



*Full Length Research Paper*

## **Failure of Capitation System in the Ashanti Region: A Wake-up Call to Reform the Health Insurance Scheme in Ghana**

**Enock Takyi**

Eiriks Gate 3, 0650 Oslo, Norway. University of Oslo  
E-mail: ekt1082@yahoo.co.uk

Accepted 21 September, 2017

The National Health Insurance Scheme of Ghana, since its inception in 2003, has been grappling with escalating costs. The National Health Insurance Authority has been trying to address this problem by employing a mix of payment systems. The latest payment system adopted by the National Health Insurance Authority in its effort to cut down costs was capitation, which was introduced on pilot basis in the Ashanti Region in 2012. However, the capitation could not serve its purpose, and was consequently suspended in August 2017. This paper examines the factors that led to the failure of the capitation. This is done through a review of literature and news items, as well as information on the National Health Insurance Scheme website. I argue that the capitation failed mainly due to unaddressed moral hazard. This same problem threatens the sustainability of the entire insurance scheme. Thus, the failure of the capitation is a wake-up call to the National Health Insurance Authority to reform the whole insurance system.

**Keywords:** Capitation, Moral hazard, Full insurance, Price distortion, Cost sharing

### **INTRODUCTION**

To provide quality and affordable health care to its citizens, the government of Ghana adopted a social health insurance system in 2003. The National Health Insurance Scheme (NHIS) was established by the National Health Insurance Act, 2003 (Act 650) (Government of Ghana 2003). The act also established the National Health Insurance Authority (NHIA), a body which oversees the implementation of the scheme (National Health Insurance Authority (Ghana) 2011). As a social insurance system, citizens contribute premium annually to a mutual fund, from which their health care costs are paid in case they fall sick. Formal sector employees are exempt from paying the premium, because 2.5% of their social security contribution is deducted from their salaries to support the scheme.

Besides, indigents, people above 70 years, children under 18 years, pensioners, and pregnant women are exempt from payment of the premium (Witter and Garshong, 2009). Although the mutual funds are managed at the district level, the central government supports the district schemes from National Health Insurance Fund - a fund generated from 2.5% Health Insurance Levy on selected goods and services, and 2.5% of social security contributions of all salary earners in Ghana. The government also gets some funds from other sources such as the World Bank, International Labour Organization, and Danish International Development Agency (Amarteyfio and Yankah, 2012). The principal objective of the NHIS was to achieve universal health coverage for all residents in Ghana.

Although this universality has not yet been achieved, the scheme currently covers about two thirds of the country's population (Potter et al., 2013). The insured population access health services, covered by the NHIS tariff, free of charge at NHIA-accredited facilities. Health facilities are then reimbursed via monthly billing, according to regularly updated tariff lists (Potter et al., 2013). However, health services not covered by the NHIS are paid for out of pocket. For the uninsured, all health care expenses are paid out of pocket.

Since its establishment, the scheme has been battling with escalating costs. The NHIA has ever since tried to address this problem by employing a mix of payment systems (Agyei-Baffour et al., 2013). The efforts have, however, not been very successful. Currently, the scheme owes providers to the tune of 1.2 billion Ghana Cedis (approximately US\$ 269,131,000) ("Ghana's Health Insurance on the Brink; over ₦1.2 Billion in Debts - MyJoyOnline.Com," n.d.). The scheme started with the fee-for-service (FFS) approach. Soon the fee-for-service system proved inefficient due to abuses on the part of clients as well as health care providers. The fee-for-service system was, therefore, complemented by the Diagnosis Related Group (DRG) system, labelled the Ghana Diagnosis Related Group (G-DRG) system. Unfortunately, the G-DRG system could not solve all the inefficiencies presented by the fee-for-service system. In 2012, the NHIA decided to resort to capitation payment system. A pilot implementation of the capitation system was, therefore, introduced in one of the administrative regions of the country – the Ashanti Region – with the hope of extending it to the other regions. Five years after the pilot implementation, the NHIA, on 25th July 2017, announced the suspension of the payment system with effect from 1st August 2017 ("NHIS Suspends Capitation Programme," n.d.).

This paper attempts to examine the factors that led to the failure of the capitation system in the Ashanti region. I argue that the factors are not limited to the capitation system; rather they are factors that undermine the sustainability of the health insurance scheme in general. Finally, I make suggestions regarding the way forward for the scheme.

## A JOURNEY THROUGH PAYMENT SYSTEMS

The NHIA of Ghana has experimented three different payment systems, namely, fee-for-service, Ghana Diagnosis Related Group (G-DRG) and, recently, a capitation system which was implemented on pilot basis in the Ashanti Region.

### **Fee-for-service (FFS)**

In the fee-for-service payment system, providers are reimbursed based on the volume of medical activities.

Diagnostic and therapeutic activities, and contacts are separately identified, and the price of each item is known *ex ante* (Jegers et al., 2002). Reimbursement is made based on this list. The amount reimbursed to a provider is, therefore, dependent on the number of activities performed. Hence, providers can increase their returns by producing more services. According to Jegers et al. (2002), the fee-for-service system guarantees access to care, and ensures that the best available care is provided to patients. However, the system also has several adverse effects. One of the principal negative effects of the fee-for-service system is overproduction of care, also termed supplier induced demand (Jegers et al., 2002; Debpur et al., 2015). This occurs where health care providers provide care which does not deliver any significant marginal health benefits simply because they want to maximise profits (Jegers et al., 2002; Debpur et al., 2015).

Reimbursement for services provided under Ghana's National Health Insurance Scheme began with the fee-for-service system. A few years after the implementation of the scheme, the NHIA raised concerns about escalating costs of health services for its clients. The NHIA attributed the rapid increase in costs mainly to abuses on the part of health care providers ("Capitation" 2017). One of the major concerns raised was overproduction of care by health care providers (Debpur et al., 2015). According to Debpur et al. (2015), some providers also overcharged drugs and services provided to clients, while others either charged for services not provided or inflated the number of clients provided with services. These problems were even compounded by the cumbersome nature of administrative processes associated with the fee-for-service system which made it difficult to detect fraud (Sodzi-Tettey et al., 2012).

To curb the abuses inherent in the fee-for-service payment system, the National Health Insurance Authority complemented it with the Diagnostic Related Groups (DRG) System in 2008.

### **Diagnostic Related Groups System (DRG-System)**

In the DRG-system, providers are reimbursed based on the type of case treated (Jegers et al., 2002). The DRG classification groups diagnoses based on clinical characteristics and homogeneity of the resource used (Jegers et al., 2002). Although a distinction is generally made between systems that classify patients according to diagnoses and those that classify patients based on treatments and procedures, in practice, both systems are used simultaneously (Busse and Schwartz, 1997). The DRG system is prospective, as fees are determined *ex ante* (Jegers et al., 2002).

The DRG system has the advantage of reducing costs per case by making supplier induced demand unattractive to providers. In other words, health care providers, knowing that their income per case is fixed, will

try to cut down cost by reducing the length of stay in a health facility, avoiding care activities that are not needed by their clients, and substituting cheaper inputs for more expensive ones (Jegers et al., 2002). The DRG also ensures uniformity in claims processing and claims management, thereby reducing the time and resources used in filing, vetting, and payment of claims.

However, the system leaves room for profit-maximising providers to escalate cost. For instance, health care providers can spread care over several admissions per patient in order to increase their income (Jegers et al., 2002). Another risk involved in the DRG system is "tariff creeping", a phenomenon whereby providers code diagnoses upward to obtain a higher reimbursement (Jegers et al., 2002; Opoku et al., 2014).

To overcome the abuses that occasioned the fee-for-service payment system, the National Health Insurance Authority in 2008 introduced the Diagnosis Related Group (DRG) payment system. The system, named the Ghana Diagnosis Related Group (G-DRG) system, catered for all inpatient and outpatient services, except for medicines, which continued to be paid for under the fees-for-service system (Dalinjong and Laar, 2012; Opoku et al., 2014).

Although the National Health Insurance Authority expected significant improvement in cost containment after the introduction of the G-DRG system, the result has not been very different. This, according to the NHIA, is mainly due to abuses on the part of providers. There have been numerous reports of providers coding diagnoses upward to obtain a higher reimbursement (Witter and Garshong, 2009; Opoku et al., 2014). There have also been reports of providers filing the same claim more than once (Witter and Garshong, 2009).

In view of the persisting inefficiencies characterising the G-DRG system, the National Health Insurance Authority decided to explore the capitation system.

## **Capitation**

Under capitation payment system, each insured person selects a preferred primary care provider. One can subscribe to a provider for a specified period, after which the person is free to choose another provider. Capitation is a fixed amount of money per patient per unit of time paid in advance to the provider for the delivery of health care services ("Capitation Payments | Understanding Capitation | ACP", 2017). The amount is calculated based on the total number of insured individuals who have selected a given provider ("Capitation", 2017). The full capitation amount is paid to the provider at the beginning of the service period. The amount is paid to the provider irrespective of whether that patient would seek care during the period or not ("Capitation", 2017). The total income for a provider under capitation is, therefore, a function of the number of patients enrolled on the list, rather than the number of activities performed (Jegers et al., 2002).

The capitation system has several advantages. It helps to prevent abuses from healthcare providers. Unlike, the case-based systems, where a provider is remunerated each time an activity is performed, the capitation system does not offer any additional reward as such. This discourages providers from overproduction of care, since this will only increase cost without yielding any marginal reward. Capitation also helps to reduce abuses from health insurance clients. By tying patients to one primary care provider, the habit of hoping from one provider to another is eliminated. Capitation can also encourage health prevention and promotion if these are more cost-effective than treatment ex post, especially in situations where patients are tied to providers for longer periods (Jegers et al., 2002). Additionally, capitation can help payers to address difficulties in forecasting and budgeting since expenditures are approximately known ex ante. Moreover, capitation helps to eliminate delays in the payment of claims, since providers are reimbursed in advance. The capitation, thus, helps providers to get funds in advance, which helps them to get the required resources for effective service delivery. Capitation may also lead to improvement in quality of care as providers strive to improve their services so as to keep their existing patients and attract new ones (Aas, 1995). Capitation has been used successfully by countries such as Norway, Netherlands, the United States, Britain and Thailand (Amarteyfio and Yankah, 2012).

In 2012, the capitation payment system was introduced in the Ashanti Region of Ghana for primary care on pilot basis ("Capitation", 2017). Under the system, a person could subscribe to a provider for six months before he/she can choose another provider. Specialist referrals and inpatient care continued to be paid for using the Ghana Diagnostic Related Groups (G-DRG) and fee-for-service payment method for medicines ("Capitation", 2017).

The National Health Insurance Authority adopted the capitation payment system mainly due to its potential benefit of lowering costs. After five years of pilot capitation in the Ashanti region of Ghana, these benefits could not be achieved. The system was bedevilled by several challenges. Notable among them was escalating cost burden on providers in the pilot region ("HISPAG Statement on Need to Review NHIA Capitation", 2017). Consequently, the NHIA, on 25 July 2017, announced the suspension of the payment system with effect from 1st August 2017. This, according to the NHIA, is to enable them to undertake a thorough review of the whole capitation payment mechanism ("NHIS Suspends Capitation Programme," n.d.). While the authority considers reviewing the capitation system, I believe the failure of the capitation system is a wake-up call to the NHIA to take a second look at the whole insurance scheme. This is because the factors that led to the failure of the capitation are the same factors that threaten the sustainability of the scheme in general.

## **FACTORS THAT LED TO THE FAILURE OF THE CAPITATION SYSTEM IN THE ASHANTI REGION**

There is nothing special about the capitation itself, or its implementation, that led to its failure. Rather, the failure was due to lapses in the implementation of the entire insurance scheme that have long been left unaddressed. One major factor that led to the failure of the capitation in the Ashanti Region was escalating cost burden on providers. Shortly after the introduction of the capitation system in the Ashanti Region, healthcare providers in the region raised the concern that the capitation rate was woefully inadequate. Health care providers and other stakeholders warned time and again that the capitation rate was woefully inadequate, and could adversely affect the provision of basic health care ("Suspend NHIS Capitation - Ashanti Health Providers Warn Gov't - MyJoyOnline.Com" 2017; "HISPAG Statement on Need to Review NHIA Capitation", 2017). The phenomenon even compelled some private health facilities to opt out of the scheme, while those who remained charged fees for some of the services hitherto covered by the National Health Insurance Scheme ("Fallout Of NHIS Capitation Pilot In Ashanti: Lessons For A Nationwide Implementation", 2017). The NHIA attempted to reduce the cost burden on providers by removing primary care maternity services from the capitation basket (Koduah et al., 2016), yet the problem was not solved. The issue of cost burden on providers dragged on until the system was consequently suspended.

The escalating cost burden on providers, which primarily led to the failure of the capitation payment system in the pilot region, is attributable mainly to the fact that moral hazard from NHIS clients has not been adequately addressed by the NHIA. Moral hazard is the tendency for insurance against loss to reduce incentives to prevent or minimize the cost of loss (Baker 1996). There are two types of moral hazard, namely, ex ante moral hazard and ex post moral hazard (Bhattacharya et al. 2013). Insurance clients feel less need to avoid preventable health risks, since they do not bear the full cost of their health care. This is known as ex ante moral hazard. Ex post moral hazard occurs when insurance clients demand higher quantities of more expensive treatments than they would have without insurance. There are two sources of abuse in health insurance: abuse from providers and abuse from health insurance clients. For an insurance scheme to be successful, both sources must be dealt with. However, a critical look at NHIA'S strategies to cut down costs, as outlined above, reveals that almost all the strategies target abuses from providers without doing much about moral hazard from clients. For instance, when the NHIA realised that costs were rapidly increasing under the fee-for-service payment system, it was providers who were blamed of abusive behaviours, hence the G-DRG system was introduced; nothing was done about moral hazard from clients. Similarly, when the scheme still could not contain costs

with the combination of fee-for-service and G-DRG payment systems, it was mainly providers who were accused of unacceptable behaviours such as upward coding of diagnoses and spreading care over several admissions per patient to increase their income. Very little was said about client moral hazard. Thus, moral hazard from clients was almost never given any attention by the NHIA as far as escalating costs were concerned. Hence, the phenomenon was not adequately dealt with even under the capitation payment system.

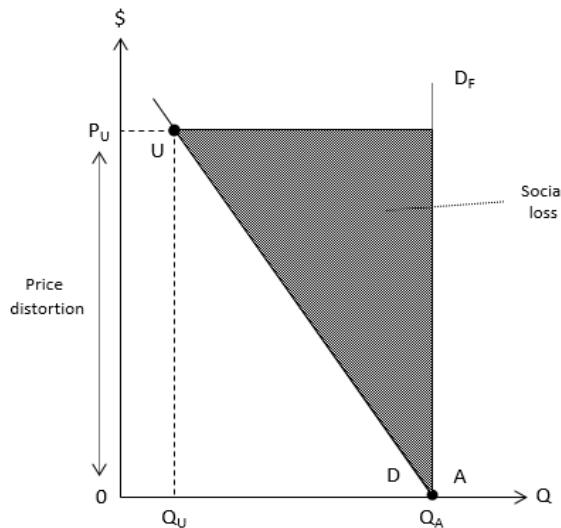
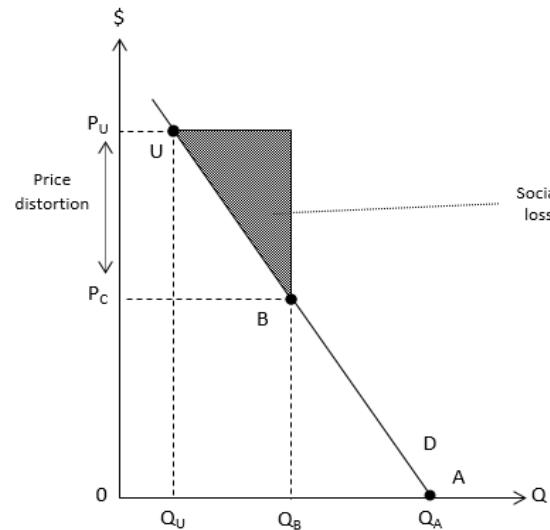
It is worth to note that capitation payment system does not have an inherent capacity to deal with all moral-hazard behaviours. Although the capitation payment system can prevent clients from hopping from one provider to another, there are several other moral-hazard behaviours identified under Ghana's NHIS that the payment system cannot solve. Apart from the tendency to hop from provider to provider, other moral-hazard behaviours identified under Ghana's NHIS include too frequent visits to the same provider, feigning sickness to collect drugs for uninsured friends and relatives, visiting the health facility with minor conditions that could otherwise be treated at home, and asking for more expensive treatments or medications (Samson, n.d.; Deppuur et al., 2015; Akum, 2014). As it stands now, there are no measures under the scheme to deal with these moral-hazard behaviours, neither were there measures to deal with them under the piloted capitation. Thus, in terms of moral hazard, there was no significant difference between the pilot region and the other regions. Perhaps the only difference between the pilot region and the other regions was that the capitation payment system transferred the cost burden resulting from client moral hazard from the scheme to providers in the pilot region.

It can thus be said that the piloted capitation suffered escalating costs, and the entire scheme continues to suffer escalating costs, largely because one of the sources of increasing costs –moral hazard – has not been adequately tackled.

## **THE WAY FORWARD**

Moral hazard from clients persists for one basic reason: the scheme offers full insurance, that is, health care is completely free of charge for all NHIS clients. This has, at least, three possible consequences. First, clients feel less need to avoid preventable health risks. Second, clients tend to visit the health care facility with conditions that do not necessarily need medical attention. Third, clients opt for the most expensive treatment.

The relationship between full insurance and moral hazard is well-established. Moral hazard depends on three factors, namely price distortion, price sensitivity and asymmetric information. Moral hazard can exist only when all these factors are present (Bhattacharya et al., 2013). Price distortion occurs when an individual does not bear the full cost of an item or a service he

**Figure 1. Full Insurance****Source:** Bhattacharya et al. (2013), with few modifications**Figure 2. Copayment**

consumes, because somebody else is paying a part or all the cost. Insurance leads to price distortion in that insurance clients pay only a part of their health care bills; in full insurance, they pay nothing at all. Price sensitivity refers to the responsiveness of an individual to a change in price. The degree of price sensitivity depends largely on the nature of the risk being insured, and how controllable it may be (Bhattacharya et al., 2013). While some risks are basically uncontrollable, others can be partially or fully controlled. Insurance against a genetic disease, for instance, will not induce moral hazard since insurance clients cannot do anything to bring about a new instance of the disease. Insurance against injuries, on the other hand, may induce moral hazard since individuals might be tempted to take more risky actions after being insured. In response to price distortion brought about by insurance, insurance clients tend to change their behaviour in a way that increases the chances of a disease or an injury occurring. Besides, insurance clients tend to opt for the most expensive treatments once a disease or an injury has occurred. The insurer cannot observe this change in behaviour. This is termed information asymmetry.

Insurers cannot change their clients' price sensitivity, which is a property of consumers' demand functions (Bhattacharya et al., 2013). Similarly, it is almost impossible for insurers to monitor their clients' behaviours continuously. However, there are ways through which price distortion can be reduced. Hence, the best way to minimise moral hazard is to find ways to reduce price distortion.

### Dealing with Price Distortion

A person without insurance, who pays for all his health services, will always be mindful of how much health

service he consumes, since each marginal utility he derives from an additional health service comes with a marginal cost. He will, therefore, seek health care only when it is necessary, and will opt for as less expensive treatment as possible. Insurance, however, leads to price distortion. In other words, the effective price of health service to an individual with insurance is decreased, since an insurance company is paying all or part of the costs. The individual, being sensitive to price, will thus consume more health service. When price distortion is high (i.e. when individuals bear very small portion of their health care costs), individuals will consume more health service than when price distortion is low (i.e. when individuals bear most of their health care costs). This is illustrated in Figure 1 and Figure 2.

In Figure 1, P<sub>U</sub> is the full cost per unit of health service. A person without health insurance, mindful of his health care costs, will consume Q<sub>U</sub> of health service. Full insurance, as it is the case of Ghana, leads to a price distortion, indicated by the vertical distance between 0 and P<sub>U</sub>. This brings the cost of health service, from the client's perspective, down to zero. A price-sensitive individual will, therefore, demand all health services that will give him a positive utility. The individual's effective demand curve, thus, becomes D<sub>F</sub> and he consumes at point Q<sub>A</sub>. The increase in demand for health service is not necessarily because the individual needs it, but just because the amount of health service demanded does not affect his income. This will lead to a huge social loss (represented by the shaded region). Social loss may take the form of long waiting time for patients, undue pressure on health care professionals, health-insurance clients being asked by providers to pay their health care bills because the scheme is unable to reimburse providers on time, pressure on government to bail the scheme from its

escalating debts, and productivity loss due to extended periods spent by patients at health facilities.

The only way through which moral hazard can be eliminated is to make clients pay the full cost of their medical care. However, as Bhattacharya et al. (2013) indicated, this strategy defeats the entire purpose of insurance, which is designed to reduce expenses in case of illness or injury. Thus, insurers can only limit moral hazard by adopting strategies to reduce price distortion due to insurance. Usually, insurers adopt strategies that ensure that their clients pay a part of their health care costs. Such strategies reduce moral hazard and its accompanying social loss as illustrated in Figure 2. In Figure 2, the insurer offers to pay only a part of an individual's health care costs instead of the full cost. This leads to a lower price distortion (vertical distance between  $P_C$  and  $P_U$ ) as compared to full insurance. An individual's effective price then increases from zero to  $P_C$ , and his demand for health service is reduced to  $Q_B$ . This consequently reduces social loss.

Common strategies that insurers use to reduce moral hazard include coinsurance, copayment and deductibles. In coinsurance, health insurance clients pay a fixed percentage of their health care bills anytime they seek health care. For instance, an insured client might be made to pay 25% of his bills, while the insurer covers the remaining 75%. In copayment, health insurance clients pay a fixed amount called a copay for each visit to the health facility; any amounts beyond the copay are borne by the insurer. Deductibles set minimal levels of expenses below which the insurer does not help reimburse medical expenses (Bhattacharya et al., 2013). Deductibles may apply to each single visit to a doctor or over an entire year. For example, an individual on an insurance with an annual deductible of \$700 pays for his first \$700 of annual medical costs out-of-pocket. Any medical costs beyond the \$700 are then funded by the insurer.

For a sustainable health insurance in Ghana, the NHIA should resort to one or a combination of the strategies described above. By increasing the marginal cost of additional medical care to the clients, the strategies reduce the quantity demanded of medical care. This reduces social loss since clients, not fully insured, face uncertainty regarding their health care costs.

### **Dealing with the Extremely Poor**

According to Ghana Statistical Service (2014), 8.4 percent Ghana's population live in extreme poverty. Obviously, it is this group of people who need health insurance most. However, they will find it almost impossible to pay a portion of their medical bills no matter how small it may be. The question then arises as to how this group of people can benefit from the health insurance

scheme if the NHIA introduces a cost-sharing strategy. To cater for this vulnerable group, the NHIA needs to identify them, and issue them with special identity cards to enable them to access medical care for free. Identifying these individuals will not pose any big challenge since the NHIA already has a system in place that exempts indigents from paying health insurance premiums; the NHIA can rely on the same data. Another way to help the extremely poor benefit from the scheme, in case a cost-sharing strategy is introduced, is to empower them economically so that they can pay the required portion of their medical bills, being it a copay, coinsurance, or deductible. Currently, the government of Ghana is implementing a programme called Livelihood Empowerment Against Poverty (LEAP), through which cash transfers are given to the extremely poor on monthly basis. Government can step up this programme, and give the beneficiaries an equivalence of the country's minimum wage.

### **CONCLUSION**

Ghana adopted a social health insurance system in 2003 to provide quality and affordable health care to its citizens. Since its establishment, the sustainability of the scheme has been threatened by escalating costs. The NHIA has ever since tried to address the problem by employing a mix of payment systems. The latest payment system adopted by the NHIA was capitation, which was implemented on pilot basis in the Ashanti Region in 2012 alongside fee-for-service and DRG. Five years after the pilot implementation, the capitation system could not cut down costs as it was envisaged. Consequently, the capitation system was suspended in August 2017. A closer look at the system reveals that there is nothing special about the capitation itself, or its implementation, that led to its failure. Rather, the failure was due to inefficiencies in the implementation of the entire insurance scheme. Failure of the capitation system, as well as the prolonged cost burden on the whole insurance scheme, can be attributed largely to the failure of the NHIA to adequately address client moral hazard. While employing measures to address abuses from health care providers, moral hazard from clients must also be addressed to ensure a sustainable insurance scheme.

Moral hazard persists under Ghana's health insurance scheme mainly because the insured access health care completely free of charge. Consequently, the insurance clients see less need to prevent injuries and sicknesses, since their treatment does not affect their income in any way. Besides, insurance clients tend to visit the health care facility with conditions that could otherwise be treated at home and, sometimes, find ways to obtain medication for their uninsured relatives and friends. NHIS

clients also tend to request for the most expensive treatment available since they are not the ones paying for their health care.

To ensure a sustainable insurance scheme, the NHIA needs to adopt a strategy that will make its clients pay a part of their health care costs, such as copayment, coinsurance or deductibles. With the knowledge that they will bear a portion of their health care expenses, NHIS clients will avoid risky behaviours and use health services sparingly.

Having said this, I must acknowledge that there are people in Ghana who are extremely poor, and cannot afford any portion of their health care costs no matter how small it may be. The NHIA can identify these individuals and issue them with special identity cards to enable them to access medical care for free. The NHIA already has a system in place that exempts indigents from paying health insurance premiums; the same group can be issued with special identity cards so that they can access health care for free. Government can also increase the cash transfers given to the extremely poor under its LEAP programme to the country's minimum wage to enable them to pay a portion of their health care bills should the NHIA introduce a cost-sharing strategy.

## REFERENCES

- Aas IH (1995). "Incentives and Financing Methods." *Health Policy* (Amsterdam, Netherlands). 34 (3): 205–220.
- Agyei-Baffour Peter, Regina Oppong, Daniel Boateng (2013). "Knowledge, Perceptions and Expectations of Capitation Payment System in a Health Insurance Setting: A Repeated Survey of Clients and Health Providers in Kumasi, Ghana." *BMC Public Health* 13 (December): 1220. doi:10.1186/1471-2458-13-1220.
- "Akum (2014). Health Care Financing in Ghana: Health Care Providers, Clients' Perceptions and Experiences in the Upper East Region of Ghana. *J. Sci. Res. Stud.* 1(2):29-38." 2017. Accessed September 2. <http://www.modernrespub.org/jrsr/abstract/2014/July/Akum2.htm>.
- Amarleyfio Irene Agyeppong, Ben Yankah (2012). "Understanding the NHIS Provider Payment System and Capitation." *The Chronicle*, Ghana. <http://thechronicle.com.gh/understanding-the-nhis-provider-payment-system-and-capitation/>.
- Baker Tom (1996). "On the Genealogy of Moral Hazard." *Faculty Scholarship*, January. [http://scholarship.law.upenn.edu/faculty\\_scholarship/872](http://scholarship.law.upenn.edu/faculty_scholarship/872).
- Bhattacharya Jay, Timothy Hyde, Peter Tu (2013). *Health Economics*. Palgrave Macmillan.
- Busse R, Schwartz FW (1997). "Financing Reforms in the German Hospital Sector: From Full Cost Cover Principle to Prospective Case Fees." *Medical Care* 35 (10 Suppl): OS40-49.
- "Capitation" (2017). Accessed September 1. <http://www.nhis.gov.gh/capitation.aspx>.
- "Capitation Payments | Understanding Capitation | ACP." 2017. Accessed September 1. <https://www.acponline.org/about-acp/about-internal-medicine/career-paths/residency-career-counseling/guidance/understanding-capitation>.
- Dalinjong Philip Ayizem, Alexander Suuk Laar (2012). "The National Health Insurance Scheme: Perceptions and Experiences of Health Care Providers and Clients in Two Districts of Ghana." *Health Economics Review* 2 (July): 13. doi:10.1186/2191-1991-2-13.
- Debuur Cornelius, Maxwell Ayindenaba Dalaba, Samuel Chatio, Martin Adjuiik, Patricia Akweongo (2015). "An Exploration of Moral Hazard Behaviors under the National Health Insurance Scheme in Northern Ghana: A Qualitative Study." *BMC Health Services Research* 15 (October). doi:10.1186/s12913-015-1133-4.
- "Fallout Of NHIS Capitation Pilot In Ashanti: Lessons For A Nationwide Implementation" (2017). Accessed September 2. <https://www.modernghana.com/news/475289/1/fallout-of-nhis-capitation-pilot-in-ashanti-%20lesson.html>.
- Ghana Statistical Service (2014). "Ghana Living Standards Survey Round 6 (GLSS6): Poverty Profile in Ghana (2005-2013)." <http://www.statsghana.gov.gh/glss6.html>.
- "Ghana's Health Insurance on the Brink; over ₦1.2 Billion in Debts - MyJoyOnline.Com." n.d. <http://www.myjoyonline.com/news/2017/April-13th/ghanas-health-insurance-on-the-brink-over-12-billion-debt.php>.
- Government of Ghana (2003). *National Health Insurance Act*, 2003. Accra: Ghana Publishing Company.
- "HISPAg Statement on Need to Review NHIA Capitation" (2017). Accessed September 1. <http://www.ghananewslink.com/index.php/2014-01-01-17-43-16/59-hispag-%20statement-on-need-to-review-nhia-capitation>.
- Jegers Marc, Katrien Kesteloot, Diana De Graeve, Willem Gilles (2002). "A Typology for Provider Payment Systems in Health Care." *Health Policy* 60 (3): 255–273. doi:10.1016/S0168-8510(01)00216-0.
- Kodua Augustina, Han van Dijk, Irene Akua Agyeppong (2016). "Technical Analysis, Contestation and Politics in Policy Agenda Setting and Implementation: The Rise and Fall of Primary Care Maternal Services from Ghana's Capitation Policy." *BMC Health Services Research* 16 (July). doi:10.1186/s12913-016-1576-2.
- National Health Insurance Authority (Ghana) (2011). "2011 Annual Report." <http://www.nhis.gov.gh/annualreport/2011.aspx>.
- "NHIS Suspends Capitation Programme" n.d. <https://www.ghanaweb.com/GhanaHomePage/health/NHIS-suspends-capitation-programme-562780>.
- Opoku Michael, Richard Nsiah, Paul Atta Oppong, Edmund Tetteh (2014). "The Effect of Capitation Payment on the National Health Insurance Scheme in Ashanti Region, Ghana." *SSRN Scholarly Paper* ID 2479305. Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract=2479305>.
- Potter Amy, Oscar Debrah, Joyce Ashun, Karl Blanchet (2013). "Eye Health Systems Assessment (EHSAS): Ghana Country Report." <http://docplayer.net/3213836-Eye-health-systems-assessment-ehsa-ghana-country-report.html>.
- Samson, Gboli. n.d. "Sustaining Ghana's Health Insurance Scheme." *ModernGhana.Com*. <https://www.modernghana.com/news/537447/sustaining-ghanas-health-insurance-scheme.html>.
- Sodzi-Tettey S, Aikins M, Awoonor-Williams JK, Agyeppong IA (2012). "Challenges in Provider Payment Under the Ghana National Health Insurance Scheme: A Case Study of Claims Management in Two Districts." *Ghana Med. J.* 46 (4): 189–199.
- "Suspend NHIS Capitation - Ashanti Health Providers Warn Gov't - MyJoyOnline.Com" (2017). Accessed September 1. <http://www.myjoyonline.com/news/2013/December-24th/suspend-nhis-capitation-ashanti-health-providers-warn-govt.php>.
- Witter Sophie, Bertha Garshong (2009). "Something Old or Something New? Social Health Insurance in Ghana." *BMC International Health and Human Rights* 9: 20. doi:10.1186/1472-698X-9-20.