



## Review article

# Adopting localised health financing models for universal health coverage in Low and middle-income countries: lessons from the National Health Insurance Scheme in Ghana



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## ABSTRACT

The health-related Sustainable Development Goals (SDGs) and the Coronavirus Pandemic (COVID-19) have recently increased awareness of the need for countries to increase fiscal space for health. Prior to these, many Low and Middle-Income Countries (LMICs) had embraced the concept of Universal Health Coverage (UHC) and have either commenced or are in the process of implementing various models of health insurance in order to provide financial access to health care to their populations. While evidence of a relationship between experimentation with UHC and increased access to and utilisation of health care in LMICs is common, there is inadequate research evidence on the specific health financing model that is most appropriate for pursuing the objectives of UHC in these settings. Drawing on a synthesis of empirical and theoretical discourses on the feasibility of UHC in LMICs, this paper argues that the journey towards UHC is not a 'one size fits all' process, but a long-term policy engagement that requires adaptation to the specific socio-cultural and political economy contexts of implementing countries. The study draws on the WHO's framework for tracking progress towards UHC using the implementation of a mildly progressive pluralistic health financing model in Ghana and advocates a comprehensive discourse on the potential for LMICs to build resilient and responsive health systems to facilitate a gradual transition towards UHC.

## 1. Introduction

Countries across the world have either reformed or are in the process of reforming their health systems with the aim of achieving the health-related targets of the Sustainable Development Goals (SDGs). Yet, the Coronavirus pandemic has made the implementation of health financing reforms more compelling, both globally and within countries. To this end, countries have had to review their macro and micro-level policy programmes and budgets to satisfy the fiscal demands imposed by COVID-19 (Khan et al., 2020). The spread of the virus has meant that LMICs have to embrace or strengthen the implementation of Universal Health Coverage (UHC) to make health care financially accessible to their populations. This is important as evidence abound that out-of-pocket payment (OOP) for health results in drastic reductions in access to and utilisation of health care services in LMICs in particular (Akazili et al., 2017a, 2017b; Fenny et al., 2018; Navarrete et al., 2019), where a significant segment of the population is poor (Fosu, 2017; World Bank,

2018). Out-of-pocket payments (OOP) for health are direct payments made to health care providers by individuals at the time of services use (WHO, 2010). The OOP system creates inequities in financial access to health care services in which poor individuals and households regularly postpone medical treatment, resort to self-medication, or rely on cheap quack practitioners, often with potentially harmful consequences (Boom et al., 2004; Oppong, 2018; Mensah et al., 2010). OOP is not a popular financing option for the poor because reliance on it has led to close to half the world's population still lacking access to essential health services (WHO, 2017). Additionally, some 800 million people have been trapped in catastrophic health spending, and close to 100 million people are impoverished each year because of out-of-pocket health expenses (WHO, 2017).

In view of the need to reverse the foregoing statistics and improve the well-being of all, member-states of the United Nations (UN) have signed onto the SDGs, which include SDG 3 sub-goal, *achieve universal health coverage, including financial risk protection, access to quality essential health*

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care services and...safe, effective, quality and affordable essential medicines and vaccines for all. Thus, UHC reforms must clearly focus on reducing inequality in access to health services so that everyone has the same financial protection and access to the same range of health services according to need and not their ability to pay. UHC requires pooling arrangements that redistribute health resources to those in need, and governments have a role to play in ensuring that the principles of equity are adhered to when raising funds for health (WHO, 2010). UHC is also about the right to health; a shift from the idea of an employment or contributory basis for entitlement such that people are entitled to receive benefits by virtue of their citizenship and/or residency, not because they are formally employed or enrolled in a health insurance scheme (Averill and Marriott, 2013). Evidence of UHC benefits abound as research shows that people living in countries that have achieved UHC are healthier and live longer than those living without it (Ranabhat et al., 2018). Another important argument in favour of this policy is the idea that it is an investment in human capital and a foundational driver of inclusive and sustainable economic growth and development (Owusu, 2014; Tangcharoensathien et al., 2015; WHO, 2017).

Notwithstanding these benefits, LMICs have failed to achieve UHC through the implementation of traditional health financing models (Domapielle, 2014; Myint et al., 2019; Mcintyre et al., 2016), and there is inadequate evidence of an appropriate localised health financing model for pursuing the objectives of UHC in these settings. Through a review of theoretical and empirical literature this study explores LMICs' implementation of context-specific health financing mechanisms aimed at achieving UHC. The study draws on the WHO's framework for tracking progress towards UHC using Ghana's National Health Insurance Scheme (NHIS) as a test case to analyse the potential for localised financing systems to increase financial access to health care to poor populations and build resilient and responsive health systems to gradually transition towards UHC.

### 1.1. Research approach

The study employed an integrative review<sup>1</sup> of empirical and theoretical literature on financing UHC. Integrative review combines data from theoretical and empirical literature and has a wide range of purposes, such as the definition of concepts, review of theories and evidence, and analysis of methodological problems of a particular topic (Souza et al., 2010). This review process involved six phases in line with the framework developed by Ganong (1987). The first phase mainly defined the guiding question on the potential for home-grown methods of financing health to increase financial access and facilitate a gradual transition towards universal coverage in LMICs. This helped in determining the type of literature to search for the review. Once the relevant literature was determined, the next phase involved a broad search in databases such as PubMed, Google, Google Scholar and Scopus. The key search terms used included health financing, universal health coverage in low- and middle-income countries, equity in health, and national health insurance in Ghana. In the third phase, each article was appraised for quality with specific attention on the rigorousness of the methodological approach employed, clarity of the objective, and strength of the findings. A data extraction template was developed and used to extract relevant information in the fourth phase. At this point, I extracted relevant information such as names of authors, title, year of publication, country of focus, abstract, key findings, conclusions and important questions that concern UHC in LMICs were noted and organised into themes and used to develop the manuscript.

<sup>1</sup> Integrative review combines data from theoretical and empirical literature, and has a wide range of purposes, such as definition of concepts, review of theories and evidence, and analysis of methodological problems of a particular topic. SOUZA, M. T. D., SILVA, M. D. D. & CARVALHO, R. D. 2010. Integrative review: what is it? How to do it? *Einstein (São Paulo)*, 8, 102–106.

The literature was extracted mainly from journal articles, books, and published reports. The other sources of the review included policy papers, working papers, health reports, the WHO and World Bank data depositories. The study also relied on secondary analysis mainly from health reports and websites of the NHIS, GNHR, the Ministry of Health and the Ghana Health Service, all of which are appropriately cited and referenced. While an exploration of the prospects of successfully implementing UHC in LMICs remains the overall objective of the study, the NHIS in Ghana was selected as a reference home-grown health financing model for two key reasons; Ghana is a lower-middle income country that is currently implementing a home-grown health financing model known as the National Health Insurance Scheme (NHIS). It therefore meets the criteria of focusing on LMICs. The second eligibility criterion satisfied is that Ghana pioneered UHC implementation in Africa and remains a UHC leader in the region. The ensuing section presents key highlights of traditional health financing models within the context of UHC.

### 1.2. Financing UHC: a summary of traditional models

While a diverse range of actors is coming together in support of UHC, experts are concerned that the concept might be reduced to a “catchy sound bite”. Already, different health financing models are being adopted by governments of developing countries in pursuit of UHC (Averill and Marriott, 2013; Domapielle, 2014). However, some do not live up to the founding principles and objectives established in the WHO 2010 landmark report on health financing. For example, Private Health Insurance (PHI) does not support risk sharing. It instead employs the cream-skimming strategy by targeting people with lower-than-average risks and excluding those with high risks (Averill and Marriott, 2013; Borghi, 2011; Mcguire et al., 2021). PHI also reduces the degree of equity in the health system as a whole by removing well-off groups from pooling arrangements and by widening the disparities in the amount and quality of care available to different population groups (Mcguire et al., 2021; Wasem et al., 2018; Averill and Marriott, 2013). Community-based health insurance schemes (CHIS) in their fragmented state are only able to cover a very small proportion of the population (Domapielle, 2014; Umeh and Feeley, 2017; Asante et al., 2016). CHIS have other weaknesses including limited enrollments with small risk pools and limited cross-subsidisation (Borghi, 2011; Umeh and Feeley, 2017; Asante et al., 2016). The exclusion of very poor groups has been highlighted in the literature (Jütting, 2000; Arhin-Tenkorang, 2004; Ekman, 2004; Averill and Marriott, 2013; Borghi, 2011). Unlike PHI and CHI, tax-based financing is normally progressive and ensures vertical equity in the pooling arrangements. It is worth noting, however, that, whereas this has worked in developed countries, serious challenges remain in developing countries where the tax base of their economies are narrow and the capacity to enforce tax compliance or prevent extensive tax evasion is limited (Mcintyre and Meheus, 2014; Saleh, 2012; Schieber et al., 2012). In the case of Social Health Insurance (SHI) there are variations in the extent of coverage in high-income countries (HICs) and LMICs. HICs such as Germany, Luxembourg, Belgium, and France have achieved formal UHC through the implementation of SHI schemes. In low-income countries, however, SHI schemes are found to exclude populations in the informal sector, and the larger the informal sector the larger the coverage gap (Averill and Marriott, 2013). Tanzania achieved only 17 percent coverage after ten years of implementing SHI, and Kenya's National Health Fund (NHF) covered only 18 percent of the population after several decades of implementation (Averill and Marriott, 2013).

### 1.3. Ghana's NHIS: sources of revenue

The parliament of Ghana passed the National Health Insurance Act (NHIA) in August 2003 and it became operational in 2004 (Ramachandra and Hsiao, 2007). Its establishment was in fulfilment of a campaign promise of the New Patriotic Party during the 2000 general elections to replace health service user fees (cash and carry) with a pro-poor national

health insurance scheme (Agyepong and Adjei, 2008; Agyepong et al., 2011). In addition to the political support, the scheme's design process received technical inputs from the Ghana Health Service and Ghana's international development partners, including the WHO, DANIDA, DFID, ILO and some NGOs (Frempong et al., 2009; Agyepong and Adjei, 2008; Ramachandra and Hsiao, 2007). The design took into consideration the largely informal nature of the economy; one that is characterised by a narrow tax base with limited capacity to adequately mobilise funds for the health sector. The health sector was similarly weak in administrative and organisational capacity, infrastructure, human and other resources (Agyepong et al., 2011; Alhassan et al., 2016). From this background, planners of the scheme opted for a pluralistic financing framework that pools funds from diverse sources into the National Health Insurance Fund (NHIF). Tax revenue is the scheme's primary source of funds, with the bulk (74%) of this raised through the National Health Insurance Levy (NHIL), which is a 2.5 per cent levy on goods and services collected under the Value Added Tax (VAT). Social Security and National Insurance Trust (SSNIT) deductions, which is 2.5 percentage points of each person's contributions of the Basic Social Security Scheme comprise another 20 percent, and premium payments by informal sector members provide just 3 percent of the NHIF (Wang et al., 2017). The remaining 3 percent is raised through fees charged by the Authority in the performance of its functions and monies accruing under section 198 of the Health Insurance Act, 2006 (Act724). The funds are held in bank accounts approved by the Accountant-General and used mainly to pay health care providers for services rendered to NHIS subscribers. Other expenses paid from the fund include administrative support and general expenses of the NHIA and a 10 percent annual budgetary support to the Ministry of Health (NHIA, 2012b). It is worth noting that although the sources of funding have shifted away from donors and towards the government and households, Ghana's development partners occasionally support the NHIA and individual health facilities with grants, technical assistance, and concessional and commercial loans (Wang et al., 2017).

To ensure efficiency, claim payments are transferred directly from the NHIL to providers, not through the district health insurance schemes. Figure 1 illustrates the diverse sources and allocation of revenue of the NHIS.

By employing multiple financing mechanisms, particularly the VAT, the burden of health care expenditure is spread among a broader tax base while at the same time allowing room for cross subsidisation by enrolling contributors and non-contributors in the same pool. The contributions of poor households are partly or fully subsidised out of tax and pooled donor funds. There is risk equalisation between the individual district schemes and the scheme for formal sector workers (Mcintyre et al., 2005; Abiuro and De Allegri, 2015).

Although implementation has been met with challenges, studies have shown that increased enrolments in the scheme have had a commensurate increase in utilisation and improved health outcomes (NHIA, 2012a; MoH, 2016; Van Der Wielen et al., 2018; Blanchet et al., 2012). The governments' commitment to expanding financial access to health care is further reflected in the ongoing process to develop a national household register (NHR). This register aims to resolve an important implementation barrier; the absence of reliable income records to ascertain the income status of populations outside the formal sector of the economy. When completed, the register will provide reliable data on households' incomes to enable the NHIS to enforce Act 852, section 28 of the Legal Instrument, which establishes that informal sector membership contributions be graduated according to income (NHIA, 2012b). This will ensure equity in enrolments and adequate coverage of vulnerable groups such as indigents and the aged. The ensuing discussion draws on the WHO framework for tracking progress towards UHC to analyse Ghana's UHC journey thus far by examining the extent to which design and implementation of the NHIS satisfy the three core objectives of UHC - the range of available services, the proportion of the costs of those services that are covered, and the proportion of the population that is covered.

## 2. Discussion

### 2.1. Framework for tracking UHC

In discussing the framework that underpins the analysis of health systems' progress towards achieving the objectives of UHC, it is important to reiterate the exact meaning of UHC as established by the WHO in its 2010 landmark report on universal health coverage<sup>2</sup>. Thus, UHC will be achieved from the WHO's perspective when all people have access to quality health services (prevention, promotion, treatment, rehabilitation, and palliative care) without fear of falling into poverty (WHO, 2010). Transition to UHC, therefore, revolves around progress on three thematic fronts: the range of available services, the proportion of the costs of those services that are covered, and the proportion of the population covered (WHO, 2010). These three themes provide the framework for analysing how far the NHIS in Ghana has transitioned towards achieving UHC's objectives and providing insights into the needed innovation and adaptation for promoting equity in health and the risk sharing principle of UHC in LMICs. This analysis section commences with the range of services available to clients under the NHIS.

### 2.2. The range of services available

Whereas this can be analysed from diverse perspectives, from a strictly public health lens, a UHC package should include a comprehensive spectrum of health services available in the right quality and quantity, and the delivery is in harmony with the cultural values and sensitivities of clients (WHO, 2010). Countries as diverse as Brazil, France, Japan, Thailand, and Turkey have successfully relied on UHC implementation for improving the health and welfare of their populations, which laid the foundation for economic growth grounded in the principles of equity and sustainability. However, the key challenge of limited fiscal space makes the attainment of this objective a difficult one for LMICs (Maeda et al., 2014). To get around this challenge, a variety of proposals have been put forward; and, for some scholars, the focus of health policy in developing settings should be the provision of essential health services that cover priority health needs for which there are effective low-cost interventions (Schieber et al., 2012; Sachs, 2012). For others, priority should be on disease-specific interventions in line with the health-related SDGs (Kieny and Evans, 2013; WHO, 2013). Whereas proponents of the latter contend that it can improve health and reduce health system costs at the same time, critics argue that instead of creating a fragmentation of the health system, public health policy must adopt holistic approaches and initiatives that aim at strengthening the entire health system (Adam et al., 2012). The fourth and final view advocates the provision of primary health care to all as a feasible and sustainable UHC approach (Stuckler et al., 2010; WHO, 2010; WHO, 1978; Yates, 2009). The latter relates to this review on three fronts. Firstly, it resonates with the *Declaration of Alma-Ata 1978*, which "calls for urgent and effective national and international action to develop and implement primary health care throughout the world and particularly in developing countries in a spirit of technical cooperation and in keeping with a New International Economic Order" (WHO, 1978:3). Secondly, it is in tune with the Sustainable Development Goals (SDGs), specifically goal 3, which entreats countries to "ensure healthy lives and promote wellbeing for all at all ages". Within this health goal, a specific target for UHC has been proposed: "achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all" (WHO, 2015). Most significantly, it fits into the policy objective of the Ghana Health Service (GHS) and the National Health Insurance Scheme (NHIS), which aims to ensure that every resident of Ghana has access to basic

<sup>2</sup> Health systems financing: The path to universal coverage. World health report 2010.

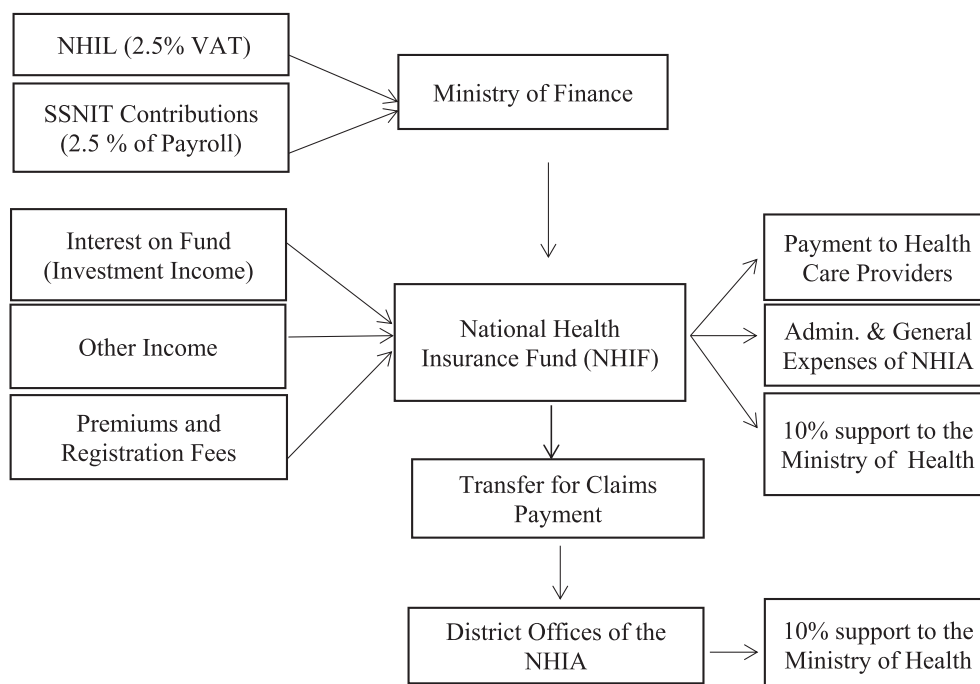


Figure 1. Revenue sources and allocation (Act 852) (NHIA, 2012).

quality healthcare without financial hardship (GHS, 2019; NHIA, 2012b).

The range of services provided under the NHIS are reflected in its benefits package. This covers about 95 percent of the burden of diseases (BoD) in Ghana (Witter and Garshong, 2009; Wang et al., 2017). As shown in Table 1, these health services range from outpatient to public health services funded under special programmes.

Whereas this benefits package has been described as generous and satisfies an important objective of UHC, it has attracted criticisms. The most immediate of these is the attempt by some provider facilities to formalised out-of-pocket payments and co-payments for medicines and services covered by the NHIS. They blame this behaviour on the scheme's long delay of several months in claims reimbursement and inadequate reimbursement rates that result in the inability of facilities to stock adequate quantities of medicines covered by the NHIS (Agyepong et al., 2016). Although this finding might not reflect the implementation of the scheme in some health facilities in the country, it brings to the attention of policymakers and implementers that the benefits of the scheme as provided on paper are not provided in the right quantities qualities in practice. This situation sometimes serves as a major source of client dissatisfaction and disinterest in joining the scheme (Agyepong et al., 2016). For instance, research that analysed the benefits package in relation to Ghana's fiscal space for health concluded that it is excessively generous and not financially sustainable in the long term should the exempt population increase beyond the threshold that guarantees its financial liquidity (Schieber et al., 2012; Witter and Garshong, 2009). Another criticism associated with the package is cost escalation beyond financial sustainability caused by the scheme's primary focus on funding curative care while paying little attention to preventive care (Apoya and Marriott, 2011; Schieber et al., 2012; NHIA, 2009). Between 2006 and 2008, when claims payments for curative health were skyrocketing, the government's subsidy for preventive health leveled off in real terms in 2006 and 2007 and dropped in 2008 (NHIA, 2009). The concern is that by only reimbursing curative health care, the NHIS does not encourage district schemes and health facilities to incorporate preventive health care into their services. The end product is likely to be an unwelcome increase in health problems, resulting in increased NHIS and the health sector costs. The other criticism is the specified minimum benefit

package that all district-wide schemes should adhere to. In connection with this, provision has not been made to absorb the cost of treating conditions arising from pandemics, such as the coronavirus, and a basic health service such as ambulance service, and medical devices such as hearing aids, medicated glasses, and dentures are excluded. Table 2 presents a detail list of disease conditions not covered by the benefits package.

Some of the excluded medical devices are commonly used by vulnerable elderly people and their exclusion raises concern about the scheme's genuine commitment to the equity objectives of UHC. These criticisms reinforce the need for further debate to arrive at findings that will trigger policy reform for making the benefits package more equitable without risking the scheme's financial sustainability. The next section analyses the proportion of the costs of services covered by the NHIS.

### 2.3. The proportion of the costs of services covered

Moving away from the range of services that are available to users, UHC also requires that health systems deliver on equity by ensuring that users are protected against the economic consequences of ill health (Palmer et al., 2004; Xu et al., 2003; WHO, 2005). The WHO observes that the key to protecting people from financial hardship is to ensure that the largest share of funds for the health system is prepaid, that barriers to the redistribution of these funds are reduced to the minimum, and that out-of-pocket (OOP) payments at the time of use is also reduced to reasonable levels (WHO, 2015). OOP is the most regressive system of financing health care (Borghi, 2011; McIntyre et al., 2005; Mills et al., 2012; WHO, 2005), and while using OOP payment to fund health systems has a number of disadvantages, one of the most important of them is that it prevents the poor from seeking care when they need it (Apoya and Marriott, 2011; Averill and Marriott, 2013; WHO, 2005; WHO, 2010). The two most commonly used indicators of financial hardship are catastrophic health expenditure, and impoverishing health expenditure. One of the ways to define catastrophic health expenditure is that it exceeds 25% of total household expenditure (WHO, 2005). However, it has to be clarified that catastrophic health expenditure does not necessarily lead to impoverishment in the sense of pushing a household below a poverty line. Well-to-do households, for example, might be able to pay expensive

**Table 1.** Benefits package of the NHIS.

<b>1. Outpatient Services</b>
<ul style="list-style-type: none"> <li>■ Consultations including reviews: these include both general and specialist consultations</li> <li>■ Requested investigations (including laboratory investigations, x-rays, ultrasound etc.) for general and specialist out-patient services</li> <li>■ Medication (prescription drugs on National Health Insurance Scheme's drugs list, traditional medicines approved by Food and Drugs Board and prescribed by accredited practitioners)</li> <li>■ Out-patients/Day surgical operations (e.g., hernia repairs, incisions and drainage etc.)</li> <li>■ Out-patient physiotherapy</li> </ul>
<b>2. Inpatient Services</b>
<ul style="list-style-type: none"> <li>■ General and specialist in-patient care</li> <li>■ Requested investigations (including laboratory investigations, x-rays, ultrasound scanning etc.) for in-patient care</li> <li>■ Medication (prescription drugs on National Health Insurance Scheme's drug list, blood and blood products)</li> <li>■ Cervical and breast cancer treatment</li> <li>■ Surgical operations</li> <li>■ In-patient physiotherapy</li> <li>■ Accommodation (General Ward)</li> <li>■ Feeding (where available)</li> </ul>
<b>3. Oral Health Services</b>
<ul style="list-style-type: none"> <li>■ Pain relief (e.g., incision and drainage, tooth extraction, temporary relief)</li> <li>■ Dental restoration (simple amalgam filling, temporary dressing)</li> </ul>
<b>4. Eye Care Services</b>
<ul style="list-style-type: none"> <li>■ Refraction</li> <li>■ Visual fields</li> <li>■ A-scan</li> <li>■ Keratometry</li> <li>■ Cataract removal</li> <li>■ Eye lid surgery</li> </ul>
<b>5. Maternity Care</b>
<ul style="list-style-type: none"> <li>■ Antenatal care</li> <li>■ Deliveries (normal and assisted)</li> <li>■ Caesarean section</li> <li>■ Postnatal care</li> </ul>
<b>6. Emergencies</b>
<ul style="list-style-type: none"> <li>■ All emergencies shall be covered. These refer to crisis health situations that demand urgent intervention. They shall include:</li> <li>■ Medical emergencies</li> <li>■ Surgical emergencies (including brain surgery due to accidents)</li> <li>■ Paediatric emergencies</li> <li>■ Obstetric and gynaecological emergencies (including caesarean section)</li> <li>■ Road traffic accidents</li> <li>■ Dialysis for acute renal failure</li> </ul>
<b>7. Public Health Services Funded under Special Programmes</b>
<ul style="list-style-type: none"> <li>■ Immunisation</li> <li>■ Family planning</li> <li>■ In-patient and out-patient treatment of mental illness</li> <li>■ Treatment of Tuberculosis, Onchocerciasis, Buruli Ulcer, Trachoma</li> <li>■ Confirmatory HIV test for AIDS patients</li> </ul>

(NHIA, 2012b).

medical bills, and yet do not forgo consumption of basic household needs such as children's schooling (Mcintyre et al., 2009). On the other hand, impoverishing expenditure is an expenditure that pushes households into poverty or the extreme form of it. From the World Bank's point of view, impoverishing expenditure occurs when household consumption slips below the international poverty line of US\$ 1.25 or US\$ 2.00 per day per capita, at purchasing power parity (World Bank, 2015; WHO, 2005).

Analysis of the proportion of the costs of services covered by the NHIS produced mixed findings. Whereas in theory, all the services in the benefits package are fully covered, in practice, however, significant equity gaps exist both in terms of the costs of enrolling in the NHIS (vertical equity) and costs associated with utilisation of health care (horizontal equity). Domapielle et al. (2020) observe that rural residents suffer a higher burden of the costs of enrolling in the NHIS than their urban counterparts. This, they argue, arises in part from flat-rate contributions

**Table 2.** List of excluded disease conditions.

<b>Exclusions</b>
The following health care services are not covered under the NHIS:
<ul style="list-style-type: none"> <li>■ Rehabilitation other than physiotherapy.</li> <li>■ Appliances and prosthesis including optical aids, hearing aids, orthopaedic aids and dentures.</li> <li>■ Cosmetic surgeries and aesthetic treatment. However, reconstructive surgery, such as is performed on burns patients, is covered.</li> <li>■ HIV antiretroviral medicines.</li> <li>■ Assisted reproduction, e.g. artificial insemination and gynaecological hormone replacement therapy.</li> <li>■ Echocardiography (a painless test that uses sound waves to create moving pictures of the heart to give information about the size and shape of the heart and how well it is working).</li> <li>■ Photography (photographs taken in clinics/hospitals to give visual records of patients' condition and operations to track progress of treatment for medical files of the patient).</li> <li>■ Angiography (a procedure where a dye is injected into the blood vessels and a photograph of the vessel is taken).</li> <li>■ Orthoptics (diagnosis and treatment of defective eye movements and coordination).</li> <li>■ Dialysis for chronic kidney failure.</li> <li>■ Heart and brain surgery other than those resulting from accidents.</li> <li>■ Cancer treatment other than cervical and breast cancer.</li> <li>■ Organ transplantation.</li> <li>■ Medicines that are not on the NHIS Medicines List.</li> <li>■ Diagnosis and treatment abroad.</li> <li>■ Medical examinations for purposes of employment, school admissions, visa applications, driving license etc.</li> <li>■ VIP ward accommodation.</li> <li>■ Mortuary services.</li> </ul>

(NHIA, 2012b).

levied on populations in the informal sector of the economy and inflexible terms of payment of these contributions. The foregoing constitutes vertical inequity and contradicts Act 852, section 28 of the legal instrument that established the NHIS, stating that contributions by populations in the informal sector be graduated according to income levels in order to ensure vertical equity in the scheme's contribution system (NHIA, 2012b). The scheme's vertical equity objective is a deliberate strategy to extend financial health protection at a cost that is commensurate with users' income. McClelland (1991) observes in this regard that the consequences of paying flat rate contributions on inflexible terms can be catastrophic for poor households. In rural areas, for instance, where a significant proportion of the population is employed in seasonal subsistence agriculture and flat rate contributions might result in catastrophic spending, the incidences of adverse selection and moral hazards have become common (Domapielle et al., 2020). For some scholars however, the failure to implement Act 852 cannot be blamed squarely on implementers of the NHIS but on the lack of reliable income records for populations that work outside the formal sector (Averill and Marriott, 2013; Borghi, 2011). There is the need to eliminate vertical inequity in the NHIS enrolment, and this will take a two-stage process: in the first stage, a redesign of the scheme's fee payment structure is required to reflect the categorisation of households outlined in the National Household Register (i.e., extremely poor, poor and non-poor). Once reliable income records of households are known, the next step will involve a strict implementation of Act 852, section 28 of the LI establishing the NHIS, which stipulates that contributions from subscribers in the informal sector be graduated according to income.

Aside from vertical inequity, there is also evidence of horizontal inequity in the distribution of the cost of healthcare between urban and rural populations under the NHIS. This is observed regarding the cost of transportation and costs associated with food and lodging when rural residents are on referral from primary health facilities within their localities to a district or a municipal hospital for further treatment. Domapielle et al. (2020) found in their assessment of horizontal equity in the NHIS that the costs of travelling to the Jirapa Hospital (referral district hospital) for care were perceived to be unaffordable to a large

number of rural dwellers wishing to access healthcare. On the contrary, however, transportation costs did not impede board access to care in the urban area because the health facilities in Jirapa are centrally located and accessible to users. Unlike users in rural areas, urban residents who visit the municipal hospital spend little on transport, even though they tend to have higher incomes than their rural counterparts. This is consistent with the findings of previous research that found high costs of transportation as an impediment to easy healthcare access in rural areas (Hjortsberg and Mwikisa, 2002; Nesbitt et al., 2016; Macha et al., 2012; Mills et al., 2012; Masters et al., 2013; Johnson et al., 2015). These studies found common ground in their conclusion that although rural populations are more susceptible to illnesses, there is an inadequate health-related infrastructure where they live, which makes them pay more in travel costs and thus utilise health services to a lower extent than urban residents. There is, therefore the need to improve infrastructure and human resources for health in rural areas to provide affordable quality healthcare to residents. Improving the provision of outreach services in mobility-constrained communities as well as including ambulance services in the NHIS benefits package would help reduce horizontal inequity in access to health care. The final segment of the analysis discusses the proportion of the population covered.

#### 2.4. The proportion of the population covered

Lastly, some scholars, drawing on the rights to health perspective, interpret UHC to mean that people have “equal or same entitlements” to the benefits of a health system (Averill and Marriott, 2013; McIntyre et al., 2009). Here, UHC is defined in relation to people's rights to health, as the absence of systemic exclusion of vulnerable population groups from public funded health systems and the ability of all residents to enjoy the same entitlements or benefits of public health services, irrespective of their nationality, race, sexual orientation, gender, socio-economic status or place of residence (Averill and Marriott, 2013; McIntyre and Mills, 2012; WHO, 2010). The concept of equity is embedded in most conceptual definitions of Universal Health Coverage. An example is the idea of income and risk cross-subsidisation whereby the rich cross-subsidise the poor, whilst the healthy cross-subsidise the sick (Borghi, 2011; McIntyre and Mills, 2012; Goudge et al., 2012). While the desirability and pursuit of the objectives of equity in UHC is unquestionable, Hickey and Du Toit (2007) caution against adverse inclusion, the situation where official entitlements will be offered to all people even when the existing health system may not be able to meet the health demands of the population. This caution is important, particularly for LMICs whose health systems are not robust enough to provide health for all their populations. In these settings, therefore, pragmatic financing approaches ought to be adopted to increase financial access to health care in consonance with the strengths and weaknesses of the health system, and the fiscal space for health.

The proportion of the population covered is reflected in the active membership. Total active membership of the scheme increased from 8.2 million in 2010 to 11.3 million in 2015. It however, decreased from 11 million in 2016 to 10.2 million in 2017 (Nsiah-Boateng and Aikins, 2018). Enrolment for the succeeding years has increased from 10.8 million in 2018 to over 12 million in 2019. The 2019 figure represents 40 percent of the total population; informal sector contributors constitute 34.1 percent, an increase from 31.5 percent in 2018, and indigents constitute 5.6 percent, an increase from 3.7 percent in 2018 (NHIS, 2020). These enrolment statistics point to two parallel directions in terms of coverage of the population: the first being that of progress in the extension of financial protection against the cost of illness. This is because of available empirical evidence supporting the hypothesis that an increase in NHIS membership results increases the utilisation of healthcare (Van Der Wielen et al., 2018; Blanchet et al., 2012; Nsiah-Boateng and Aikins, 2018). When conditioning on observable characteristics for all matching approaches, a positive effect of NHIS enrolment on the utilisation of care was found. In all instances, significant

differences were found in inpatient and outpatient care between insured and non-insured. The difference in outpatient care use between NHIS members and non-members was around 9%, with NHIS members using more inpatient care than non-members. Thirteen percent of older adults enrolled in the NHIS used inpatient care in the previous 12 months compared with only 7% who were not insured. Additional investigations disaggregated the analysis into different age groups to see the effect of the premium exemption for older adults aged 70 plus. The results supported the above analysis and indicated that insured individuals aged 70 or over were more likely to use both inpatient and outpatient care (Van Der Wielen et al., 2018).

The second direction is that of scepticism in the scheme's potential to transition to universal coverage in the shortest possible time. This arises partly because enrolment has not exceeded 40 percent of the population since its inception in 2005 and increases in active membership have not been consistent over the period. Additionally, the 5.6 coverage of indigents is low given that an estimated 23.4 percent and 8.2 percent of Ghana's population is living in poverty and extreme poverty, respectively (GSS, 2018). Scholars have attributed these findings to factors that relate to the user, the provider and the scheme. For example, Wipf and Garand (2010) assert that in voluntary health insurance schemes such as the NHIS individuals are more willing to join at the initial stages, especially when the benefits package is attractive. However, apathy sets in when the anticipated benefits are not delivered. Other factors common among rural populations are limited knowledge of the scheme caused by ineffective education and sensitisation, cultural norms and poverty (Fenny et al., 2016; Wipf and Garand, 2010). Adverse selection<sup>3</sup> has also been identified as contributing to low enrolment and, according to Nsiah-Boateng and Aikins (2013) and Wipf and Garand (2010), insurance schemes with low participation and high turnover are more vulnerable to adverse selection, which might lead to reduced revenue, high claims payment and increased administrative spending. They observed that pregnant women are more likely to indulge in this negative practice because they are exempted from paying contributions to the scheme. Another group of people identified in this unhealthy practice is seasonal crop farming households who, as a result of the seasonality of their income, are able to enrol or renew membership of the scheme only after they have harvested and sold their farm produce (Domapielle, 2015; Owusu et al., 2012). Lastly, lengthy waiting times at registration centres, occasional shortage of registration materials, lengthy delays in payment of provider claims, and perceived poor quality of healthcare provided to NHIS subscribers have also been identified as barriers to the scheme's journey towards universal coverage (Kusi et al., 2015; Fenny et al., 2016; Dror et al., 2016; Atinga et al., 2015; Mladovsky, 2014). Whereas some of the solutions to these coverage challenges can be drawn from best practices, as in the case of Thailand's pluralistic financing model, there is certainly the need for further research to adequately inform the design of a new strategy to address user-related issues on adverse selection of the scheme.

### 3. Summary

#### 3.1. Rationalising the adoption of home-grown financing models

This summary section reflects on the implementation of the NHIS since its inception in 2003 and agrees largely with the literature that UHC is not a ‘one size fits all process’ but an important health policy undertaking whose success hinges on three factors: strong and

<sup>3</sup> Adverse selection is a situation where individuals only enrolled in the scheme when they need health-care services and refuse to renew their membership after receiving care NSIAH-BOATENG, E. & AIKINS, M. 2018. Trends and characteristics of enrolment in the National Health Insurance Scheme in Ghana: a quantitative analysis of longitudinal data. *Global health research and policy*, 3, 1–10.

resilient political support and commitment to the objectives of UHC; favourable economic outlook; and a strong capacity of the health care system to deliver the equity objectives of UHC. Perhaps the most important of these is long-term political commitment. Maeda et al. (2014) argue that adaptive and resilient leadership is needed to mobilise and sustain broad-based social support while managing a continuous process of political compromises among different interest groups without derailing the goals of UHC. The NHIS, as indicated earlier, is a product of a manifesto promise of the New Patriotic Party to replace health service user fees introduced in 1985 under the Structural Adjustment Programmes (SAP) with national health insurance as a more equitable financing system. As a result, its implementation enjoyed arguably the needed political support in terms of mobilising funding and assembling technical experts to design the programme and commence implementation. However, political commitment to the goal of UHC must be backed by a robust economy; a broader tax-base; a strong capacity to adequately mobilise taxes; and a functional health system reflected by strong health infrastructure and a coordinated approach to scale up health workforce to meet the increasing demand for health services that come along with expansion of coverage (ILO, 2008; Schieber et al., 2012; Maeda et al., 2014). But as Maeda et al. (2014) argued, “Scaling up goes beyond just adding new staff: It should take into account labour market conditions and workers’ own career aspirations and working environment”. Unfortunately, these fundamental requirements are either absent or limited in LMICs (Barrientos and Hulme, 2016; Niño-Zarazúa et al., 2012). In Ghana, for example, GNI per capita (Atlas method) is estimated to be US\$ 2,220, and fiscal performance for the first half of 2019 showed an overall budget deficit (on cash basis) of 3.3% of GDP higher than the target of 2.9% of GDP (World Bank, 2020). Per capita health expenditure is approximately US\$ 66.74; and infrastructure and human resource shortages with one doctor to 8481 people (GHS, 2017). Increased utilisation that has accompanied rising health insurance coverage over the years with no commensurate increase in infrastructure, human resource, equipment and supplies is overburdening the limited health sector infrastructure, human and other resources. This makes the quest for universal health coverage in Ghana and LMICs in general a difficult objective to attain.

On the back of these lessons LMICs already implementing or have the political will are encouraged to approach the implementation of UHC from a pragmatic perspective as follows: firstly, critically learn from the UHC implementation experiences of countries in similar economic and social conditions; secondly, learn from developed and emerging economies that have successfully achieved UHC and adopt relevant best practices (ILO, 2008); thirdly, develop and implement financing models that will work within their country context (Agyepong et al., 2011); and finally, gradually build resilient and responsive health systems to facilitate the move towards UHC (Abihiro and De Allegri, 2015). This approach, along with sustained economic growth, has the potential of expanding health insurance coverage to the population while at the same time improving service delivery capacity for UHC. The journey towards UHC should therefore be viewed as an evolving process of identifying gaps in the three thematic dimensions<sup>4</sup> and designing practicable strategies in accordance with the WHO framework for implementing UHC and for achieving SDG 3 sub-goal, which is: “achieve universal health coverage, including financial risk protection, access to quality essential health care services and...safe, effective, quality and affordable essential medicines and vaccines for all.”

<sup>4</sup> The three thematic dimensions for tracking progress towards UHC include: the range of services that are available, the proportion of the costs of those services that are covered, and the proportion of the population that is covered (WHO, 2010).

## Declarations

### Author contribution statement

Maximilian Kolbe Domapielle: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

## References

- Abihiro, G.A., De Allegri, M., 2015. Universal health coverage from multiple perspectives: a synthesis of conceptual literature and global debates. *BMC Int. Health Hum. Right* 15, 17.
- Adam, T., Hsu, J., De Savigny, D., Lavis, J.N., Røttingen, J.-A., Bennett, S., 2012. Evaluating health systems strengthening interventions in low-income and middle-income countries: are we asking the right questions? *Health Pol. Plann.* 27, iv9–iv19.
- Agyepong, I.A., Abankwah, D.N.Y., Abroso, A., Chun, C., Dodoo, J.N.O., Lee, S., Mensah, S.A., Musah, M., Twum, A., Oh, J., 2016. The “Universal” in UHC and Ghana’s National Health Insurance Scheme: policy and implementation challenges and dilemmas of a lower middle income country. *BMC Health Serv. Res.* 16, 1–14.
- Agyepong, I.A., Adjei, S., 2008. Public social policy development and implementation: a case study of the Ghana National Health Insurance scheme. *Health Pol. Plann.* 23, 150–160.
- Agyepong, I.A., Orem, J.N., Hercot, D., 2011. When the ‘non-workable ideological best’ becomes the enemy of the ‘imperfect but workable good’. *Trop. Med. Int. Health* 16, 105–109.
- Akazili, J., Ataguba, J.E.-O., Kanmiki, E.W., Gyapong, J., Sankoh, O., Oduro, A., McIntyre, D., 2017a. Assessing the impoverishment effects of out-of-pocket healthcare payments prior to the uptake of the national health insurance scheme in Ghana. *BMC Int. Health Hum. Right* 17, 1–8.
- Akazili, J., McIntyre, D., Kanmiki, E.W., Gyapong, J., Oduro, A., Sankoh, O., Ataguba, J.E., 2017b. Assessing the catastrophic effects of out-of-pocket healthcare payments prior to the uptake of a nationwide health insurance scheme in Ghana. *Glob. Health Action* 10, 1289735.
- Alhassan, R.K., Nketiah-Amponsah, E., Arhinful, D.K., 2016. A review of the National Health Insurance Scheme in Ghana: what are the sustainability threats and prospects? *PLoS One* 11, e0165151.
- Apoya, P., Marriott, A., 2011. Achieving a shared goal: free universal health care in Ghana. *Oxfam Int.*
- Arhin-Tenkorang, D., 2004. Experience of community health financing in the Africa region. In: Preker, A.S., Carrin, G. (Eds.), *Health Financing for the Poor*. World Bank, Washington DC.
- Asante, A., Price, J., Hayen, A., Jan, S., Wiseman, V., 2016. Equity in health care financing in low- and middle-income countries: a systematic review of evidence from studies using benefit and financing incidence analyses. *PLoS One* 11.
- Atinga, R.A., Abihiro, G.A., Kuganab-Lem, R.B., 2015. Factors influencing the decision to drop out of health insurance enrolment among urban slum dwellers in Ghana. *Trop. Med. Int. Health* 20, 312–321.
- Averill, C., Marriott, A., 2013. Universal Health Coverage: Why Health Insurance Schemes Are Leaving the Poor behind. *Oxfam International*, p. 176.
- Barrientos, A., Hulme, D., 2016. *Social protection for the Poor and Poorest: Concepts, Policies and Politics*. Springer.
- Blanchet, N.J., Fink, G., Osei-Akoto, I., 2012. The effect of Ghana’s National Health Insurance Scheme on health care utilisation. *Ghana Med. J.* 46, 76–84.
- Boom, V., Nuamah, N., Overbosch, G., 2004. Curative Health Care Utilisation in Ghana: a Multinomial Analysis of Equitable Access Opportunities.
- Borghji, J., 2011. Achieving universal coverage. In: Guinness, L., Wiseman, V. (Eds.), *Introduction to Health Economics*, second ed. Open University Press, London.
- Domapielle, M.K., 2014. Health insurance and access to health care services in developing countries. *Indones. J. Govern. Pol.* 5, 30964.

- Domapielle, M.K., 2015. Extending Health Services to Rural Residents in Jirapa District. *Analyses of National Health Insurance Enrolment and Access to Health Care Services*. University of Bradford.
- Domapielle, M.K., Akurugu, C.A., Mdee, A., 2020. Horizontal inequity in healthcare delivery: a qualitative analysis of perceptions of locality and costs of access in the Jirapa municipality, North-western Ghana. *J. Int. Dev.*
- Dror, D.M., Hossain, S.S., Majumdar, A., Pérez Koehlmoos, T.L., John, D., Panda, P.K., 2016. What factors affect voluntary uptake of community-based health insurance schemes in low-and middle-income countries? A systematic review and meta-analysis. *PLoS One* 11, e0160479.
- Ekman, B., 2004. Community-based health insurance in low-income countries: a systematic review of the evidence. *Health Pol. Plann.* 19, 249–270.
- Fenny, A.M., Yates, R., Thompson, R., 2018. Social health insurance schemes in Africa leave out the poor. *Int. Health* 10, 1–3.
- Fenny, A.P., Kusi, A., Arhinful, D.K., Asante, F.A., 2016. Factors contributing to low uptake and renewal of health insurance: a qualitative study in Ghana. *Glob. Health Res. Pol.* 1, 18.
- Fosu, A.K., 2017. Growth, inequality, and poverty reduction in developing countries: recent global evidence. *Res. Econ.* 71, 306–336.
- Frempong, G., Mensah, J., Oppong, J., Barimah, K., Sabi, W., 2009. An Evaluation of the National Health Insurance Program in Ghana. *Global Development Network (GDN) Dissemination Workshop*, Pretoria, South Africa.
- Ganong, L.H., 1987. Integrative reviews of nursing research. *Res. Nurs. Health* 10, 1–11.
- GHS, 2017. *The Health Sector in Ghana: Facts and Figures*. Accra: Ghana Health Service.
- GHS, 2019. *Regional Holistic Assessment Report*. Wa: Ghana Health Service, Upper West Region.
- Goudge, J., Akazili, J., Ataguba, J., Kuwawenaruwa, A., Borghi, J., Harris, B., Mills, A., 2012. Social solidarity and willingness to tolerate risk-and income-related cross-subsidies within health insurance: experiences from Ghana, Tanzania and South Africa. *Health Pol. Plann.* 27, i55–i63.
- Gss, 2018. *Ghana Living Standards Survey Round 7 (GLSS 7): Poverty Trends in Ghana 2005–2017*. Accra, Ghana Statistical Service.
- Hickey, S., Du Toit, A., 2007. Adverse incorporation, social exclusion and chronic poverty. In: *Chronic Poverty Research centre Working Paper 81*. Institute for Development Policy Management and Institute for Poverty, Land and Agrarian Studies, Cape Town, South Africa.
- Hjortsberg, C., Mwikisa, C., 2002. Cost of access to health services in Zambia. *Health Pol. Plann.* 17, 71–77.
- ILO, 2008. *Social Health protection: an ILO Strategy towards Universal Access to Health Care*.
- Johnson, F.A., Frempong-Ainguah, F., Matthews, Z., Harfoot, A.J., Nyarko, P., Baschieri, A., Gething, P.W., Falkingham, J., Atkinson, P.M., 2015. Evaluating the impact of the community-based health planning and services initiative on uptake of skilled birth care in Ghana. *PLoS One* 10, e0120556.
- Jütting, J., 2000. Do mutual health insurance schemes improve the access to health care?. In: *Preliminary Results from a Household Survey in Rural Senegal*.
- Khan, J.R., Awan, N., Islam, M., Muurlink, O., 2020. Healthcare capacity, health expenditure, and civil society as predictors of COVID-19 case fatalities: a global analysis. *Front. Publ. Health* 8, 347.
- Kieny, M.P., Evans, D.B., 2013. Universal health coverage. *EMHJ-East Mediterr. Health J* 19 (4), 305–306, 2013.
- Kusi, A., Enemark, U., Hansen, K.S., Asante, F.A., 2015. Refusal to enrol in Ghana's National Health Insurance Scheme: is affordability the problem? *Int. J. Equity Health* 14, 2.
- Macha, J., Harris, B., Garshong, B., Ataguba, J.E., Akazili, J., Kuwawenaruwa, A., Borghi, J., 2012. Factors influencing the burden of health care financing and the distribution of health care benefits in Ghana, Tanzania and South Africa. *Health Pol. Plann.* 27, i46–i54.
- Maeda, A., Araujo, E., Cashin, C., Harris, J., Ikegami, N., Reich, M.R., 2014. *Universal Health Coverage for Inclusive and Sustainable Development: a Synthesis of 11 Country Case Studies*. The World Bank.
- Masters, S.H., Burstein, R., Amofah, G., Aboagye, P., Kumar, S., Hanlon, M., 2013. Travel time to maternity care and its effect on utilisation in rural Ghana: a multilevel analysis. *Soc. Sci. Med.* 93, 147–154.
- McClelland, A., 1991. In *Fair Health?: Equity and the Health System*. National Health Strategy.
- Mcguire, T.G., Schillo, S., Van Kleef, R.C., 2021. Very high and low residual spenders in private health insurance markets: Germany, The Netherlands and the U.S. Marketplaces. *Eur. J. Health Econ.* 22, 35–50.
- Mcintyre, D., Gilson, L., Mutyambizi, V., 2005. Promoting equitable health care financing in the African context: current challenges and future prospects. EQUINET.
- Mcintyre, D., Kutzin, J., Organization, W.H., 2016. *Health Financing Country Diagnostic: a Foundation for National Strategy Development*. World Health Organization.
- Mcintyre, D., Meheus, F., 2014. *Fiscal Space for Domestic Funding of Health and Other Social Services*. Chatham House.
- Mcintyre, D., Mills, A., 2012. *Research to Support Universal Coverage Reforms in Africa: the SHIELD Project*. Oxford University Press.
- Mcintyre, D., Thiede, M., Birch, S., 2009. Access as a policy-relevant concept in low-and middle-income countries. *Health Econ. Pol. Law* 4, 179–193.
- Mensah, J., Oppong, J.R., Schmidt, C.M., 2010. Ghana's National Health Insurance Scheme in the context of the health MDGs: an empirical evaluation using propensity score matching. *Health Econ.* 19, 95–106.
- Mills, A., Ataguba, J.E., Akazili, J., Borghi, J., Garshong, B., Makawia, S., Mtei, G., Harris, B., Macha, J., Meheus, F., 2012. Equity in financing and use of health care in Ghana, South Africa, and Tanzania: implications for paths to universal coverage. *Lancet* 380, 126–133.
- Mladovsky, P., 2014. Why do people drop out of community-based health insurance? Findings from an exploratory household survey in Senegal. *Soc. Sci. Med.* 107, 78–88.
- MoH, 2016. *Ghana National Healthcare Quality Strategy (2017–2021)*. Ministry of Health, Accra.
- Myint, C.-Y., Pavlova, M., Thein, K.-N.-N., Groot, W., 2019. A systematic review of the health-financing mechanisms in the Association of Southeast Asian Nations countries and the People's Republic of China: lessons for the move towards universal health coverage. *PLoS One* 14, e0217278.
- Navarrete, F.L., Ghislandi, S., Stuckler, D., Tediosi, F., 2019. Inequalities in the benefits of national health insurance on financial protection from out-of-pocket payments and access to health services: cross-sectional evidence from Ghana. *Health Pol. Plann.* 34, 694–705.
- Nesbitt, R.C., Lohela, T.J., Soremekun, S., Vesel, L., Manu, A., Okyere, E., Grundy, C., Amenga-Etego, S., Owusu-Agyei, S., Kirkwood, B.R., 2016. The influence of distance and quality of care on place of delivery in rural Ghana. *Sci. Rep.* 6, 1–8.
- NHIA, 2009. *Annual Report 2008*. National Health Insurance Authority, Accra.
- NHIA, 2012a. *Annual Report 2011*. National Health Insurance Authority, Accra.
- NHIA, 2012b. *National Health Insurance Act, 2012 (Act 852)*. Accra: GPCL/Assembly Press. National Health Insurance Authority.
- NHIS, 2020. *Active Membership*. NHIA [Online] Available: <http://www.nhis.gov.gh/News/nhis-active-membership-soars-5282>. (Accessed 25 November 2020).
- Niño-Zarazúa, M., Barrientos, A., Hickey, S., Hulme, D., 2012. Social protection in sub-saharan Africa: getting the politics right. *World Dev.* 40, 163–176.
- Nsiah-Boateng, E., Aikins, M., 2013. Performance assessment of Ga District mutual health insurance scheme, Greater Accra Region, Ghana. *Value Health Region. Issue* 2, 300–305.
- Nsiah-Boateng, E., Aikins, M., 2018. Trends and characteristics of enrolment in the National Health Insurance Scheme in Ghana: a quantitative analysis of longitudinal data. *Glob. Health Res. Pol.* 3, 1–10.
- Oppong, J.R., 2018. Structural adjustment and the health care system. In: *IMF and World Bank Sponsored Structural Adjustment Programs in Africa*. Routledge.
- Owusu, A., Afutu-Kotey, R., Kala, M., 2012. Access to micro health insurance in Ghana: literature review and proposed analytical framework. In: *Handbook of Micro Health Insurance in Africa*. Lit Verlag, Munster.
- Owusu, A.Y., 2014. The linkage between health and development. In: *Asante, F.A., Owusu, A.Y., Athiadeke, C. (Eds.), Placing Health at the Centre of Development*. Institute for Statistical and Economic Research (ISSER), University of Ghana, Accra, Ghana.
- Palmer, N., Mueller, D.H., Gilson, L., Mills, A., Haines, A., 2004. Health financing to promote access in low income settings—how much do we know? *Lancet* 364, 1365–1370.
- Ramachandra, S., Hsiao, W., 2007. Ghana: initiating social health insurance. *Soc Health Insur. Develop. Nat.* 434, 61.
- Ranabhat, C.L., Atkinson, J., Park, M.-B., Kim, C.-B., Jakovljevic, M., 2018. The influence of universal health coverage on life expectancy at birth (LEAB) and healthy life expectancy (HALE): a multi-country cross-sectional study. *Front. Pharmacol.* 9, 960.
- Sachs, J.D., 2012. Achieving universal health coverage in low-income settings. *Lancet* 380, 944–947.
- Saleh, K., 2012. *The Health Sector in Ghana: a Comprehensive Assessment*. World Bank Publications.
- Schieber, G., Cashin, C., Saleh, K., Lavado, R., 2012. *Health Financing in Ghana*. The World Bank.
- Souza, M.T.D., Silva, M.D.D., Carvalho, R.D., 2010. Integrative review: what is it? How to do it? *Einstein (São Paulo)* 8, 102–106.
- Stuckler, D., Feigl, A.B., Basu, S., Mckee, M., 2010. The political economy of universal health coverage. In: *Background Paper for the Global Symposium on Health Systems Research*. World Health Organization, Citeseer, Geneva.
- Tangcharoensathien, V., Mills, A., Palu, T., 2015. Accelerating health equity: the key role of universal health coverage in the Sustainable Development Goals. *BMC Med.* 13, 101.
- Umeh, A.C., Feeley, G.F., 2017. Inequitable Access to health care by the poor in community-based health insurance programs: a review of studies from low- and middle-income countries. *Glob. Health: Sci. Pract.* 5.
- Van Der Wielen, N., Channon, A.A., Falkingham, J., 2018. Does insurance enrolment increase healthcare utilisation among rural-dwelling older adults? Evidence from the National Health Insurance Scheme in Ghana. *BMJ Glob. Health* 3.
- Wang, H., Otoo, N., Dsane-Selby, L., 2017. *Ghana National Health Insurance Scheme: Improving Financial Sustainability Based on Expenditure Review*. The World Bank, Washington D.C.
- Wasem, J., Buchner, F., Lux, G., Schillo, S., 2018. Chapter 11 - health plan payment in Germany. In: *Mcguire, T.G., Van Kleef, R.C. (Eds.), Risk Adjustment, Risk Sharing and Premium Regulation in Health Insurance Markets*. Academic Press.
- WHO, 1978. Declaration of Alma-Ata. *International Conference on Primary Health Care*. Alma-Ata USSR: WHO.
- WHO, 2005. *Achieving Universal Health Coverage: Developing the Health Financing System*. World Health Organization, Geneva.
- WHO, 2010. *Health Systems Financing: the Path to Universal Coverage*. World Health Report 2010. World Health Organization, Geneva.
- WHO, 2013. *World Health Report 2013: Research for Universal Health Coverage*. World Health Organization, Switzerland. Geneva.
- WHO, 2015. *Tracking Universal Health Coverage: First Global Monitoring Report*. World Health Organization, Geneva.
- WHO, 2017. *Tracking Universal Health Coverage: 2017 Global Monitoring Report*. World Health Organization, Geneva.
- Wipf, J., Garand, D., 2010. Performance Indicators for Microinsurance: A Handbook for Microinsurance Practitioners. Quality, second ed. ADA asbl, Sainte Zithe.
- Witter, S., Garshong, B., 2009. Something old or something new? Social health insurance in Ghana. *BMC Int. Health Hum. Right*.



- World Bank, 2015. World Development Indicators. The World Bank Group [Online] Available: <http://data.worldbank.org/indicator>. (Accessed 23 October 2015).
- World Bank, 2018. Year in Review: 2018 in 14 Charts. The World Bank [Online] Available: <https://www.worldbank.org/en/news/feature/2018/12/21/year-in-review-2018-in-14-charts>. (Accessed 16 September 2020).
- World Bank, 2020. GNI per capita, Atlas Method (current US\$) - Ghana, World Bank national accounts data, and OECD National Accounts data files. <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=GH>.
- Xu, K., Evans, D.B., Kawabata, K., Zeramdini, R., Klavus, J., Murray, C.J., 2003. Household catastrophic health expenditure: a multicountry analysis. *Lancet* 362, 111–117.
- Yates, R., 2009. Universal health care and the removal of user fees. *Lancet* 373, 2078–2081.