the number of public sector health workers (Doctors, Nurses, and Midwives) is doubled to account for the private sector, the density still falls short of the WHO-recommended standard.

cadres might be necessary because the results show that specific critical cadre gaps (e.g., for doctors, nurses, and midwives) are not substantial (Appendix 2), and yet overall health workforce density remains very low compared to the WHO standard for expanding population-based care.

Table 3: Public sector health workforce density

Region	Health Worker (HW) Density (HWs per 1,000 people) 2011/12	HW Density (HWs per 1,000 people) 2014
Central	0.52	-
Eastern	0.47	-
Northern	0.54	-
Western	0.46	-
Uganda	0.498	0.71

Source: Computed based on MoH data on the district HRH recruitment plan 2011/12, IntraHealth HRH data (2014) and UBOS population data

Further analysis based on the staffing norms set by the Ministry of Health reveal that even when all the required health worker positions are filled to the level of the set norms (i.e., 100% staffing as per set norms), the health workforce density is 0.86 (Appendix 2), which still falls short of the recommended standard by the WHO. This finding implies that even when all the critical cadre[16] gaps are filled according to set norms, the available health workforce will still not be in a position to provide full coverage to the population as required by the WHO standard (i.e., unable to expand population-based healthcare services). This result also suggests that the set norm is lower than what the required norm should be and might not have adequately accounted for health worker workload and the changes in healthcare services, demand or population. This presents the need to periodically review the set staffing norms by aligning them to the WHO standard, changes in populations and demand for healthcare services, and workload, among other factors.

3.2 Composite Coverage Index, Coverage Gap Scores, & Equity in coverage

Regarding the Composite Coverage Index (CCI), the results in Table 4 show an overall improvement in healthcare intervention coverage between 2006 and 2011 at the national level by approximately 6 percentage points. General improvement was also observed during the same period across regions, rural-urban locales, and wealth quintiles. The aforementioned overall improvement covers intervention areas related to reproductive, maternal, newborn, and child health services.

16 Critical cadres comprise – doctors, nurses, and midwives.

Table 4: Composite Coverage Index (CCI), Coverage Gap Scores (CGS), and Equity in Coverage

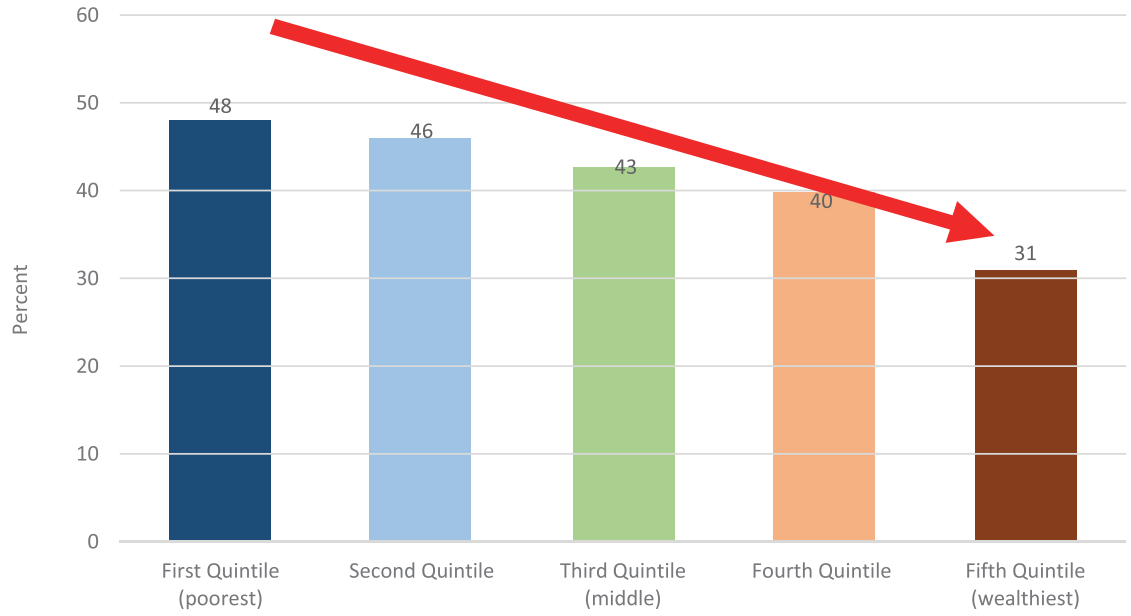
	Composite Coverage Index – CCI (%)		Coverage Gap Score – CGS (%)
	2006	2011	2011
I. Region			
Uganda	51.79	57.91	42.09
Central1	52.83	58.96	41.04
Central2	56.03	60.45	39.55
Kampala	69.11	70.13	29.87
East Central	49.00	55.63	44.37
Eastern	53.52	55.02	44.98
South West	47.67	53.03	46.97
Western	50.1	60.14	39.86
North	49.82	57.35	42.65
West Nile	49.88	58.09	41.91
Karamoja	44.71	54.39	45.61
II. Rural – Urban Locale			
Urban	64.16	69.14	30.86
Rural	50.17	55.96	44.04
III. Wealth Quintile			
First Quintile (Poorest)	47.4	51.78	48.22
Second Quintile	46.8	54.37	45.63
Third Quintile (middle)	49.3	56.86	43.14
Fourth Quintile	55.4	59.53	40.47
Fifth Quintile (Highest)	63.4	68.64	31.36

Source: Author's computation based on UDHS 2006 & 2011.

However, regional disparities in coverage exist. As expected, the Central and Western regions register higher coverage rates at above the national coverage level (Panel I Table 4 and Appendix 5). The South Western, Eastern, and Northern regions have the lowest coverage and are therefore associated with the highest Coverage Gap Scores (CGS) of 47%, 45%, and 43%, respectively. The regional disparities contrast with the principles of equity in coverage. Considering rural-urban locations, coverage for urban areas is 69%, while that of rural areas is 56%. Rural areas are thus associated with a higher CGS (44%) than the CGS of 31% in urban areas. This finding again reflects an inequity in coverage along rural-urban categorizations of the population.

Regarding wealth group categorization (Panel III – Table 4), coverage is lowest among the poorest segment of the population (52%) and highest among the richest (69%). The results show that the coverage index rises with increases in wealth quintile; for instance, the CGS for the poorest quintile is approximately 48%, while the corresponding values of the richest and second richest quintiles are 31% and 40%, respectively. As illustrated graphically (Figure 5), the CGS decreases with increases in wealth quintile. The richer segment of the population is therefore more covered in terms of health service interventions than the poor, indicating inequity.

Figure 5: Coverage Gap Score by Wealth Quintile



Source: Author's computation based on the UDHS 2011.

3.3 What is driving coverage?

This sub-section explores the drivers of population coverage based on different health service intervention areas under the Uganda National Minimum Healthcare Package (UNMHP). The statistics in Appendix 3 reveal that immunization interventions are the key drivers of the observed increase in coverage at both the national and regional levels. The immunization interventions in order of size of contributions were those for BCG, measles, and then DPT3. However, as may be expected in Kampala, the service area of skilled birth attendants also played a significant role in driving coverage.

Immunization coverage has seen more steady progress than the other service coverage indicators, which explains why it emerges as the key driver of overall coverage. This trend is attributable to notable contributions from interventions such as the National Expanded Programme on Immunization (UNEPI) and the Global Vaccines Alliance Initiative (GAVI), which aims to create equal access to vaccines for children wherever they live.

Interventions such as contraception, delivery at health facilities, ORT, CPNM and intermittent presumptive treatment for malaria (IPT2) are still low-performing areas in terms of population coverage (Appendix 3), and their performance is below national targets. Indeed, the main factor behind the low overall population coverage (based on CCI) is the modest performance of family planning and delivery at health facilities both at the national and regional levels. For antenatal coverage, there has been marked progress in the first ANC visit, but coverage for at least four ANC sessions was as low as 32% (MoH - HSDP, 2015). Uganda failed to meet the targets for the aforementioned service indicators outlined in the recently concluded Health Sector Strategic and Investment Plan (2010/11-2014/15). More efforts are therefore needed to expand population-based coverage for these intervention areas - contraception, delivery at health facilities, ORT, CPNM and IPT2 - in order to achieve the new targets set in the current Health Sector Development Plan (2015-2020) and to ultimately progress towards universal coverage for reproductive, maternal, newborn and

child healthcare. Efforts to expand population-based coverage for the different intervention areas should appropriately consider regional differences and rural-urban locations. This consideration is needed because of the observed marked differences in service coverage by intervention area across regions and by rural-urban location, as reflected in Appendix 3.

3.3 Linking coverage of Reproductive, Maternal & Child Health (RMCH) to maternal & child health outcomes: Comparison of two countries

In 2005/06, Uganda had a relatively higher level of coverage of RMCH than Rwanda, at 52% compared to Rwanda's rate of 48% (Table 5). However, over time, Uganda exhibited slow progress in coverage; for example, between 2005/06 and 2010/11, coverage of RMCH improved by only approximately 6 percentage points. In Rwanda, there was an accelerated progress in coverage, as evidenced by the steady improvement in coverage by 20 percentage points over the same time period. This trend led Rwanda to surpass Uganda, with Rwanda registering a coverage of 68% in 2010/11 compared to Uganda's coverage of 58%. Rwanda's steady progress has culminated in an impressive level of coverage of RMCH care, which is currently 72% (based on the latest Demographic and Health Survey estimate of 2014/2015)[17].

The findings from Rwanda show that steady progress in achieving a high level of coverage of RMCH can actually translate into better maternal and child health (MCH) outcomes, as shown in Table 5. We observed consistent and rapid improvements in MCH outcomes over the period in which Rwanda registered impressive progress in coverage of RMCH (2005/06 - 2014/15). For example, when there was a remarkable increase in coverage from 48% to 68% (between 2005/06 and 2010/11), the Maternal Mortality Ratio (MMR) decreased by approximately 37%.

In the subsequent period - just over a five-year span (2010/11 – 2014/15) - when there was an improvement in coverage from 68% to a notable level of 72%, the MMR decreased by more than half (56%) from 476 to 210 maternal deaths per 100,000 live births. Rwanda's advances in healthcare coverage are also associated with an outstanding performance in child health, as reflected by a significant reduction in both infant mortality and under-five mortality.

17 Rwanda's current level of coverage (as of 2014/15) could not be compared to Uganda's coverage (as of 2014/15) because the most recent DHS in Uganda with available data was from 2011 at the time of analysis.

Table 5: Trends in healthcare coverage and health outcomes

Indicator	Country	Period			
		2000/01	2005/06	2010/11	2014/15
Coverage indicator					
Composite Coverage Index (CCI - %)	Uganda	-	52	58	-
	Rwanda	-	48	68	72
Health outcome indicators					
Maternal Mortality Ratio (Deaths @ 100,000 live births)	Uganda	505	418	438	-
	Rwanda	1071	750	476	210
Infant Mortality (Deaths @1,000 live births)	Uganda	88	76	54	-
	Rwanda	-	73	50	32
Under-five Mortality (Deaths @ 1,000 live births)	Uganda	152	137	90	-
	Rwanda	-	133	76	50

Source: DHS (2000/01 – 2014/15) and authors' computation based on DHS data (2005/06 – 2014/15)

Compared to Rwanda, Uganda's slow progress in coverage of RMCH is associated with poorer performance in MCH outcomes. First and foremost, in 2000/01, Uganda was better-off than Rwanda in terms of maternal health outcomes, with a lower MMR of 505 deaths per 100,000 live births compared to Rwanda's MMR, which was at an alarming rate of 1071 deaths per 100,000 live births. However, from that time (2000/01) to 2010/11, Rwanda managed to reduce its MMR by more than half (from 1071 to 476); meanwhile, Uganda registered a marginal reduction from 505 to 438. Even worse, considering the low coverage of RMCH in 2005/06 and 2010/11, we unfortunately observed a regression between 2005/06 and 2010/11 in Uganda, as shown by an increase in MMR from 418 to 438. The low level of healthcare coverage in Uganda is also associated with other poor health outcome indicators such as child mortality; for instance, with the low progress in coverage, we observed that infant mortality and under-five mortality are as high as 54 and 90 deaths per 1,000 live births, respectively, with slower progress (in terms of mortality reduction) over the reviewed period. Meanwhile, in Rwanda, the high level of coverage corresponds to relatively lower infant and under-five mortality of 50 and 76 deaths per 1,000 live births, respectively (Table 5), with a relatively faster reduction in mortality over the reviewed period.

3.3.1 Accelerating progress towards UHC: Policy lessons from the success of Rwanda

Rwanda's impressive level of coverage and/or progress towards UHC has been achieved through government policy efforts that have proven to be cogent. The advances have come as a result of strong government commitment, deliberate interventions with careful design and effective implementation of policies that are geared towards establishing a robust and/or resilient health system capable of making great strides towards UHC. This sub-section summarizes the results based on a review of Rwanda's health system and key policy interventions that the Rwandan government instituted that have yielded remarkable outcomes.

3.3.2 What did Rwanda do to increase coverage and realize better health outcomes?

To transform the health sector, the Rwandan government intervened by effectively implementing deliberate, comprehensive policies that targeted health system-related challenges that were hindering the delivery of UHC in the post-genocide period. As stated by Sayinzoga and Bijlmakers (2016), "Rwanda translated its policy intentions into a set of comprehensive and complementary actions embedded in a culture of performance management that are meant to strengthen the health system; and which have actually resulted in a steep increase in performance". The systematic reforms that Rwanda implemented addressed critical areas including health infrastructure development, Human Resources for Health, and health financing. These reforms are consistent with findings that demonstrate the primary drivers of changes in maternal and child healthcare coverage in Rwanda - the drivers include the health workforce, Performance-Based Financing (PBF), health insurance, and leadership and governance (Bucagu et al; 2012). The key reforms include the following:

(a) Public health education campaign

The Rwandan government established and effectively implemented a public education campaign system. The campaign focused on the importance of using modern healthcare services - for example, mother and child healthcare. The system was reinforced by levying penalties on women who failed to attend antenatal care and to deliver in health facilities. This provided an incentive and stimulated demand for mothers and children to use modern medical assistance, thereby improving the likelihood of increasing healthcare coverage.

(b) Health infrastructure development

The Rwandan government has made significant investments in health infrastructure development. First, deliberate efforts were made by the government to establish and equip health facilities to reduce physical distances to healthcare, as prescribed in its

national health policy. In comparison, Uganda has made some progress on this front as well (i.e., physical access to health facilities, HSDP, 2015), but more work still needs to be done to significantly reduce physical distances and to improve actual healthcare access by adequately equipping health facilities.

The government of Rwanda also invested in specially programmed mobile phones to strengthen the referral system. Here, community health workers (CHWs) are provided with phones to contact health facilities for referrals. This approach has strongly integrated health facilities with community systems. The strong integration is enabled through the use of mobile phone-based alerts and audit services for Maternal & Child Health and through RapidSMS, which links community health workers to health facilities (Farmer et al; 2013); this integration is reflective of a robust community healthcare system. Furthermore, increased investment in "waiting wards" for expectant mothers in rural health facilities significantly reduced the likelihood of accidental home delivery (births).

(c) Human Resources for Health (HRH)

Rwanda designed and effectively implemented a HRH strategic plan and programme. As a result, Rwandan health facilities including those in rural areas are fully staffed with critical cadres (e.g., skilled providers of childbirth). This staffing was made possible via effective recruitment campaigns and staff motivation and retention initiatives, as well as enforcement of performance disciplines. A performance-based financing system has been implemented by Rwanda to motivate healthcare workers by providing rewards for better patient care and follow-up and for improved primary healthcare performance indicators (such as delivery in health facilities and child immunization). This strategy has greatly improved access to (coverage) and use of MCH services. The government also implemented an ambitious HRH programme, which was launched in 2012 – a seven-year HRH plan meant for capacity building of HRH in ten priority specialties: internal medicine, paediatrics, obstetrics and gynaecology, surgery, anaesthesiology, family and community medicine, pathology, oncology, radiology, and emergency medicine.

Furthermore, the Rwandan government is effectively utilizing the Community Health Worker (CHW) model. CHWs are extensively trained and incentivized by the government to meet specified performance standards (e.g., maternal and child health targets). They are trained to diagnose and provide treatment for malaria, pneumonia, and diarrhoea. Their tasks also include health promotion efforts for family planning, antenatal care (ANC), immunization, and patient referral to health facilities. This model has significantly helped the Rwandan government extend coverage (reach) of healthcare (Farmer et al; 2013). By analogy, Village Health Teams (VHTs) are deployed in communities in Uganda to provide healthcare services at the community level and to coordinate referrals from the community to health facilities. However, the VHTs are ineffective, and others are inactive. This lack of effectiveness has occurred because they are not well-trained and incentivized, and therefore, they have inadequate capacity to effectively deliver the expected community-level healthcare services.

(d) Health financing.

As in Uganda, a significant amount of foreign aid is used to finance the health sector in Rwanda. However, the Rwandan government (both the central government and MoH) has a very strong level of commitment to financing healthcare using domestically mobilized resources. As reported by Farmer et al (2013), although Rwanda's per capita total health expenditure per year is similar to those of other low-income countries, Rwanda's progress is strongly dependent on its government's high level of spending on healthcare. For example, public spending on health by the Rwandan government reached as high as 20%, compared to Uganda's low public healthcare funding of less than 10% of the national budget. In addition, the Rwandan Ministry of Health has also made deliberate efforts to provide social support to expand healthcare access to

the poor and to strengthen the health system; these initiatives include incorporation of social support programmes such as financing of travel costs and providing food supplements in the national HIV/AIDS and TB treatment programmes.

At the policy level, Rwanda's health sector financing underwent a reform based on an effective implementation of the health financing policy, a policy framework that is lacking in Uganda. The health financing policy in Rwanda tackles healthcare funding in a comprehensive manner - including the use of government tax revenue and insurance schemes that are capable of covering both the formal and informal sectors of the economy. The overall aim of the policy is to ensure that quality essential health services are financially accessible to the entire population in an equitable, efficient, and sustainable manner using a results-based financing framework. The implementation of health insurance schemes is guided by the National Health Insurance Policy (NHIP) of Rwanda. Accordingly, the specific financing policy interventions that Rwanda implemented to expand coverage of healthcare include the following:

Social Health Insurance (SHI): Rwanda implements a SHI system that consists of two components, namely, insurance for the formally employed segment of the population (including their families) both in the public and private sectors and medical insurance for the military (military medical insurance). Private sector employers have the freedom to choose whether to be affiliated with the SHI scheme or to contract private insurance companies. Public workers contribute 15% of their basic salary (half is paid by the employers and half is paid by employees). For the military, the contribution is 22.5% of one's gross salary (17.5% is paid by the government, and each military member pays 5%). Some teachers and students are covered by health insurance schemes arranged by their school, institute or university (e.g., the National University of Rwanda). The SHI scheme (together with private schemes) covers approximately 6% of the Rwandan population. It is worth noting that the main policy challenge of the SHI scheme pertains to the inclusion of pensioners and their dependants. However, as a policy response, Rwanda's Social Security Policy of 2009 targets the integration of pensioners within the SHI scheme to address this challenge.

Community-Based Health Insurance (CBHI): The CBHI is a scheme operated under a partnership between the government and the community. It provides health insurance coverage to populations employed in rural areas and the informal sector. The scheme takes care of the majority of the poor in Rwanda and has significantly contributed to UHC in Rwanda, with a coverage of more than 90% of the population (Farmer et al; 2013). To avoid catastrophic health spending, especially by the poor (low-income) section of the population, the Rwandan government introduced and implemented a three-tiered premium contribution system in which the poorer contribute smaller premiums. The CBHI scheme includes an arm that targets revitalization of community participation, mobilization for health, empowerment of individuals and communities regarding their health, and involvement of individuals in decisions that affect their own health.

Private Health Insurance (PHI): As established by the Rwandan government, PHI is a third alternative for individuals who are not covered by the mandatory health insurance system (SHI and CBHI). Under PHI, privately registered companies (that are commercial in nature) provide insurance policies to private entities and their employees or individuals who prefer to use a private scheme.

(e) Provision of high-quality healthcare: The Rwandan government has prioritized delivering quality healthcare to its citizens. This priority is demonstrated in terms of respect for the opening and closing times of health facilities, high levels of hygiene in health facilities, and respect for patients among health workers. In contrast, the situation in Uganda is

characterized by a high level of absenteeism and a lack of respect of health facility opening and closing times, as well as low respect for or improper management of patients, especially in public sector health facilities.

In summary, the Rwandan government's stride in healthcare coverage and impressive health outcomes occurred broadly as a result of the coherent health sector policy reforms and utilization of a sector-wide approach to healthcare planning. The Rwandan policy reforms have been coherent (ODI, 2012) - for instance, a policy environment that favourably supported the use of community-based health workers alongside the National Health Insurance scheme (including CBHI) significantly improved the coverage and uptake of maternal health services. In terms of cross-sectoral planning and collaboration for health, the Rwandan Ministry of Health (MoH) collaborates with the Ministry of Education, Ministry of Gender, local governments, development partners, religious institutions, and community members to improve immunization coverage through school-based vaccination programmes.

The results of the Rwandan government's deliberate investments in an effective implementation of policy reforms are reflected in the expanded healthcare coverage and better health outcomes. For example, over the reform implementation period, Rwanda experienced the greatest reduction in HIV and TB mortality in the world as well as significant reductions in malaria-related deaths, maternal mortality, and the probability of under-five mortality (Farmer et al; 2013).

4. CONCLUSION AND RECOMMENDATION

This study aimed to achieve three specific objectives – first, to analyse the status of the critical health infrastructure needed to attain sustained progress towards UHC; second, to review Uganda's progress towards UHC; and lastly, to provide policy recommendations on how Uganda can accelerate its progress towards UHC. The analysis was conducted based on the joint WHO/World Bank Group indicator framework for monitoring service coverage towards UHC using data from the Demographic and Health Survey (DHS), HRH data from the IntraHealth – Uganda Country Programme, and administrative data from the Ministry of Health, as well as a country case study review. To maintain focus and ensure a manageable scope, the assessment of coverage was restricted to the intervention areas of reproductive, maternal, newborn, and child healthcare.

The findings show fundamental challenges to the critical health infrastructure needed to deliver UHC in Uganda. These challenges included spatial inequality in health facility population coverage, with the Eastern and Northern regions experiencing the least coverage; low private sector health facility establishments (investments) in the Northern and Eastern regions; distance to health facilities, which posed a barrier to healthcare access to some segments of the population (for instance, women of reproductive age); and limited functionality and availability of necessary infrastructure at the health facility level. Regarding HRH, low health workforce density was widespread, indicating that the existing health workforce is deficient and unable to expand population-based healthcare services. It is worth noting that the specific critical cadre gaps (for doctors, nurses and midwives) are not substantial; however, the overall health workforce density remains very low compared to the WHO standard for expanding population-based healthcare. Additionally, even if the staffing level is raised to 100% as per the set staffing norms for critical cadres, the health workforce density will still fall short of the recommended standards. This situation calls for the need to review the current staffing norms - especially for critical cadres, to recruit more critical health workers to satisfy the revised staffing norms, and to implement staff retention initiatives.

Regarding progress towards UHC in terms of reproductive, maternal, newborn, and child healthcare, there was an overall improvement in coverage over the reviewed period (2006-2011), although marginal.

More importantly, we found that increased healthcare coverage corresponded to better health outcomes; however, in Uganda, the overall coverage remains low, and disparities in healthcare intervention coverage exist across regions and socio-economic strata, which undermines the equity principle of UHC.

To accelerate Uganda's progress towards UHC, the following should be addressed:

- Investments in health infrastructure (to provide facilities that have the necessary equipment) should be undertaken to a greater extent, especially in regions with low health facility population coverage (e.g., the East and North). Efforts should also be directed to ensure the functionality of the health facilities in these regions by stocking them with the necessary medical commodities and equipment. Public Private Partnership (PPP) arrangements should be strengthened in these regions to enhance the health infrastructure.
- It is paramount for the current staffing norms to be reviewed, especially for critical cadres, and more critical health workers should then be recruited in order to satisfy the revised critical cadre staffing norms; effective staff retention initiatives should also be implemented. This review of the norms should take into account the recommended WHO standards, workload, and changes in health services as well as in health services demand and population. The government should thus increase efforts to make deliberate investments in HRH (including capacity building), for instance, using initiatives such as the HRH programme model in Rwanda; furthermore, a results-based financing model can be explored to motivate health workers and improve their performance as well as healthcare coverage and outcomes.
- Healthcare coverage for reproductive, maternal, newborn, and child health should be scaled up; during this process, interventions should aim to maintain the successes observed for immunization, and the existing gaps in lagging intervention areas should be addressed. These areas include family planning services, maternal health services (e.g., delivery at health facilities or with skilled birth attendants), and child health services, such as ORT and CPNM.
- Drawing policy lessons from Rwanda, Uganda should aim to institute a coherent set of health sector policy reforms that are effectively implemented and emphasize a health financing policy that is comprehensive enough to cover both the formal and informal sectors.

REFERENCES

Biodun, A. (2014). Universal Health, time to set up advocacy. 2014, October 24th

Boerma, J.T; Bryce, J; Kinfu, Y; Axelson, H; Victoria, C.G. (2008). Mind the gap: equity and trends in coverage of maternal, newborn, and child health services in 54 countdown countries. The Lancet, Vol. 371 April12, 2008.

Bucagu, M; Kagubare, J.M; Basinga, P; Ngabo, F; Timmons, B.K; Lee, A.C. (2012). Impact of health systems strengthening on coverage of maternal health services in Rwanda, 2000-2010: a systematic review. Reproductive Health Matters. 2012; 20(39):50–61.

Corsi, J; Subramanian, S.V. (2014). Association between coverage of maternal and child health interventions, and under-5 mortality: A repeated cross-sectional analysis of 35 sub-Saharan African countries. Global Health Action, Vol 7, 24765.

Cotlear, D; Nagpal, S; Smith, O; Tandon, A; Cortez, R. (2015). Going universal: How 24 developing countries are implementing Universal Health Coverage reforms from the bottom-up. Washington, DC. World Bank.

Deininger, K; Mpuga, P. (2005). Economic and Welfare Impact of the Abolition of Health User Fees: Evidence from Uganda. Journal of African Economies, Vol. 14, No. 1, pp. 55-91.

Ensor, T., & Cooper, S. (2004). Overcoming barriers to health service access: Influencing the demand side. Health Policy Planning, 19, 69–79.

Farmer, P.E; Nutt, C.T; Wagner, C.M; Sekabaraga, C; Nuthulaganti, T; Weigel, J.L; Farmer, D.B; Habinshuti, A; Mugeni, S.D; Karasi, J; Drobac, P.C. (2012). Reduced premature mortality in Rwanda: Lessons from success. BMJ, January 2013.

Global Health Initiative. (2009). A strategy for accelerating reductions in maternal and neonatal mortality: US Mission Uganda, integrated health team. Global Health Initiative Uganda.

GoU. (2009). National Health Policy II: Republic of Uganda, Ministry of Health.

Hazir, T; Begum, K; Arifeen, S; Khan, A.M; Huque, M.H; Kazmi, N; Roy, S; Abbasi , S; Rahman, Q.S; Theodoratou, E. (2013). Measuring coverage in MNCH: A prospective validation study in Pakistan and Bangladesh on measuring correct treatment of childhood pneumonia. PLOS Medicine. May 7th, 2013.

Jacobs, B., Ir, P., Bigdeli, M., Annear, P. L., & Damme, a. W. (2011). Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. Health Policy and Planning Advance Access, 1-13.

Kaija, D.O. and Okiira, O.P. (2007). Quality and Demand for Health Care in rural Uganda: Evidence from 2002/03 Household survey. Accessed from http://www.csae.ox.ac.uk/conferences/2007-edia-lawbidc/papers/428-kaija.pdf

Kaija, D.O; Okwi, P.O. (2014). Quality and demand for health care in rural Uganda: Evidence from 2002/03 household survey. AERC research paper, 214.

Kiwanuka, S.N; Ekirapa, E.K; Peterson, S; Okui, O; Rahman, M.H; Peters, D; Pariyo, G.W. (2008). Access to and utilization of health services for the poor in Uganda: A systematic review of available evidence. Transactions of the Royal Society of Tropical Medicine and Hygiene Vol. 102, pg 1067-1074.

Lancet. (2016). Implementing pro-poor universal health coverage. THE LANCET Global Health, 4(1), e14–e16.

Ministry of Health – MOH. (2000). Health Sector Strategic Plan 1999/2000 – 2004/2005. Ministry of Health, Kampala – Uganda.

Ministry of Health – MoH. (2005). Health Sector Strategic Plan II, 2005/06-2009/10: Republic of Uganda.

Ministry of Health – MoH. (2010): The Second National Health Policy: Promoting People's Health to Enhance Socio-economic Development. Republic of Uganda

MoH. (2014). Human Resources for Health Audit

Report: May, 2014.

Nicholson, D; Yates, R; Warburton, W; Fontana, G. (2015). Delivering Universal Health Coverage: A guide for policy makers. Report of the World Innovation Summit for Health (WISH) Universal Health Coverage Forum 2015.

Overseas Development Institute – ODI. (2012). Delivering maternal health. Why is Rwanda doing better than Malawi, Niger, and Uganda? Briefing paper #74, May 2012.

O'Donnell, O. (2007). Access to health care in developing countries: Breaking down demand side barriers. Cadernos de Sau´de Pu´blica, 23, 2820–34.

Orem, J.N. and Zikusooka, C.M. (2010). Health Financing reform in Uganda: How equitable is the proposed National Health Insurance Scheme. International Journal for Equity in Health 2010, 9:23.http://www.equityhealthj.com/content/9/1/23

Orem, J.N., Mugisha, F., Kirunga, C., Marc, J and Criel, B. (2011). Abolition of user fees: the Uganda paradox. Oxford journal, Vol. 26, Issue suppl.2.7, Pp ii4l- ii5l

O'Neil, K; Takane, M; Sheffel, A; Abou-Zahr, C; Boerma, T. (2013). Monitoring service delivery for universal health coverage: The service availability and readiness assessment. Bulletin of the World Health Organization 2013; 91:923-931.

Rasanathan, K., Montesinos, E. V., Matheson, D., Etienne, C., & Evans, T. (2009). Primary health care and the social determinants of health: essential and complementary approaches for reducing inequities in health. Journal of Epidemiology and Community Health.

Republic of Uganda. (2015). Health Sector Development Plan 2015/16 - 2019/20. Ministry of Health.

Sambo, L.G; Kirigia; J.M. (2014, 09 28). Investing in Health systems for Universal Health Coverage in Africa.

Sayinzoga, F; Bijlmakers, L. (2016). Drivers of improved health sector performance in Rwanda: a qualitative view from within. BMC Health Services Research. 2016: 16-123.

Ssengooba, F. (2004). Uganda's Minimum Health Care Package (MHCP): Rationing within the minimum. Makerere University Medical School.

Ssengooba, F. (2008). Uganda's minimum health care package: rationing within the minimum. Health Policy and Development (ISSN: 1728-6107) Vol 2 # 1.

Twikirize, JM and O'Brien, C. (2010). Why Ugandan rural households are opting to pay community health insurance rather than use the free health care services. Int J Soc Welfare 2012: 21: 66–78

Victoria, C.G; Barros, A.J; Axelson, H; Bhutta, Z.A; Chopra, M; Franca, G.V; Kerber, K; Kirkwood, B; Newby, H; Ronsmans, C; Boerma, J.T. (2012). How changes in coverage affect equity in maternal and child health interventions in 35 countdown to 2015 countries: An analysis of national surveys. The Lancet Vol 12, 61427-5

Victoria, C. G; Vaughan, J. P; Barros, F. C; Silva, A. C; Tomasi, E. (2000). Explaining trends in inequities: evidence from Brazilian child health studies. The Lancet, 356(9235), 1093–1098.

WHO. (2007). Strengthening health systems to improve health outcomes. WHO's framework for action. World Health Organization, Geneva – Switzerland.

WHO and World Bank. (2013). Monitoring progress towards Universal Health Coverage at country and global levels: A framework. Joint WHO/World Bank Group Discussion paper, December 2013.

WHO. (2015). Health in 2015: from MDGs to SDGs. The World Health Organization (WHO), December 2015.

World Bank. (1993). Investing in Health: The World Development Report. World Bank, Oxford University Press.

Zikusooka, C.M; Kwesiga, B; Lagony, S; Abewe, C. (2014). Universal Health Coverage Assessment – Uganda. Global Network for Health Equity (GNHE).

APPENDICES

Appendix 1: Staffing by level of health facility: 2008 - 2013

Level	2008			2009			2010			2013		
	N	F.P	S.G (%)	N	F.P	S.G (%)	N	F.P	S.G (%)	N	F.P	S.G (%)
HCII	11296	4051	64	11296	4051	64	13086	5476	61	14364	7096	51
HCIII	14872	6821	54	14872	6821	54	16207	8700	50	17746	13399	24
HCIV	7500	4104	45	7500	4104	45	7872	4790	47	8640	6734	22
Gen. Hospitals	7300	4550	50	7300	4550	50	7600	4800	46	7790	5313	33
Regional referral hospitals	3595	2513	30	3595	2513	30	5579	3437	44	4744	3820	19
District Health Office (DHO)	880	462	47	880	462	47	880	594	40	1155	938	19

Source: Data obtained from Intra-Health Uganda (2008 – 2013). N=Staffing norm, F.P=Filled position, S.G=Staffing gap

Appendix 2: Staffing – critical health cadres at national level (public sector): December 2013

Health cadre	Norm	Filled position	Gap	Density based on Filled position[18]	Estimated density based on set norms[19] (without consultants)	Estimated density based on set norms (with consultants)
Doctors	1296	936	28	0.71	0.86	0.87
Consultants	305	107	65			
Nurses	19946	16,584	17			
Midwives	6,061	4,607	24			
Clinical Officers	2,758	2,780	-1			

Source: Computed based on IntraHealth HRH data (2014) and UBOS population data[18][19]

Appendix 3: Select service coverage indicators by region (1995 – 2011), %

		FPS	SBA	ANC	DPT3	MSL	BCG	ORT	CPNM	IPT(2)
Uganda	1995	7.8	35.4	-	61.1	59.6	83.6	49.2	61.4	-
	2001	18.2	36.6	-	46.1	56.8	78.7	53.1	64.7	33.8
	2006	17.9	41.1	93.5	63.9	68.1	90.5	53.5	47.2	16.2
	2011	26	57.4	94.9	71.5	75.8	93.7	55.3	47.4	24.5
Central	1995	16.2	57.3	-	70.8	65.8	85.8	45.2	74.4	-
	2001	31.4	56.9	-	37.9	50.9	70.7	71.3	77.7	39.7
	2006	-	-	-	-	-	-	-	-	-
	2011	-	-	-	-	-	-	-	-	-
Eastern	1995	5.5	38.6	-	49.1	48	80.8	46.6	65.7	-
	2001	11.2	36.5	-	44.7	53.1	84.4	54.4	63.1	39.2
	2006	16.6	39.5	95.1	66.6	63.6	95.1	58.8	54	15.7
	2011	23.2	51.2	94.3	74.2	76.8	97.5	49.5	37.4	32.5

18 Cadres considered are Doctors, Nurses, Midwives, and Clinical Officers. If consultants are considered, the density is about 0.72
19 Same cadres as above

Northern	1995	2.5	20.6	-	47.7	51.5	82.7	58	53	-
	2001	15.4	24.5	-	44.9	57.9	78.2	49.5	63.4	30.4
	2006	8.1	29.9	93.6	67.1	79.2	96.3	63	41	11.2
	2011	23.4	51.9	98.7	73.4	72	94	61.4	43.6	24.3
Western	1995	6.9	22	-	74.9	72	85.3	45.1	56.2	-
	2001	13.6	21.7	-	57.7	66.9	81.2	35.5	53	23
	2006	13.9	29.8	93.8	70.7	75.3	91.7	47.9	46.6	21.8
	2011	26.8	55.9	95.9	77.6	81.7	95.4	41	68.6	29
Central1	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	24.7	50.6	89.7	51.7	59.9	76.8	57.7	55.2	13.3
	2011	30.7	61.7	87.8	66.4	75	85.2	60.4	53.9	20.7
Central2	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	30	51.1	93.1	63	67.2	88.4	56.7	46.5	12.6
	2011	30.7	69.1	94.1	61.7	70.7	94.5	62.9	51.8	23.2
Kampala	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	39.7	89.6	96.7	68.3	71.3	91	60.6	77.1	16.7
	2011	40.2	92.9	98	73.5	82	94.6	62.4	65.5	28.5
East Central	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	16.9	54.2	92.7	60.2	58.3	88.9	44.2	33.3	14
	2011	27.7	67.1	91.2	52.8	71.4	95.5	61.8	33.3	12.1
South West	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	18.1	31.3	91.4	61.3	67.4	86.5	38.8	45.4	24.6
	2011	25.1	40.3	97.6	79.2	71.4	85.9	38.9	39.4	22.8
West Nile	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	10.5	33.5	98.7	61.1	64.9	96.4	49.9	54.2	14.1
	2011	13.6	58.7	97.6	82	77.7	98.5	57.6	53.5	20.5
Karamoja	1995	-	-	-	-	-	-	-	-	-
	2001	-	-	-	-	-	-	-	-	-
	2006	0	15.4	92	66.1	79.4	95.8	56.7	39.9	5.9
	2011	7.4	27.1	96.6	89.5	90.6	99.8	82.1	29.8	28.2
Urban	1995	28.1	76.2	-	75.3	74.2	93.7	56.4	76.3	-
	2001	41.6	79.2	-	59.1	68.4	91.9	66.6	78.1	37.8
	2006	36.5	78.7	97.2	67.2	76.7	92	60	52.8	17.1
	2011	39.2	89.5	97.4	75.4	80.8	96.3	63.9	60	29.4
Rural	1995	5.1	30	-	59.4	57.8	82.4	48.4	60	-
	2001	14.7	31.5	-	44.5	55.3	77	51.8	63.4	33.2
	2006	15.1	36.3	93	63.5	67.1	90.4	52.9	46.7	16.1
	2011	23.4	52	94.4	70.8	75	93.3	53.9	45.6	23.7

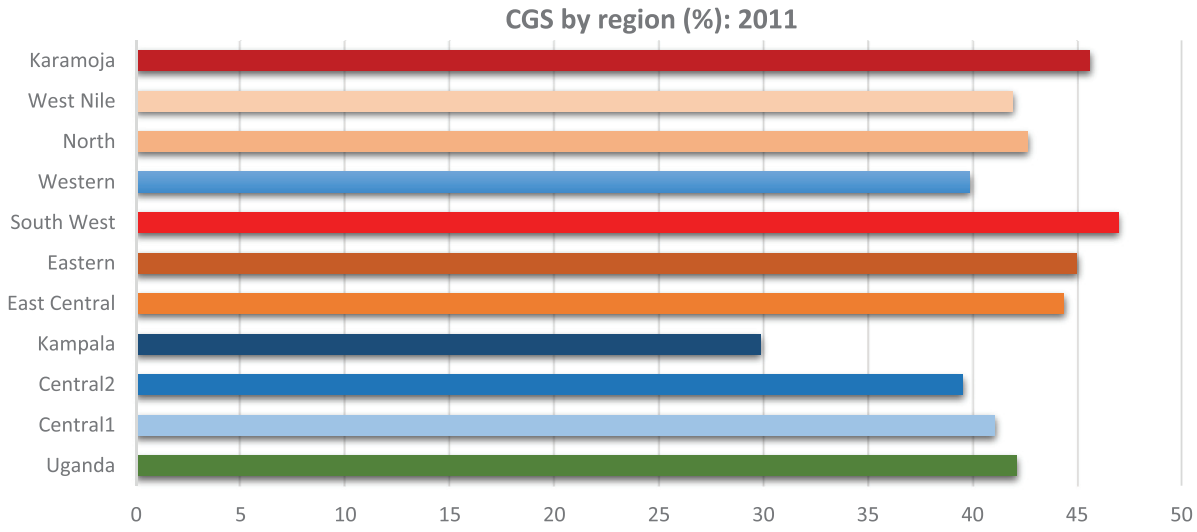
Source: Compiled based on UDHS (1995, 2001, 2006, & 2011)

Appendix 4: Summary of Ugandan policies undertaken overtime and how they relate to UHC

	Policy/Program	Short description of policy/program : Goal/ objective	Contribution to Universal Health coverage
1	Liberalization policy (1987)	The liberalization policy allows for the private sector to partner with the public sector to provide health services.	A diverse range of health service providers allowed for access to health facilities by the population
2	Decentralization policy (1987)	The 1995 constitution and the 1997 Local Government Act allowed local authorities to participate in health service delivery, recruitment and management of personnel for district health services, passing by-laws, budgeting, additional resource mobilization and allocation for health services	User fees were introduced in health facilities at district level, the likely outcome of this is the exclusion of the poor from accessing resource.
3.	First National Health Policy (1999/2000- 2009/10)	Objective was to reduce mortality, morbidity and fertility, and the disparities therein through ensuring access to minimum health care package.	Subsidize designated public health and essential clinical services that have visible externalities for the community
4.	Second National Health Policy (2010/11-2019/20)	Objective was to mobilize sufficient financial resources to fund the health sector programs while ensuring equity, efficiency, transparency and mutual accountability	One of the strategies included establishment of a National Health Insurance and other community health financing mechanism.
5.	Health Sector Strategic Plan I (2000/1-2004/5)	HSSP objectives: Ensuring effectiveness, efficiency, and equity in the allocation and utilisation of resources in the health sector Eliminate factors of cost and affordability as barriers to access to essential care. Attain by the end of the HSSP period, at least 75% of the minimum staffing norms at each level of the district health system	Abolishment of User-charges in 2001 in all government health facilities except for private wings in hospitals.
6.	Health Sector Strategic Plan II (HSSPII) 2005/06 – 2009/10	The objective for HSSP II was to ensure a network of functional, efficient and sustainable health infrastructure for effective health service delivery closer to the population.	It aimed at reducing morbidity and mortality through implementation of universal delivery of the Uganda National Minimum Health Care Package.
7.	The Health Sector Strategic and Investment Plan (2010/2011-2014/2015)	It defined a benefit package known as the Uganda National Minimum Health Care Package to operationalize the national health sector policy II.	Continue with the implementation of the Uganda National Minimum Health Care Package to guarantee free access of its population to a set of health services
8.	Health Sector Development Plan - HSD (2015/16-2019/20)	The objectives to be achieved include: • Contributing to the production of a healthy human capital for wealth creation through provision of equitable, safe and sustainable health services. • Increasing financial risk protection of households against impoverishment due to health expenditures. • Addressing the key determinants of health through strengthening inter-sectoral collaboration and partnerships • Enhancing health sector competitiveness in the region and globally	Emphasis of the plan is on accelerating Uganda's movement towards UHC.

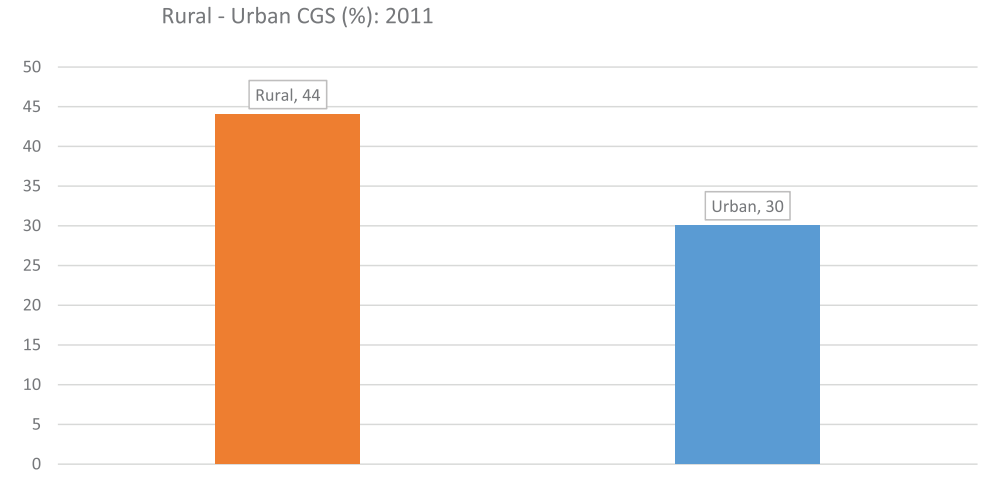
	Policy/Program	Short description of policy/program : Goal/ objective	Contribution to Universal Health coverage
9.	Proposed National Health insurance (NHI) policy	There is still no consensus around the policy or acceptance of the policy by all stakeholders There is also a proposal to put in place a solidarity fund as part of NHI to enable rich households subsidise the poor. The main limitation of NHI is envisioned in the fact that it would cover only the formal sector which is much smaller than the informal sector.	The proposed NHI scheme has potential for improving risk-pooling and increasing coverage of the population through the creation of an integrated risk pool, thereby reducing the current fragmentation

Appendix 5: Coverage Gap Score by region



Source: Author's computation based on UDHS data (2011)

Appendix 6: Coverage Gap Score by rural – urban location



Source: Author's computation based on UDHS data (2011)

EPRC RESEARCH SERIES

Listing of Research Series published since 2010 to date. Full text format of these and earlier papers can be downloaded from the EPRC website at www.eprc.or.ug

Series No.	Author(s)	Title	Date
135	Joseph MAWEJJE Paul C. E. LAKUMA	Macroeconomic Effects of Mobile Money in Uganda	June 2017
134	Madina Guloba Sarah Ssewanyana Elizabeth Birabwa	Rural Women Entrepreneurship in Uganda A synthesis report on policies, evidence, and stakeholders	May 2017
133	Madina Guloba Sarah Ssewanyana Elizabeth Birabwa	A pathway to social protection development in Uganda: A synthesis report	May 2017
132	Isaac M.B. Shinyekwa Francis M. Mwaura Patrick Apecu	A comparative Analysis of the Tourism Sectors in the East African Community: The Way Forward for Uganda	April 2017
131	Corti Paul Lakuma Musa Mayanja Lwanga	Linking budgets to plans in a constrained resource and institutional environment: The Case of Uganda	March 2017
130	Joseph Mawejje Ezra Munyambonera	Financing Infrastructure Development in Uganda	February 2017
129	Isaac M.B. Shinyekwa, Miriam Katunze	Assessment of the Effect of the EAC Common External Tariff Sensitive Products List on the Performance of Domestic Industries, Welfare, Trade and Revenue	September 2016
128	Isaac M.B. Shinyekwa Alex Thomas IJJO	Determinants of Domestic Food Price Differentials in Uganda: The Potential for and Constraints on Intra-County Trade	August 2016
127	Musa Mayanja Lwanga Annet Adong	A Pathway to Financial Inclusion: Mobile Money and Individual Savings in Uganda	March 2016
126	Gemma Ahaibwe Corti Paul Lakuma Miriam Katunze Joseph Mawejje	Socio Economic Effects of Gambling: Evidence from Kampala City, Uganda	January 2016
125	Joseph Mawejje Ezra Francis Munyambonera	Tax Revenue Effects of Sectoral Growth and Public Expenditure in Uganda	January 2016
124	Tilak Doshi Fred Joutz Paul Lakuma Musa Mayanja Lwanga Baltasar Manzano	The Challenges of Macroeconomic Management of Natural Resource Revenues in Developing Countries: The Case of Uganda	October 2015
123	Ssewanyana N. Sarah Ibrahim Kasirye	Progressivity or Regressivity in Uganda's Tax System: Implications for the FY2014/15 tax proposals	June 2015

Series No.	Author(s)	Title	Date
122	Gemma Ahaibwe Ibrahim Kasirye	Creating Youth Employment through Entrepreneurship Financing: The Uganda Youth Venture Capital Fund	May 2015
121	Ezra Munyambonera Musa Mayanja Lwanga	A Review of Uganda's Public Finance Management Reforms (2012 to 2014): Are the Reforms Yielding the Expected Outcomes?	April 2015
120	Joseph Mawejje Musa Mayanja Lwanga	Inflation Dynamics and Agricultural Supply Shocks in Uganda	March 2015
119	Munyambonera F. Ezra, Corti Paul Lakuma, Madina Guloba	Uganda's Tea Sub-sector: A comparative Review of Trends, Challenges and Coordination Failures	September 2014
118	Sarah N. Ssewanyana and Ibrahim Kasirye	Uganda's progress towards poverty reduction during the last decade 2002/3-2012/13: Is the gap between leading and lagging areas widening or narrowing?	June 2014
117	Mayanja Lwanga Musa and Mawejje Joseph	Macroeconomic Effects of Budget Deficits in Uganda: A VAR-VECM Approach	June 2014
116	Adong Annet, Muhumuza Tony and Mbowa Swaibu	Smallholder Food Crop Commercialization in Uganda: Panel Survey Evidence	June 2014
115	Barungi Mildred, Wokadala James and Kasirye Ibrahim	Implementing Universal Secondary Education Policy In Uganda: How Has The Public-Private Partnership Performed?	May 2014
114	Mwaura Francis, Okoboi Geofrey and Ahaibwe Gemma	Determinants of Household's Choice of Cooking Energy in Uganda	April 2014
113	Mawejje Joseph	Tax Evasion, Informality And The Business Environment In Uganda	December 2013
112	Shinyekwa Isaac & Othieno Lawrence	Trade Creation And Diversion Effects Of The East African Community Regional Trade Agreement: A Gravity Model Analysis.	December 2013
111	Mawejje Joseph & Bategeka Lawrence	Accelerating Growth And Maintaining Intergenerational Equity Using Oil Resources In Uganda.	December 2013
110	Bategeka Lawrence et ; UN Wider	Overcoming The Limits Of Institutional Reforms In Uganda	September 2013
109	Munyambonera Ezra Nampewo Dorothy , Adong Annet & Mayanja Lwanga Musa	Access And Use Of Credit In Uganda: Unlocking The Dilemma Of Financing Small Holder Farmers.	June 2013
108	Ahaibwe Gemma & Kasirye Ibrahim	HIV/AIDS Prevention Interventions In Uganda: A Policy Simulation.	June 2013
107	Barungi Mildred & Kasirye Ibrahim	Improving Girl's Access To Secondary Schooling A Policy Simulation For Uganda	June 2013
106	Ahaibwe Gemma, Mbowa Swaibu & Mayanja Lwanga Musa	Youth Engagement In Agriculture In Uganda: Challenges And Prospects.	June 2013
105	Shinyekwa Isaac & Mawejje Joseph	Macroeconomic And Sectoral Effects Of The EAC Regional Integration On Uganda: A Recursive Computable General Equilibrium Analysis.	May 2013

Series No.	Author(s)	Title	Date
104	Shinyekwa Isaac	Economic And Social Upgrading In The Mobile Telecommunications Industry: The Case Of MTN.	May 2013
103	Mwaura Francis	Economic And Social Upgrading In Tourism Global Production Networks: Findings From Uganda.	May 2013
102	Kasirye Ibrahim	Constraints To Agricultural Technology Adoption In Uganda: Evidence From The 2005/06-2009/10 Uganda National Panel Survey.	May 2013
101	Bategeka Lawrence, Kiiza Julius & Kasirye Ibrahim	Institutional Constraints To Agriculture Development In Uganda.	May 2013
100	Shinyekwa Isaac & Othieno Lawrence	Comparing The Performance Of Uganda's Intra-East African Community Trade And Other Trading Blocs: A Gravity Model Analysis.	April 2013
99	Okoboi Geoffrey Kuteesa Annette &Barungi Mildred	The Impact Of The National Agricultural Advisory Services Program On Household Production And Welfare In Uganda.	March 2013
98	Adong Annet, Mwaura Francis &Okoboi Geoffrey	What Factors Determine Membership To Farmer Groups In Uganda? Evidence From The Uganda Census Of Agriculture 2008/9.	January 2013
97	Tukahebwa B. Geoffrey	The Political Context Of Financing Infrastructure Development In Local Government: Lessons From Local Council Oversight Functions In Uganda.	December 2012
96	Ssewanyana Sarah & Kasirye Ibrahim	Causes Of Health Inequalities In Uganda: Evidence From The Demographic And Health Surveys.	October 2012
95	Kasirye Ibrahim	HIV/AIDS Sero-Prevalence And Socioeconomic Status: Evidence From Uganda.	October 2012
94	Ssewanyana Sarah and Kasirye Ibrahim	Poverty And Inequality Dynamics In Uganda: Insights From The Uganda National Panel Surveys 2005/6 And 2009/10.	September 2012
93	Othieno Lawrence & Dorothy Nampewo	Opportunities And Challenges In Uganda's Trade In Services.	July 2012
92	Kuteesa Annette	East African Regional Integration: Challenges In Meeting The Convergence Criteria For Monetary Union: A Survey.	June 2012
91	Mwaura Francis and Ssekitoleko Solomon	Reviewing Uganda's Tourism Sector For Economic And Social Upgrading.	June 2012
90	Shinyekwa Isaac	A Scoping Study Of The Mobile Telecommunications Industry In Uganda.	June 2012
89	Mawejje Joseph Munyambonera Ezra Bategeka Lawrence	Uganda's Electricity Sector Reforms And Institutional Restructuring.	June 2012
88	Okoboi Geoffrey and Barungi Mildred	Constraints To Fertiliser Use In Uganda: Insights From Uganda Census Of Agriculture 2008/09.	June 2012
87	Othieno Lawrence Shinyekwa Isaac	Prospects And Challenges In The Formation Of The COMESA-EAC And SADC Tripartite Free Trade Area.	November 2011
86	Ssewanyana Sarah, Okoboi Goeffrey & Kasirye Ibrahim	Cost Benefit Analysis Of The Uganda Post Primary Education And Training Expansion And Improvement (PPETEI) Project.	June 2011

51, Pool Road, Makerere University Campus,
P. O. Box 7841 Kampala, Uganda
Tel: +256414541023/4 Fax: +256414541022
Email: eprc@eprcug.org,

www.eprcug.org TWITTER:@EPRC_official www.facebook.com/EPRCUganda eprcug.org/blog