

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
KUMASI, GHANA**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

**DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS**

**THE EFFECTS OF CAPITATION ON HOSPITAL ADMINISTRATION IN  
SOME SELECTED DISTRICTS OF THE ASHANTI REGION**

**BY:**

**AKWASI OHENE ADJEI (B.Sc.Hons.)**

**JUNE, 2016**

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**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES,  
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KUMASI IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF MASTER IN PUBLIC HEALTH/HEALTH SERVICE PLANNING  
AND MANAGEMENT.**

**JUNE, 2016**

## DECLARATION

I undertook the work herein described under the supervision of **DR. PETER AGYEI-BAFFOUR**, of the Department of Health Policy, Management and Economics, Kwame Nkrumah University of Science and Technology. All references cited in this work have been duly acknowledged.

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## **DEDICATION**

This write-up is dedicated to my beloved Parents **MR. AND MRS. ADJEI**. I also dedicated this work to my wife, Anita Acheampong.

## **ACKNOWLEDGEMENT**

My first and foremost thanks go to the Almighty God for His abundant grace and protection He abounds on me till now and my supervisor.

Also, I express my sincere gratitude and appreciation to my supervisor, Dr. Peter Agyei-Baffour for his enormous contribution to the conceptualization and successful execution of the study. Working closely with him has given me the chance to appreciate his sharp intellect as well as his warm and helpful nature.

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## DEFINITION OF TERMS

**Capitation** is a provider payment method in which providers are paid, typically in advance, a pre-determined fixed rate to provide a defined set of services for each individual enrolled with the provider for a fixed period of time

**Health care** is defined as the act of taking preventative or necessary medical procedures to improve a person's well-being. This may be done with surgery, the administering of medicine, or other alterations in a person's lifestyle. These services are typically offered through a health care system made up of hospitals and physicians.

A **Health facility** is, in general, any location where health care is provided.

A **hospital** is an institution for health care typically providing specialized treatment for inpatient (or overnight) stays.

## **ABBREVIATIONS**

FFS	Fee- For- Service
GDRG	Ghana Diagnostic Related Groupings
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
PMPM	Per Member Per Month
PPP	Preferred Primary Provider
SMPD	Society of Private Medical and Dental Practitioners

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## **ABSTRACT**

While many countries are contemplating incentive-based health sector reform, emphasizing competition and supply-side cost-sharing, the evidence on how they work and the extent to which they succeed in achieving the goals of cost containment, quality and efficiency improvement, etc. remains limited, especially for developing countries. In this context, this study was carried out in the Ashanti Region to assess the effects of capitation on hospital administration in five selected public districts. A non-experimental, cross-sectional design was adopted for the study. Also, the purposive and simple random sampling techniques were adopted to select two hundred (200) respondents who completed the survey instrument. Hypotheses were tested using correlational and regression analytical procedures. There was a significant positive relationship between hospital administration and health care delivery. Also, the study showed a positive significant relationship between capitation and health administration. Some of the challenges affecting the capitation programme were late transfer of capitation payment, some providers are unable to get the list of people capitated to their facilities on time, the amount used for blanks are not being used by the providers for the intended purpose, NHIS subscribers are forced to pay additional amount to cover their bill (co-payment). It is recommended that monitoring and evaluation are important to ensure the proper functioning of the reform and good quality data should be collected for that purpose and funds should be transferred to the capitation hospitals on time.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background**

Health care financing continues to stir debates around the world. Many low and middle income countries, especially keep on exploring different ways of financing their health systems. This is due to the fact that their health systems are chronically under-funded (James, Hanson & McPake, 2006). User fees were initially introduced at the point of service delivery in some of these countries in order to generate revenue for the running of their health systems. In some contexts, the introduction of user fees led to improvement in the quality of health care services (Lagarde & Palmer, 2006). However, the overwhelming evidence suggests that user fees constitute a strong barrier to the utilization of health care services, as well as preventing adherence to long term treatment among poor and vulnerable groups. These problems led to yet another debate to look for other alternatives of health care financing.

In many countries, market-oriented health care reforms are high on the political agenda. The purpose of these reforms is to make resource allocation in health care more efficient, more innovative and more responsive to the consumers' preferences. Ghana is no exception in this respect.

A capitation can be defined as the amount of health service funds to be assigned to a person for the service in question, for the time period in question, subject to any national budget constraints. In effect, a capitation system puts a “price” on the head of every citizen. Capitations are usually varied according to an individual’s personal and social

characteristics, using a process known as risk adjustment. In most nations, the intention is that the risk-adjusted capitation should represent an unbiased estimate of the expected costs of the citizen to the health care plan over the chosen time period (typically one year). There is an element of capitation funding in the health care systems of almost all developed countries. Capitation is seen as an important mechanism for securing both equity and efficiency objectives.

The shift in hospital payment from fee- for- service (FFS) to capitation and case-based payments is not unique to Ghana. Across many transitional economies and other developing countries, reform on the purchasing side goes hand-in-hand with development of the pooling functions. Roughly three-fourths of all countries in Europe and Central Asia were reported to adopt a provider-purchaser split over the last two decades (Moreno-Serra and Wagstaff, 2010). A typical model there is case-based payment for tertiary care and capitation payment for primary care. This has been applied in Armenia, Estonia, Latvia, Slovak Republic, Georgia, Kyrgyz, and Turkey, just to name a few (Kutzin, Cashin, and Jakab 2012; Gotsadze, 2012).

On other continents, social health insurance schemes in Argentina, Brazil, Nicaragua, Thailand, and Vietnam have adopted, or are currently piloting, capitation payment as a means to remunerate public and private providers. The level of interest in reforming the way providers are paid is ever mounting while empirical evidence on the results is not catching up. The current study evaluates the effect of capitation reform in Ghana on

efficiency, quality of care, and equity by analyzing a rather unique hospital panel data set combined with a panel of population level data.

Due to this new paradigm in healthcare services, hospital administrators need to take into consideration patients' expectations and perceptions, and must address the issue of improving the perceived quality of healthcare services they provide. In general, providing good quality healthcare is an ethical obligation of all healthcare providers (Zineldin, 2006) and receiving good quality care is a right of all patients (Pickering, 1991).

## **1.2 Problem Statement and Rationale**

Capitation is a provider payment method in which providers are paid, typically in advance, a pre-determined fixed rate to provide a defined set of services for each individual enrolled with the provider for a fixed period of time. The amount paid to the provider is irrespective of whether that person would seek care or not during the designated period.

“Capitation which has been implemented in the Ashanti Region since January 2013 does not provide enough funding to enhance quality healthcare delivery as compared with the Ghana Diagnostic Related Groupings (GDRG) operated nationwide, and all efforts by the directorate to collaborate with the NHIA to increase the rate or roll out capitation nationwide have not yielded fruitful results.



Beneficiaries of the capitation scheme in the Ashanti Region are currently required to pay cash at accredited private health facilities because private practitioners no longer accept their NHIS cards. The Society of Private Medical and Dental Practitioners (SMPD) announced at a news conference held on Friday December 30, 2011, in Kumasi, that it was withdrawing its services from the government's health care programme, citing reasons of inefficiencies in the new capitation policy being piloted in the Ashanti Region (Chronicles, December, 2011).

Due to the capitation, many hospitals are complaining simply because the amounts allocated to them are inadequate and they are forced to give drugs that will not totally solve the problems to their clients. In other words, patients are sometimes asked to buy the drugs from other pharmacies which make it difficult for them.

Low attendances at scheme centres coupled with ineffective customer care were the perceived challenges the region is suffering from. Also, with data management of the scheme, system failure as key amongst the problems facing data management in the region. Other factors that negatively affected capitation payment implementation were resource constraint and lack of an enabling environment in the region.

It is important to keep in mind that the imperative driving most capitation systems is that of securing control of expenditure. If the level of health care expenditure were seen to be unproblematic, then the interest in setting prospective budgets, and therefore in developing capitations, largely disappears. Under such circumstances, there is little incentive to move far from the relatively straightforward (albeit highly inefficient) fee-

for-services approach to funding, possibly with added incentives to treat ‘underserved’ sections of the population. However, given that expenditure control is of concern, and that prospective budgets must therefore be set, the question arises: why use capitations? There are two principal reasons, relating to equity and efficiency (Hutchison et al., 1999).

To develop risk adjusted capitation payment the two main resource allocation goals are considered. With regard to efficiency, production efficiency and three dimensions of allocative efficiency (Mossialos & Dixon 2002) should be carefully examined. For risk adjustment, the most important principle is the allocative efficiency of health care services across different health care interventions. Equity arguments when designing capitation can be viewed as (i) people should enjoy equal access to health care according to their needs (horizontal equity) and/or (ii) resource allocation should contribute to the reduction in avoidable health inequalities of the population (vertical equity) (Hauck et al 2002). When a choice has to be made across the different efficiency and equity principles a trade-off is usually unavoidable.

It is based on the above that this study seeks to assess the effects of the capitation on hospital administration in five districts in the Ashanti Region.

### **1.3 Hypotheses**

H1: There is relationship between capitation and hospital administration.

H2: There is relationship between capitation and health care delivery in the Ashanti Region.

H3<sub>0</sub>: There is relationship between hospital administration and health care delivery.

## **1.4 General Objective**

The general objective of the study is to evaluate the effect of capitation on hospital administrations in the Ashanti Region.

### **1.4.1 Specific Objective**

- To assess the effect of the capitation on hospital administration on the implementation over the years in the Ashanti Region
- To assess the efficiency, quality, and gaps in service utilization of capitation
- To assess the monetary aspect in regards to generation, allocation and disbursements of funds to the hospitals

## **1.5 Definition of Terms**

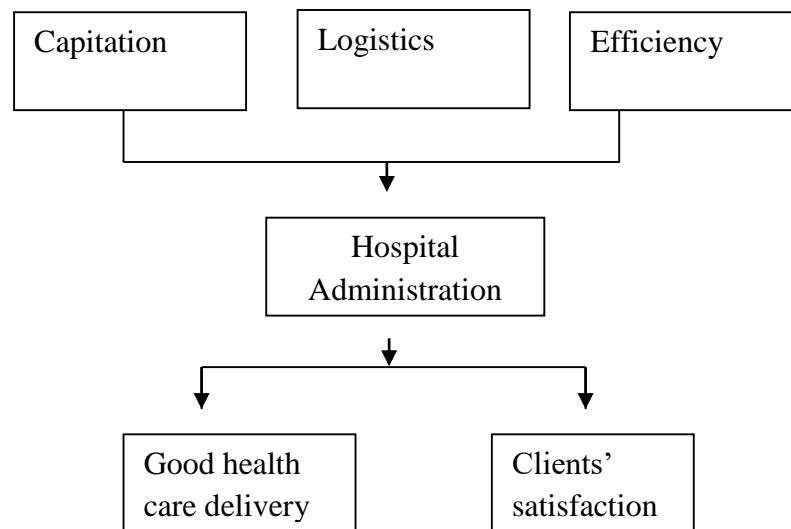
A capitation can be defined as the amount of health service funds to be assigned to a person with certain characteristics for the service in question, for the time period in question, subject to any overall budget constraints. In effect, a capitation system puts a ‘price’ on the head of every citizen (Zineldin, 2006).

Health administration is the field relating to leadership, management, and administration of public health systems, health care systems, hospitals, and hospital networks. Health care administrators are considered health care professionals (WHO, 2006).

An effect is defined as a change which is a result or consequence of an action or other cause. The effects of capitation on health care administration will be measured for the past by five years.

### 1.6 Conceptual Framework

The conceptual framework explains the underlying process which is applied to guide this study.



Author's Construct, (2014).

From the above model, capitation has a direct link with hospital administration and health delivery and therefore poor policies and increment in payments will directly affect the administration of hospital and health care delivery.

## **1.7 Chapter Disposition**

The study consists of six chapters and the first part of this study, chapter one dealt with Introduction of the study, provide a rationale for the study. It also includes the objectives of the study as well as the research questions. Furthermore, this chapter explains the scope and the significance of the research.

Chapter two dealt with the literature on Health System in Ghana, Capitation and Hospital Administration in Ghana.

Chapter three, Methodology of the study, explained and described the methodology including the research design, sampling, data collection and structure of the questionnaire.

Chapter four, Results of the study, dealt with the analysis of the data that were collected from the field.

Chapter five dealt with the discussion of findings,

Chapter Six provided recommendation and conclusion based on results of data analysis.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Since the 1980s, several countries have been introducing financial incentives and management performance objectives in the relationship between funders and providers of health care (public and private). Mechanisms such as the prospective payment system or capitation payment system for hospital production, and assessments of compliance with management objectives by hospital managers, were thought to induce efficient management behaviour, in order to achieve better resource allocation, and in most cases, to contain the escalation of costs with the health system.

However, many of these mechanisms designed to encourage efficiency, by promoting the search for good financial results, comprise simultaneously and implicitly, some compensation for the selection of patients with lower expected treatment costs (creaming) and the rejection of patients with higher costs (dumping), and a perverse incentive for reduction of service costs through cutbacks in quality of the services provided, in ways not observable by consumers (moral hazard on the supply side). This chapter reviews literature on issues of health care system, capitation and National Health Insurance Scheme (NHIS).

#### **2.2 Health Care**

Health care is the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and medical impairments in human beings. Health care is delivered by

practitioners in allied health, dentistry, midwifery-obstetrics, medicine, nursing, optometry, pharmacy, psychology and other care providers. It refers to the work done in providing primary care, secondary care, and tertiary care, as well as in public health (WHO, 2010).

Health care is conventionally regarded as an important determinant in promoting the general physical and mental health and well-being of people around the world. An example of this was the worldwide eradication of smallpox in 1980—declared by the WHO as the first disease in human history to be completely eliminated by deliberate health care interventions (WHO, 2010).

Hospitals pose many challenges to those undertaking reform of health care systems. They are, quite literally, immovable structures whose design was set in concrete, usually many years previously. Their configuration often reflects the practice of health care and the patient populations of a bygone era. Their incompatibility with present needs ranges from major design problems, such as a scarcity of operating theatres, to more minor problems, such as the lack of power sockets for the ever expanding number of electronic monitors.

Beyond conventional intuition, several researchers have theorized and demonstrated empirically that health care providers do not have incentives for reducing (or at least controlling) their costs when they know that the funder fully reimburses them proportionally to the resources spent (Newhouse, 1970; Feldstein, 1971; Evans, 1974; Ellis and McGuire, 1986; Weisbrod, 1991). As Frank and Lave (1989) noticed, the variety of mechanisms introduced to control hospital costs include regulating hospital

expenditures in capital, increasing competition in markets, increasing consumer participation in the payment of costs and changing how hospitals are paid.

In order to create incentives to reduce costs, prospective payment systems were implemented, in which providers receive a fixed amount per patient treated with a particular pathology (or group of diseases), regardless of the actual costs that result from the treatment of patients. This form of payment for hospital production induces greater efficiency in the allocation of resources in hospitals, as shown by Ellis and McGuire (1986, 1993), or Ma (1994). However, in a context of information asymmetry, such payment systems comprise perverse incentives. Given the pressure imposed by financial incentives, hospitals can achieve cost reductions in forms that are not based in efficiency gains, such as reducing the quality of care, reducing the intensity of care (i.e., reducing the amount of resources devoted to each patient), rejecting patients with higher expected treatment costs (patient selection) or disinvesting in areas that are likely to attract patients with greater intrinsic financial risk<sup>1</sup> (Freiman et al., 1989; Hodgkin and McGuire, 1994; Ma, 1994; Ellis and McGuire, 1996).

The transition from cost reimbursement to prospective payment in the Portuguese NHS hospital sector begun in 1981. The effects of this transition on the performance of public hospitals, between 1984 and 1994, were studied in Lima (2000). The author concluded that the introduction of a prospective component in the hospital payment scheme contributed to significant reductions in costs per patient admitted. Lima (2000) analyzes



the efficiencies of this transition but does not address the problem of quality/intensity reduction in services and patient selection.

Some less numerous and more recent studies analyze specifically how the type of ownership and management influences hospital performance. Most of this work is based on comparison of measures of efficiency, quality and access, between hospitals with and without profit objectives. Empirical evidence on this topic isn't clear. Some studies show that, on average, for-profit hospitals have a lower performance in terms of quality of care than non-profit hospitals and provide less access to users with higher treatment costs or users with less financial capacity (Gowrisankaran & Town, 1999; McClellan & Staiger, 2000; Silverman & Skinner, 2001).

However, other researchers conclude that differences between hospitals with and without profit objectives in terms of costs, quality and access are barely noticeable (Marsteller, Bovbjerg & Nichols, 1998; Sloan, 2000). Marsteller, Bovbjerg and Nichols (1998) suggest that the similarities between hospitals with and without profit orientation may arise because non-profit hospitals establish standards of conduct that for-profit hospitals follow to some extent. Duggan (2000) concludes that the type of ownership of a hospital influences its response to opportunities to make profit, and that the distinction between public and private seems more relevant than between for-profit and non-profit, since smooth financial constraints for public hospitals reduce the impact of financial incentives.

Other studies specifically try to identify the effects of the conversion of hospitals at the level of management or ownership type. Picone et al. (2002), for example, find evidence that the conversion of public hospitals and non-profit private hospitals into profit oriented hospitals reduces the quality of patient care, at least temporarily. Comparing hospital behaviour before and after changes in the type of management or ownership, Sloan (2000) concludes that the occurrence of the change itself is more important than the type of change.

### **2.3 Capitation in Ghana**

The capitation system of health financing was introduced in Ghana with the support of the World Bank in 2010. The pilot scheme was done in the Ashanti Region due to its central location and heterogeneous infrastructure and culture, with one year mandate ending in 2013 after which it would be evaluated to inform roll out in the other regions of Ghana. The capitation system is also expected to improve cost containment, share financial risk among scheme providers and subscribers and introduce managed competition for providers and choice for patients. Under capitation, the subscribers of the NHIS, after registration with the scheme, are asked to choose their service providers and have the flexibility to change the provider after a period of not less than six months. The capitation system is practiced alongside other provider payment mechanisms for other levels of care other than the primary level (Ansong, 2010).

The piloting of the capitation payment system in Ghana has been met with mixed reactions from practitioners, subscribers and other stakeholders in the health industry.

Under the capitation system, the amount paid to providers caters for selected first level outpatient department (OPD) primary care cases. The expected advantages of introducing per capita payments as a complementary payment method to the already existing methods in the Ghana according to the NHIS include reducing the current high transaction cost of administrative and staff time costs of claims preparation, submission, vetting and reimbursement associated with the G-DRG and fee for services for medicines to pay for first line OPD care; improving the ability of the NHIA to forecast and budget; eliminating the current problems of delayed payment of claims for the services in the per capita basket; reducing fragmentation of care and introducing continuity of care for clients by tying clients to a PPP of their choice; and finally enabling proper implementation of a referral system (Amarteyio & Yankah, 2009)

Capitation rates are usually based on future expenditures determined through an assessment of predictable risks or events including demographic variables, and more recently, such variables as previous diagnoses, self-reported health status and previous utilization. In 2004, Ghana started implementing a National Health Insurance Scheme (NHIS) to remove cost as a barrier to quality healthcare. Providers were initially paid by fee - for - service. In May 2008, this changed to paying providers by a combination of Ghana - Diagnostic Related Groupings (G-DRGs) for services and fee - for - service for medicines through the claims process.

The National Health Insurance capitation scheme has chalked significant strides after a year of piloting in the Ashanti Region. It includes the enrolment of a total of 1,817,648

as against 1,750,000 before its onset. Mr Bawa Nurudeen in 2013, the Acting Ashanti Regional Manager of the National Health Insurance Authority (NHIA), said 44 facilities belonging to the Christian Health Association Ghana (CHAG), 195 Ghana Health Service facilities, 164 private hospitals and two quasi health facilities, which are the Kwame Nkrumah University of Science and Technology (KNUST) and AngloGold Ashanti Hospitals, have registered with the scheme.

### **2.3.1 The Purpose of Capitation**

It is important to keep in mind that the imperative driving most capitation systems is that of securing control of expenditure. If the level of health care expenditure were seen to be unproblematic, then the interest in setting prospective budgets, and therefore in developing capitations, largely disappears. Under such circumstances, there is little incentive to move far from the relatively straightforward (albeit highly inefficient) fee-for-services approach to funding, possibly with added incentives to treat ‘underserved’ sections of the population. However, given that expenditure control is of concern, and that prospective budgets must therefore be set, the question arises: why use capitations? There are two principal reasons, relating to equity and efficiency.

The equity arguments tend to reflect a requirement to secure equal access to health care (for equal health needs) and/or equal payments in the form of premiums or taxes (for equal income or wealth). Explicit equity objectives underlying health care capitations are most frequently found in centrally controlled public sector health care systems.

A slightly different approach to equity underlies more devolved systems of health care, of the sort found in Scandinavia, where local governments are responsible for

organizing the majority of local health care. Here, the central government supports health care expenditure with grants in aid, the principal objective of such grants being to enable local communities to deliver some 'standard' level of health care whilst levying some standard rate of local taxation. The equity objective relating to access then remains similar to the centrally controlled state schemes. For example, the Finnish State Subsidy System seeks to secure 'equality of opportunity of access for equal need' (Ministry of Social Affairs & Health, 1996). However, local communities might then enjoy a certain amount of freedom as to the level of health care they choose to offer, the associated local taxes they levy, and the user charges (co-payments) they levy. Thus such schemes seek implicitly to offer equity of opportunity both in terms of access to health care and in terms of levels of payment (in the form of local taxes and charges).

Implicit equity objectives on the payment side also underlie some of the schemes of social insurance found in northern Europe. For example, the risk adjustment scheme in use in German health care has the predominant objective of reducing variations in insurance premiums between plans (Files & Murray, 1995). Less explicit adjustment schemes used in Japan and France, where a citizen's choice of insurance plan is limited, appear to have similar objectives (Hoffmeyer, & McCarthy, 1994).

Efficiency objectives are implicit in most capitation schemes, in the sense that all such schemes are embedded within a budgeting system which seeks to make purchasers and providers more responsive to issues of the costs and benefits of their actions. However, efficiency considerations tend to be most conspicuous in the capitation schemes used for health care systems with competitive health plans, such as those found in Belgium, Germany, Israel, the Netherlands, Switzerland, and the United States Medicare system.

In such systems there is usually a legal requirement for plans to set premiums which are independent of a member's health status, or the number of dependants covered by the insurance. Furthermore, if premiums are income-related (as for example in the Netherlands or Germany) plans would – if unconstrained by regulation – wish to recruit high income members in preference to otherwise identical low-income citizens, and members with low numbers of dependants in preference to those with large dependent families.

This situation gives competitive health plans a strong incentive to 'cream-skim' healthy, young, rich citizens, with low numbers of dependants. That is, they have an incentive to scrutinise potential members to assess whether or not their expected annual costs exceed their capitations, and to reject applications for whom this is the case. Even if 'open enrolment' is stipulated (under which a plan must in principle accept all applicants). Newhouse (1994) shows how plans can effectively deter high risk applicants, or encourage high risk members to leave the plan. If left uncorrected, cream-skimming would lead to increasing inequalities in premium rates and profit levels between plans that practised cream-skimming and those that did not do so. In the extreme, it might lead to certain sections of the population being unable to find insurance.

In this context, it is worth noting that many of the systems of 'managed competition' between health plans are highly regulated, and in practice offer the plans little scope to secure efficiency improvements from providers, who continue to be reimbursed on a fee-for-service or national standard fee basis. This lack of leverage in pursuing provider efficiency increases the incentive for plans to target their energies either towards the socially wasteful activity of cream-skimming, or towards the inefficient practice of

quality skimping (for example, delivering less than the socially desirable level of care to high needs patients). In these circumstances, the purpose of the risk adjustment scheme is to seek to reduce the manifest inefficiencies that emerge.

The policy prescription of capitation emerges from both the equity and efficiency arguments sketched above. Essentially a capitation seeks to answer the question as to how – given that health care expenditure is to be constrained – the limited resources available should be distributed between health care plans. The purpose of a capitation is to ensure that plans should receive the same level of funding for people in equal ‘need’ for health care, regardless of extraneous circumstances (such as area of residence and level of income). A well designed capitation system may in many circumstances be able to address both efficiency and equity considerations of the sort described above.

### **2.3.2 Pilot Implementation of Capitation in Ghana**

The NHIA planned and piloted a capitation payment system (per capita payment system) for Primary Health Care (PHC) services in the Ashanti Region in 2012. Although the study examined actor dynamics in relation to the pilot implementation of the policy, it drew on issues about the policy content, the context and process of the capitation policy.

2.2.2.1 Context: Context according to Walt and Gilson “refers to systemic factors- political, economic and social both national and international- which may have an effect on health policy”. The Ashanti Region is the most populous region in Ghana with all the various ethnic groups. It has all the characteristics of urban, suburban, rural and is

the most central of Ghana. Nearly seventy per cent (69.0 per cent) of the households in the region have access (geographic) to a health facility. Access to health services is better in urban areas (81.6 per cent) than in rural (55.6 per cent) areas. Rural poor households record the lowest access rate of 48.4 per cent forecast and budget due to inconsistencies in claims that were reported by providers. Anecdotal and research evidence have reported fraud and inconsistencies in reported claims. All these problems resulted in cost escalation and the sustainability of the NHIA became an issue of concern.

The Region has thirty (30) administrative districts which are made up of one (1) Metropolitan Assembly, seven (7) Municipal Assemblies and twenty-two (22) District Assemblies. Apart from the fact that the pilot year was an election year, the Ashanti Region has been described as the strong hold of the New Patriotic Party.

2.2.2.2 Content: The objectives of the per capita payment system include; improvement in cost containment, sharing financial risk between schemes, providers and subscribers as well as introducing managed competition for providers and choice for patients. Other objectives were to improve efficiency and effectiveness of health service through more rational resource use, correct some imbalances created by the G-DRG, simplify claims processing and address difficulties in forecasting and budgeting. The main components of the capitation policy were centred around the following; Package of Primary care services, Capitation Rate, Enrolment of Client to PPP, General and financial management and reporting system and quality monitoring systems.



Package of Primary Care Services: Under the proposed capitation system, the amount paid to providers will cater for selected OPD primary care cases. There are five hundred and thirty (530) health facilities in the region. The Ghana Health Service operates about 32% of all health facilities in the region. Most of the healthcare facilities in the Ashanti Region provide mainly OPD services. Health Facilities by ownership are as follows; Government: 170 Mission: 71 Private: 281 Quasi Government: 08. There were massive administrative and staff time costs from claims preparation, submission, vetting and reimbursement under the current G-DRG and fee for services for medicines payment for first line OPD care. There were problems of delayed payment of claims – for the monies were paid in advance to providers. The NHIS had difficulties to classified as the PHC bundle include; Antenatal Care, Postnatal Care, Normal delivery including episiotomy, blood sugar (rapid test if no laboratory is present), Hb (rapid test if no laboratory is present) urine for routine examination (dipstick if no laboratory is present). It also includes OPD consultation with a trained primary care prescriber and routine maintenance care for non-insulin-dependent diabetes and hypertension(ambulatory care sensitive chronic conditions) once clients have been stabilized at a specialist review and related laboratory tests will be covered by DRG with referral from the PHC providing giving maintenance care.

Enrolment of Client to PPP: Under the Ghana capitation model, clients are required to voluntarily choose their PPP. Clients are expected to be enrolled to accredited primary provider facilities within their district of residence on the basis of managed open enrolment that promotes healthy competition. Specialist clinics cannot be selected as PPP under the policy. New members of the scheme will have the opportunity of

selecting their PPP at the time of enrolment. Clients have the option to change their PPP a maximum of two times a year. Each primary provider shall be allowed a predetermined maximum membership.

Referral: Under the per capita payment system, services beyond the primary care package will only be paid for if the client was referred by the primary care provider by filling a standard National Health Insurance referral form. Bills from accredited non-primary care providers will only be reimbursed if accompanied by the standard referral form as evidence that the client first passed through the PPP.

Process: Process within Walt and Gilson's triangle considers amongst other things how policies are implemented. For the purposes of understanding the various actor dynamics this study has categorised the processes leading to the pilot implementation into three main phases namely: the pre-implementation phase, the implementation phase and the post implementation phase.

The pre-implementation phase: This was the period beginning July 2010 to December 2011. A National Capitation Technical Committee (TSC) was set up and chaired by Dr Irene Agyepong with representation from all major of health care providers; Ghana Health Service, Christian Health Association of Ghana (CHAG), Ghana Arm Forces Health Services, Private Medical Health Providers, the Pharmaceutical Association of Ghana, National Health Insurance Authority (NHIA) and health financing experts. In addition, some external consultant was contracted to provide support to the TSC (HIP, 2010). A similar team as existed in the National level was replicated at both the Regional and District levels. Activities at this stage

include; making final design decisions, conducting stakeholder consultations, developing methodology for calculating base rate, upgrade public facilities, develop common management arrangements for NHIA, District Schemes and providers amongst others.

The implementation phase: This was the period beginning January 3<sup>rd</sup> 2012 to January 3<sup>rd</sup> 2013. From the literature, the pilot implementation of capitation was scheduled for a year. The main highlights of this phase were that PPP's begun providing services to subscribers under capitation as well as monitoring and analysis of pilot results (HIP,2010).

The post implementation period: This was the period between Jan 4<sup>th</sup> 2013 to July 15, 2013. The main activity under this period is an evaluation and a potential nationwide implementation of capitation policy.

## **2.4 Health Care Financing in Ghana**

Health care financing involves mobilizing and allocating funds to regions and population groups for specific types of health care (Esen, 2011). Health care financing is one of the six building blocks of the World Health Organization's (WHO) health systems strengthening framework (WHO, 2010). From the pre-colonial era, successive governments have made strategic decisions concerning the future direction of health care financing as a strategy to remove financial barriers to healthcare. Prior to the advent of the National Health Insurance Scheme, Hospital fees were used as a means of financing health. Hospital fees were introduced following the enactment of the first Hospital and Dispensary Fee ordinance in 1898 (Nyongato and Kutzin 1999). Under the

Convention People's Party (CPP) Government, healthcare was virtually free. With the overthrow of Ghana's first President, Healthcare financing in Ghana saw a complete 'U-Turn'. Under the National Liberation Council (NLC), Ghanaians were asked to pay for their health care through the Hospital Fees Decree, 1969 (NLCD 360). This later became what we now know as 'Cash and Carry System'. This system of healthcare financing survived until 2004 when the present health insurance system came into being. There is evidence that as part of its healthcare financing reform in the 1970s, the Progress Party (PP) considered health insurance as a financing option. In the period leading to the introduction of National Health Insurance the implementation of user fees had become uneven with total disregard for equity mechanisms and provisions in the legislation (Coleman, 1997). Ghana initiated a process of replacing out-of-pocket payments at point of use to national health insurance in 2001 (Arhinful 2001; Agyepong & Adjei, 2008).

## **2.5 Overview of the NHIS Policy**

The development of the human resources of the country has been identified as one of the key priorities of government. Under the Ghana Poverty Reduction Strategy (GPRS I: 2003 - 2005), a number of measures were initiated in the medium term to enhance access to, and delivery of health services. Considerable investments were made in the provision of health care facilities, with positive outturn in a number of health indicators. However by the end of the implementation of GPRS I, a significant proportion of people still did not have adequate access to quality health services with regional and socio-economic disparities. These variations in health status were attributed, in part, to

geographical barriers, financial barriers, service delivery constraints and broad socio-cultural barriers, including gender.

The “Cash and Carry System” of paying for health care at the point of service was observed as a key financial barrier to health care access for the poor. To remove the financial barrier to health services and ensure affordable and sustainable health care arrangement for the poor, the government initiated the National Health Insurance Scheme in 2003 aimed at abolishing the “Cash and Carry System” and limiting out of pocket cash payment at the point of service delivery.

The National Health Insurance Act, 2003 (Act 650) established the National Health Insurance Scheme (NHIS) with the aim of increasing access to health care and improving the quality of basic health care services for all citizens, especially the poor and vulnerable. The law establishing the scheme allows for the concurrently operation of District-Wide (Public) Mutual Health Insurance schemes, Private Mutual Health Insurance schemes and Private Commercial Health Insurance schemes. However the schemes would only financially support District-Wide (public) Mutual Health Insurance Schemes. The initially defined benefit package under the scheme includes inpatient hospital care, outpatient care at primary and secondary levels, and emergency and transfer services. Each district mutual health insurance scheme also uses its discretion to determine additional benefits a scheme could provide.

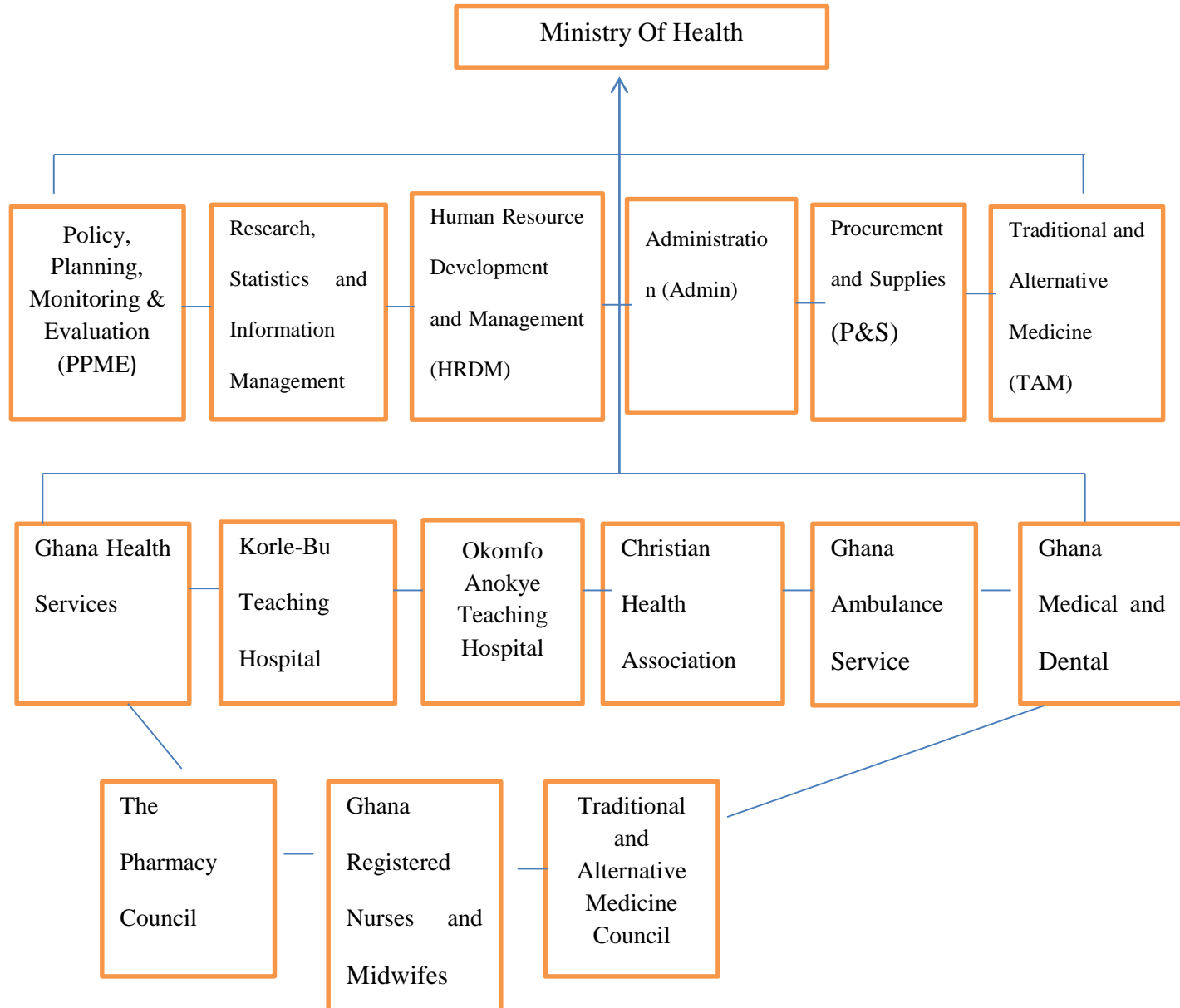
## **2.6 Structure of Health Care in Ghana**

The management and administration of health care is another sector vital to the delivery of health care services. Two governmental bodies oversee health care infrastructure and

delivery in Ghana – the Ministry of Health (MOH) and Ghana Health Services (GHS). Until 1996, the MOH oversaw the direct provision of health service delivery in Ghana. Today, health service delivery is provided by GHS. The goal of MOH is, “to improve the health status of all people living in Ghana through effective and efficient policy formulation, resource mobilization, monitoring and regulation of delivery of health care by different health agencies” ([www.moh-ghana.org](http://www.moh-ghana.org)).

MOH works on policy formation, the monitoring and evaluation of health service delivery throughout the country, resource allocation for health services and the regulation of health services delivery. MOH also develops the framework for the regulations of food, drugs and health service delivery.

**Figure 2.1: Structure of Health Care in Ghana**



With the passing of Act 525, the responsibilities of health service delivery were consolidated within GHS. According to MOH, there was not a great deal of actual separation of service provision, and in order to fully carry out the Ministry's duty of policy formation and regulation oversight, there was a need to rethink the role of MOH in Ghana's health care delivery system ([www.moh-ghana.org](http://www.moh-ghana.org)).

The second governmental body that works with health care in Ghana is GHS, an autonomous Executive Agency responsible for implementation of national policies under the control of the Minister for Health through its governing Council - the Ghana Health Service Council. The GHS "continues to receive public funds and thus remains within the public sector" (Ghana Health Services website). This organization is the service provision arm of the health care system in the country, and works to implement national health care policies, provide health care services and manage resources for health care delivery. The functions of GHS include:

- Developing strategies and technical guidelines to achieve national policy goals and objectives
- Undertaking management and administration of health resources within GHS
- Promoting healthy living and habits among residents
- Establishing effective disease surveillance, prevention and control
- Determining charges for health services (contingent on approval from MOH)
- Providing in-service training and continuing education



- Performing any other functions relevant to promotion, protection and restoration of health.

## **2.6 Regional and District Administration**

As a result of decentralization and health sector reform, services are integrated as one goes down the hierarchy of health structure from the national to the sub-district.

### **2.6.1 Structure of Delivery of Services**

At the regional level, curative services are delivered at the regional hospitals and public health services by the District Health Management Team (DHMT) as well as the Public Health division of the regional hospital. The Regional Health Administration or Directorate (RHA) provides supervision and management support to the districts and sub-districts within each region.

At the district level, curative services are provided by district hospitals many of which are mission or faith based. Public health services are provided by the DHMT and the Public Health unit of the district hospitals. The District Health Administration (DHA) provides supervision and management support to their sub-districts.

At the sub-district level both preventive and curative services are provided by the health centers as well as out-reach services to the communities within their catchment areas. Basic preventive and curative services for minor ailments are being addressed at the community and household level with the introduction of the Community-based

Health Planning and Services (CHPS). The role played by the traditional birth attendants (TBAs) and the traditional healers is also receiving national recognition.

### **2.6.2 Health Center**

#### ***Functions and Roles***

The health center has traditionally been the first point of contact between the formal health delivery system and the client. It is headed by a Medical Assistant and staffed with program heads in the areas of midwifery, laboratory services, public health, environmental, and nutrition. Each health center serves a population of approximately 20,000. They provide basic curative and preventive medicine for adults and children as well as reproductive health services. They provide minor surgical services such as incision and drainage. They augment their service coverage with outreach services and refer severe and complicated conditions to appropriate levels. The polyclinic is the urban version of the rural health center. Polyclinics are usually larger, offer a more comprehensive array of services, are manned by physicians, and can offer complicated surgical services. They are mainly in metropolitan areas (MoH, 2012).

### **2.6.3 District Hospitals**

#### ***Functions and Roles***

District hospitals are the facilities for clinical care at the district level. District hospitals serve an average population of 100,000–200,000 people in a clearly defined geographical area. The number of beds in a district hospital is usually between 50 and

60. It is the first referral hospital and forms an integral part of the district health system.

A District Hospital should provide the following:

- Curative care, preventive care, and promotion of health of the people in the district
- Quality clinical care by a more skilled and competent staff than those of the health centers and polyclinics
- Treatment techniques, such as surgery not available at health centers
- Laboratory and other diagnostic techniques appropriate to the medical, surgical, and outpatient activities of the district hospital
- Outpatient and in-patient (MoH, 2012).

## **2.7 Challenges of NHIS Capitation in the Ashanti Region**

The National Health Insurance Authority (NHIA) started the implementation of the Capitation on pilot basis, and the programme rolled out to cover the entire country. The NHIA says it undertook 16 months nationwide public education to get the subscribers, health providers and policy makers to appreciate the need to review the reimbursement policy. The health insurance scheme was instituted to replace the cash and carry system. Available information indicates that, at the time the NHIS Bill was passed in 2003, Capitation was among the implementation alternatives suggested to make the scheme sustainable in view of the high cost involved.

Capitation is defined as a payment system in which all service providers are paid, in advance, a predetermined fixed rate to provide services for a given period. The amount is paid whether or not people access health care within the payment period. This system in the view of the NHIA is to check the abuse in the existing payment system by service providers leading to false payment amounting to millions of Ghana Cedis according to special audit reports. Capitation was therefore seen as an alternative means to reduce the abuse.

The Ashanti Region with a population of over five million was chosen for the pilot. The pilot programme has met fierce resistant from medical professionals including, the Ghana Medical Association, the Society of Private Medical and Dental Practitioners Association, the Physician and Laboratory Association, and lately the Ashanti Region Caucus in Parliament. There has also been demonstration by a group calling itself Asante Development Union calling for the suspension of the pilot capitation scheme and even went as far as demanding the resignation of the Chief Executive of the NHIA. While critics of the Capitation say it is a good policy, they maintain that the public education about its implementation is not enough to ensure its success. The critics claim that the quality of health delivery has been affected because the service is only limited to provision of primary healthcare, and does not cover more drugs and diseases.

The Society of Private Medical and Dental Practitioners Association which takes care of 30 percent of healthcare delivery in the Ashanti Region withdrew from the Capitation saying, if the system is not suspended to allow for broader consultations, it could collapse their facilities. The Ghana Medical Association has also informed the Ministry

of Health, the NHIA, and Parliamentary Select Committee on Health about certain issues that need to be addressed before the implementation of the policy. It is important for the officials of the NHIA to listen to these concerns and not wait for the capitation scheme to be reviewed as and when necessary. This is because healthcare is so sensitive that it cannot pass that test without losing human lives. An independent survey carried in seven private and public health facilities within three weeks into the implementation of the policy showed a disturbing trend. There is a clear indication that the nation is preparing for the deadly cash and carry system, because OPD attendance at all the facilities has reduced and in some cases below five percent. While clients who are the patients claim they do not understand the system, the health providers are also saying there is something wrong. Another disturbing feature is that, the debate over the implementation has taken political dimension, and this is not healthy in view of how dirty our politics tend to be in matters of national significance. While one political divide thought the pilot in Ashanti is a good intention to be able to roll out across the country by the beginning of next year, another party believes that it started in Ashanti with deliberate intention to make the people to resort to the old cash and carry system. What is evidently clear is that, no matter what, both have a genuine case. Nothing should prevent the policy makers to have a second look at the policy on capitation because if care is not taken the scheme is likely to backfire after being acclaimed internationally as one of the best healthcare policies in the world (Nsowah-Adjei, 2005).

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the methodology employed to achieve the research objectives. The discussion centered around the research design, the population, the sample, sampling technique, research instruments used including the validity and reliability of these instruments. The data collection process and the process to analyse the collected data were described. All these were to ensure that the objectives of the research were achieved.

The techniques employed and the ways they are applied in conducting any research, can considerably affect the result of a study (Kumekpor, 2002). It is therefore imperative that reliable methods are devised to obtain information in such a way as to make the results tenable, dependable and predictive. Research methodology is defined as the procedural framework within which the conduction of a research is guided (Remenyi, Williams, Money & Swartz, 1998; Saunders, Levis & Thornhil, 2007).

#### **3.2 Research Design**

“Research design refers to a plan, blueprint or guide for data collection and interpretation- a set of rules that enables the investigator to conceptualize and observe the problem under study” (Adams & Schvaneveldt, 1985. p.12).

A cross-sectional survey approach with a quantitative research design was used in this study. A cross-sectional study (snapshot description at a single point in time) is the most frequently used descriptive design in most business research (Neuman, 2007). The purpose of a cross-sectional study is either to describe the incidents of phenomena, or explain how factors are related in organizations (Saunders, Lewis & Thornhill, 2007).

### **3.3 Profile of Kumasi Metropolitan Assembly**

The Kumasi Metropolis is centrally located in the Ashanti Region of Ghana. Its unique central position makes it accessible from all corners of the country. It is the second largest city in the country and the administrative capital of Ashanti. It is a fast growing Metropolis with an estimated population of more than two million people and an annual growth rate of about 5.4%. The Metropolis is about 254 kilometres; its physical structure is basically circular with a central located commercial area.

There are concentrations of economic activities in the city. The first and most important location is the Central Business District (CBD), which embraces the Kejetia Lorry Park, the Central Market and the Adum Shopping Centre. The other economics nodes include the Suame Magazine (Vehicle repair centre) the Kaase/Asokwa Industrial Area and the Anloga Wood Market. Most industries which deal in Timber processing, logging, Food processing and Soap making are

concentrated at the Kaase/Asokwa Industrial Area. There is also number of satellite markets in the metropolis. These include Asafo Market, Bantama Market, Oforikrom Market and Atonsu Markets.

It is estimated that 48%, 46% and 60% of the Metropolis are urban, peri-urban and rural respectively, confirming the fast rate of urbanization.

### **3.3.1 Districts**

The districts and municipal hospitals that the study covered are; Kumasi metropolitan, Bosomtwe, Atwima Nwabiagya district, Ejisu Juaben Municipal and Mampong Municipal.

The Kumasi Metropolitan Assembly is one of the twenty-seven (27) districts of Ashanti, Ghana. It corresponds to the city of Kumasi, the district's capital.

The Metropolitan Health Services are organized around five (5) Sub Metro Health Teams; namely, Bantama, Asokwa, Manhyia North, Manhyia South and Subin. The Metro Health Team is led by its Director of Health Services who has the overall responsibility for planning, monitoring and evaluating the performance of the Health Sector in the metropolis.

The city has a number of health facilities in both the public and private sectors. Notable among them are the Komfo Anokye Teaching Hospital (KATH), which is one of the two (2) national autonomous hospitals, four (4) quasi health institutions, five (5) health Care Centres owned by the Church of Christ and the Seventh-Day Adventist Church.



Analysis of the status of the District Mutual Health Insurance Scheme (DMHIS) reveals a low patronage of the scheme. The four Sub Metropolitan District Councils, namely; Manhyia, Bantama, Subin and Asokwa stands at 10.5%, 7.2%, 12.3% and 8.7% respectively.

The Bosomtwe District is one of the twenty-seven (27) districts in the Ashanti Region of Ghana. Its capital is Kuntanase. The Bosomtwe District is in the Ashanti Region of Ghana. It was formerly part of the Bosomtwe-Atwima-Kwanwoma district. Kuntanase, the district capital is about 28km from Kumasi. The district shares common borders with Ejisu-Juaben district and Kumasi Metropolis on the North; Asante Akim North district on the East, Atwima Kwanwoma District on the West and the Amansie-East district on the South. The district has three sub-districts and 63 communities with an estimated population of 93,498. The main occupation of the populace is farming. Plantain, cassava, maize, sugarcane and shallots are the major crops grown. The main occupation of the people around Lake Bosomtwe is fishing. All the communities are connected to the national grid.

There are 15 health facilities in the district. These are made up of two (2) hospitals, nine (9) health Centers, three (3) private maternity homes and one (1) private clinic. There are sixty-eight (68) Community Based Surveillance Volunteers (CBSVs) who have been trained to support community health activities in the district. They record and report on monthly basis diseases, deliveries and deaths in their catchments areas. It is interesting to note that all these CBSVs can read and write and they are evenly distributed throughout the district with at least one in a community. The scheme which caters for the health needs of the people by paying a yearly premium to access health care has

enjoyed higher registration rate within the district. Nevertheless many people do complained about the amount of premium charged and the type of drugs covered by the NHIS.

Nkawie is a small town and is the capital of Atwima Nwabiagya district, a district in the Ashanti Region of Ghana. Nkawie is bounded by two other towns - Toase and Nkawie Panin. It is home to prosperous business men in Ghana. There is a government hospital, a fire service station, a secondary technical institution and other government institutions like the courts, education offices, health insurance office, etc. Nkawie is the home town of former Ghanaian president.

The Ejisu-Juaben Municipal is one of the twenty-seven (27) districts in the Ashanti Region of Ghana. Its capital is Ejisu, the hometown of the legendary Queenmother, Yaa Asantewaa. The municipality stretches over an area of 637.2 km<sup>2</sup> constituting about 10% of the entire Ashanti Region and with Ejisu as its capital. The municipal has the dominant sex to be males constituting about 50.2 percent of the population whilst the females represent about 49.8 percent of the total population. The age structure is basically youthful thus indicating that the working age is more than those in the dependant age. The municipal is basically rural with only 5 out of the 84 settlements being urban. These 5 towns account for 30.18% of the total population with the capital covering 9.2%.

The Mampong Municipal District, formerly the Sekyere West District is one of the twenty-seven (27) districts in the Ashanti Region of Ghana. Its capital is Mampong. The Municipal is located within longitudes 0.05 degrees and 1.30 degrees west and latitudes

6.55 degrees and 7.30 degrees north, covering a total land area of 2346km<sup>2</sup>. It has about 220 settlements with about 70 percent being rural. The rural areas are mostly found in the Afram Plains portion of the municipality where Communities with less than fifty (50) people are scattered here and there. The population of the municipality is currently more than 88,000 and is fairly distributed. The Municipality is generally rural in nature. About 36.5% of the population reside in Urban centers as compared to the National figure of 32%.

### **3.4 Target Population**

Population is the entire group of subjects of interest that the researcher wants to investigate (Sekaran & Bougie, 2010). Kumekpor (2002) has noted that the population of a study may be considered as the number of all units of the phenomenon to be investigated that exists in the area of investigation.

The population in this study were patients from five selected hospitals in the Ashanti Region. These hospitals include: Kumasi Metro, Bosomtwe, Atwima Nwabiagya, Ejisu Juaben and Mampong. In all, 200 people constituted the population for the study.

### **3.5 Sample and Sampling Procedure**

Getting a sample in a research study is very important. This is because all members of the study area cannot be studied. “You cannot study everyone everywhere doing everything” (Miles and Huberman, 1994).

Out of the accessible population, a sample size of 200 employees were selected for the study. The sample size was determined based on the mathematical equation developed by

Watson (2001) (see Appendix II for computations). In this study, both purposive and simple random sampling methods were used in sampling respondents for this study. The purposive method was used in the selection of the patients of the five selected hospitals. The researcher purposively recruited the claim managers because of their knowledge and role in the administration of claims. The patients were purposively selected based on their records and knowledge with capitation in the various hospitals.

The simple random sampling was used after eliminating those who did not meet the eligibility criteria. The researcher got the list of the respondents from the various hospitals. Those lists were mixed up and the researcher independently picked up the required number constituting the sample size. The respondents were identified from the various hospitals and permissions were obtained from the various hospitals and respondents. Consecutive numbers have been assigned and the respondents were randomly selected. This method was chosen because each respondent had an equal and independent chance of being selected for the study. However, the choice of these techniques was based on Amedahe's (2002) assertion that proportional stratified sampling guarantees proportional representation of the participants whereas simple random sampling gives each and every participant an equal and calculable chance of being selected during the sampling process, which invariably enables the investigator to generalize his/her findings beyond the sample distribution.

### **3.6 Questionnaire Administration Procedure**

The sources of data for the study were collected from primary and secondary. The questionnaire and the interview schedule were the major instruments that were used for the data collection. The two instruments were used to provide two data sources that will complement each other.

The secondary method of data analyzed existing literature on the topic being studies. These included textbooks, reports, newspapers, journals, bulletins and documents presented by experts in capitation and hospital administration.

### **3.7 Data Analysis**

This section discusses the regression analysis and Pearson product correlation that were used to analyze the data gathered for the study. The variables considered were capitation and hospital administration. Once the questionnaires were completed, the researcher coded the responses. These scores were captured using Statistical Packages for Social Sciences (SPSS, version 20) for statistical analysis. The hypotheses were tested using Regression Analysis and Pearson Product Moment Correlation.

### **3.8 Ethical Considerations**

Ethical clearance was first sought from the ethical review board of the school of medical sciences-KNUST.

Permission was then sought from districts hospitals involved in the study. Before administering questionnaires, informed consent was sought from participants involved in the study after carefully explaining to them, the relevance of the study.

### **3.9 Reliability and Validity of the Study**

Reliability and validity is used to reduce the risk of bias responses when applying a theory to empirical findings. According to Saunder et al (2003), reliability differs from validity in the sense that reliability has to do with generalisation of the result and validity has to do with whether the observation shows reality.

#### **3.9.1 Reliability**

According to Saunder et al (2003), four threats to reliability exist, “subject or participant error, subject or participant bias, observer bias and observer error”.

- **Subject or participant bias:** this arises from lack of knowledge or experience of respondent. To avoid this, our respondents were first asked if they are familiar with both brands, only those familiar with both brands were given the questionnaires to answer. Although this might have some effect on their responses.
- **Subject or participant error:** this arises from respondents feelings such as physical condition, mental and stress at the time of answering the question. This can lead to low response, respondent guessing answers or unable to read and understand the question.

- **Observer's bias:** according to Saunder et al (2003), observer's bias poses the most serious threat to reliability and can have effect on the result if constructed according to our interpretation. It might reflect a different meaning to the respondent. A pre-test was conducted in order to increase the reliability of the questionnaires.
- **Observer's error:** My presence, when the respondents were answering the questions helped to reduce the observers' error in the survey.

To ensure the above, the researcher submitted the questionnaire for a scrutiny which enhanced its clarity. Also, to ensure the above, the researcher made sure that the questionnaires were steady and sincere responded to using the scales and options given and the respondents' attitudes while responding to the instrument. Thus, the researcher was careful in the choice of words to ensure clarity and relevance with regards to sentence construction.

### **3.9.2 Validity**

Saunders et al (2000), agree that in any research, it is expedient as a matter of reliability and validity check that the questionnaire should be pre tested before final administration. A preliminary draft of the questionnaire was given to claim managers, hospital attendants to test the clarity and meaningfulness of the questions. After that the final questionnaire was first given to the supervisor assess its content and construction. Then, it was pre- tested to a sample of twenty of hospital attendants by simple random method. This small size was guided by Saunders et al (2007) that the minimum of ten

(10) members for pre-testing is adequate. Each of them was told the purpose of the questionnaire and assured of anonymity before they were given the questionnaire to respond,

Finally, after adjustments were made to get more effective instruments, the questionnaire was administered to the target population through personal contact by the researcher. They were first informed of the purpose, assured anonymity and confidentiality of responses.

The exact responses were analysed to bring out the effects of capitation on health care administration in the five selected districts. This therefore creates room for generalisation of the results.

Cronbach's alpha, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used to measure the reliability and internal consistency of the data. The KMO values for the individual items and Bartlett's test revealed that the correlations between items were sufficiently large for the correlation analysis and regression analysis. Finally, all quantitative data were inspected for statistically significant relationships using correlational and regression analyses. Besides, all the variables were continuous and the hypotheses were tested at the 0.05 level of significance.



## **CHAPTER FOUR**

### **RESULTS**

#### **4.1 Introduction**

This chapter deals with the presentation and analysis of data which were collected from the respondents. The data is analyzed both quantitatively and qualitatively with the use of frequency and percentages. Tables and figures are used to represent the data. Inferences are drawn based on the analysis. The data is analyzed based on the objectives of the study. The main objective of the study is to assess the effect of capitation on Hospital Administration in the Ashanti Region. Two hundred enrollees, ten hospital management staff each from all the five districts were used in the analysis.

#### **4.2 Demographic Characteristics of Respondents**

Demographic features of the population studied include: gender, age, marital status, education, position and tenure in office.

**Table 4.1: Demographic Characteristics of Respondents**

Variable	Characteristics	Frequency	Percent
Sex	Male	103	41.2
	Female	147	58.8
Age	20-29	95	38.0
	30-39	45	18.0
	40-49	67	26.8
	50+	43	17.2
Educational Level	No formal Education	23	9.2
	SSS	48	19.2
	Diploma/HND	56	22.4
	1st Degree	78	31.2
	2nd Degree	45	28.0

**Source: Field Survey, 2014**

Table 4.1 shows that 58.8% of the respondents interviewed were female whilst the remaining 41.2% were male. The table furthers shows that majority (38%) of the respondents were between the ages of 20-29, 26.8% of the respondents were between the ages of 40-49 years followed by those between the ages of 30-39 years constituting 18.0%. The remaining 17.2% are those who are 50 years and above.

Educational backgrounds of the respondents were not left out in this study. Table 4.1 revealed that 31.2% of the respondents were 1<sup>st</sup> degree holders, 22.4% were HND holders, 19.2% being SSS leavers and 18.0% were 2<sup>nd</sup> degree holders. This shows that majority of the respondents were degree holders.

### 4.3 Capitation

**Table 4.2: Clients Access to Hospitals during pre and post capitation**

<b>Clients access to Hospital during Pre-Capitation</b>			
Year	Number per day	Number per week	Number per year
2007	112	789	41032
2008	126	889	46264
2009	132	930	48371
2010	157	1103	57367
<b>Clients access to Hospital during Post-capitation</b>			
Year	Number per day	Number per week	Number per year
2011	160	1129	58719
2012	127	894	46510
2013	114	803	41774

**Source: Field Survey, 2014**

The above table shows the average attendance of the clients during the pre-capitation and post capitation.

During the pre-capitation, it was clear that the number that attended the hospitals increased from 2007- 2010. But a look at the post capitation era shows that the number rather decreased from 2011-2013.

#### 4.4 Data on Monthly Claims Payment

In 2011 fee for service (FFS) was the only form of payment used in paying health providers. The table below gives the pictorial view of the various payments methods from January to December in 2011, 2012 and 2013.

**Table 4.3:Data on Monthly Claims Payment**

Month	Claims Payment 2011 GH¢	G-DRG 2012 GH¢	Capitation 2012 GH¢	Total 2012 GH¢	G-DRG 2013 GH¢	Capitation 2013 GH¢	Total 2013 GH¢
Jan	1,970,804.36	21,790.55	368,124.19	389,914.74	102,049.26	279,203.77	381,253.03
Feb	2,296,867.22	4,554,033.48	276,939.30	4,830,972.78	864,709.28	239,094.26	1,103,803.54
Mar	2,244,028.16	2,191,588.32	398,756.78	2,590,345.10	1,893,359.59	496,831.80	2,390,191.39
April	1,800,878.21	64,169.76	350,888.47	415,058.23	1,604,960.27	495,739.77	2,100,700.04
May	1,815,978.06	1,378,191.67	282,211.90	1,660,403.57	999,723.82	494,589.04	1,494,312.86
June	1,887,935.06	932,636.33	327,339.20	1,259,975.53	1,414,857.02	490,192.22	1,905,049.24
July	91,828.77	1,174,524.50	344,610.14	1,519,134.64	1,040,662.00	496,576.66	1,537,238.66
Aug	1,938,764.07	76,284.64	272,258.23	348,542.87	616,341.78	558,354.16	1,174,695.94
Sept	1,742,418.55	3,138,689.01	381,327.87	3,520,016.88	1,202,010.99	585,141.98	1,787,152.97
Oct	3,594,988.39	570,990.58	304,142.61	875,133.19	2,142,097.68	616,614.06	2,758,711.74
Nov	3,272,548.87	1,398,135.15	297,891.17	1,696,026.32	634,079.79	615,932.09	1,250,011.88
Dec	3,582,993.03	1,841,827.56	315,694.97	2,157,522.53	799,694.89	627,130.17	1,426,825.06
<b>Total</b>	<b>26,240,032.75</b>	<b>17,342,861.55</b>	<b>3,920,184.83</b>	<b>21,263,046.38</b>	<b>13,314,546.37</b>	<b>5,995,399.98</b>	<b>19,309,946.35</b>

**Source: Field Survey, 2014**

From table 4.3 it is very clear that capital programme have reduce the total claims payment in 2012 and 2013 with a total claims payment of GHS 21,263,046.38 and GHS 19,309,946.35 respectively as compared to 2011 claims payment of GHS 26,240,032.75. From the data available the total average net saving of capitation is 10.48% in 2012 and 15.21% in 2013. This indication is very positive, since it has mitigated the total claims payment drastically.

#### **4.5 Way forward for the Capitation Scheme**

The schemes outline the following as the way forward for the national health insurance authority (NHIA) for the effective and efficient continuation of the capitation programme in Ashanti region

**Table 4.4: Responses on Scheme on capitation**

<b>Scheme</b>	<b>Way Forward</b>
<b>AA</b>	1. Nationwide rollout of the capitation programme. 2. G-DRG medicine list outside capitation should be review.
<b>BB</b>	The per capital should be review annually
<b>CC</b>	The is the need for massive public education to reduce the outrage
<b>DD</b>	The need for consensus to be reach between the NHIA and the health providers.

#### **4.6 Challenges on Capitation Payment**

The following are the challenges that are affecting the capitation programme as ascertain from the respondents. Late transfer of capitation payment, some providers are unable to get the list of people capitated to their facilities on time, the amount used for blanks are not being used by the providers for the intended purpose, NHIS subscribers are forced to pay additional amount to cover their bill (co-payment).

#### **4.7 Study Hypotheses**

H1: There is relationship between capitation and hospital administration.

H2: There is relationship between capitation and health care delivery in the Ashanti Region.

H3<sub>0</sub>: There is relationship between hospital administration and health care delivery.

##### **4.7.1 H1: Relationship between capitation and hospital administration.**

Respondents were asked on capitation from their current providers or change their providers. The results, as shown in Table 4.5, indicated that age, logistics, efficiency or regional hospital, district hospital, and clinics as well as private health facilities were not significant in determining one's willingness to stay with his current healthcare provider even though their signs were expected. However, gender (female), education (secondary and tertiary except basic education though positive) had a significant positive effect on the probability of a patient staying with his/her current primary healthcare provider. Again, patients under capitation were more likely to move or change provider compared with patients under DRG/FFS (control group) since the sign of the coefficient was

negative and was also significant (i.e. p – value of 0.000 was below 0.05). This confirms the findings of Escarce et al (2003), and Sorbero et al (2003). Mission health facilities or providers had a positive significant impact on the probability of a person staying with his current provider. Thus, patients were more likely to stay with mission healthcare providers compared to public healthcare providers (control group). Again, paying additional fees was not significant in determining whether a patient would stay with the current provider or not. This is because its p – value of 0.720 was above 0.05 but its negative sign was expected.

**Table 4.5 Logistic Regression Estimates**

Explanatory variables	Estimates		
Explanatory variables	Coefficient	Standard error	P-value
Age	-.0148606	.0081664	0.069
Logistics	.810883	.2126188	0.000
Efficiency	-.000117	.0003269	0.720
Capitation	-1.666584	.2298775	0.000
District hospital	-.0814701 .	.3151742	0.796
Constant	-.2002104 .	.5639636	0.723

#### 4.7.2 Hypothesis 2: Capitation and health care delivery

##### H<sub>2</sub>: There is relationship between capitation and health care delivery

On capitation and health facilities, paying additional fees, district hospitals had signs that were expected even though they were insignificant at 95% confidence level in impacting on providers' decision to other facilities. Their p – values were above 0.05. The ownership status of facilities was significant at 5% error level since the p – values were below 0.05. This implies that capitation was significantly affected by the health care involved. Capitation, in Table 4.6, met its expected sign and it significantly impacted positively on health care delivery to refer their patients. This is because its p – value of 0.000 was below 0.05. Thus patients under capitation were more likely to be referred to other facilities than the patients under DRG/FFS (control group), and this is true at 95% confidence level. The reason for this trend could be that providers under capitation saw this as a way to dump their patients on other providers to avoid using their capitated funds. Conversely, it could also be due to inadequate medical resources, equipment, and qualified personnel in such health facilities.

**Table 4.6: Capitation and health care delivery**

Explanatory variables	Estimates		
Explanatory variables	Coefficient	Standard error	P-value
Health care delivery	.0152217	.0083842	0.069
Capitation	.9667044	.2361561	0.000
District hospital	.2238181	.3050024	0.463
Constant	-1.856545	.5825064	0.001



### 4.7.3 Hypothesis 3: Hospital Administration and health care delivery

**H<sub>3</sub>: There is relationship between hospital administration and health care delivery**

To test the above hypothesis a regression analysis was carried out as depicted in Anova Table 4.9. There was 1% level of significance since the *p-value* of the test was 0.000. Table 4.9 provides support for the proposed relationship between capitation and health care delivery ( $r^2 = 0.167$ ,  $p < .01$ ) and the conclusion is that, hospital administration is a predictor of health care delivery in the Ashanti Region. Thus, hypothesis 3 was supported.

**Table 4.7 Regression of hospital administration and health care delivery**

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.402 <sup>a</sup>	.167	.157	4.252

a. Predictors: (Constant), Health care delivery

**Table 4.8 Anova Table**

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-ratio	<i>p-value</i>
Regression	519.692	1	519.692	28.740	0.000
Residual	2676.181	148	18.082		
Total	3195.873	149			

## **CHAPTER FIVE**

### **DISCUSSIONS**

#### **5.1 Demographic Characteristics**

The study revealed that factors like payment methods significantly affect the health outcomes of patients. As revealed by the study, capitation seriously affected the health outcomes of patients. Clearly, as revealed by the results, patients under capitation had poorer health outcomes than patients under DRG/FFS. It cannot be said that age and health outcomes/status are inversely related such that age deteriorates one's health condition or otherwise. However, gender (i.e. females), income, health providers (health facilities), and education (except basic education) significantly influenced the health outcomes of patients.

#### **5.2 Discussion of Findings on Capitation and Health Administration**

##### **5.2.1 Capitation and Hospital Administration**

Findings show that NHIS patients, in general, incur lower costs when compared to patients paid by FFS. Over time, there has also been a fall in market concentration as the number of facilities participating in the NHIS increases and the size of the beneficiary enrolment at each district hospital fall. Results show that, over time, there is an increasingly competitive market structure for the NHIS sectors, as measured by concentration ratio and private sector growth. This competitive market structure is associated with higher costs of service for both public and private hospitals, especially total service and drug costs. One plausible interpretation of this finding is that hospitals compete by increasing quality. As predicted by Gravelle (1999) style, when consumers

face zero costs at the point of service and capitation fees are regulated, providers compete by increasing quality, thus incurring higher costs. This interpretation is also corroborated by the hospital interviews, showing that hospitals adopt different measures of quality assurance and marketing programs in response to NHIS incentives. Analysing the relationship between different measures of competition (such as number of hospitals, Herfindhal Index) and expenditure among private hospitals in Bangkok, Bennett (1997) also found that markets with lower concentrations are associated with higher expenditures, although her study was not specific to the NHIS market. If indeed the result could be interpreted as quality competition, then the NHIS would seem to be quite successful in motivating public hospitals to improve their quality.

The relationship between capitation and health administration was significant. This suggests that the capitation programme should be used as the only form of payment for primary care services nationwide, so as to avoid the huge expenditure burden on the authority (NHIA) through overbilling on the part of service providers.

Capitation makes health service providers financial risk bearers; hence they became cautious with the cost that will be incurred on each enrollee on a visit to their facility. The capitation payment for 2012 is 6%, 9% in 2013, G-DRG for 2012 26% and 20% in 2013 comparing the two payment system capitation is best, so the NHIA should in the near future adopt Capitation as the payment method for both primary and tertiary health care services in Ghana. Data available support capitation payment method as an efficient system.

### 5.2.2 Health Care Delivery and Hospital Administration

The study revealed that there is a significant relationship between health care delivery and hospital administration. This means that there is the need for hospital workers to have good relationship among themselves and the patients. Concerning provider – patient relations, the study revealed that private and mission healthcare providers had better relations with their patients than public health providers. Again, malaria patients under capitation were found to have had poorer relations with their providers than their counterparts under DRG/FFS. Providers were more likely to treat richer patients with respect as income was found to have a significant influence on the likelihood that providers would have better relations with their patients. Inpatients, teaching or regional hospitals, district hospitals, and clinics, education, payment of additional fees, gender and age were not found to have any impact on the provider – patient relations.

### 5.2.3 Capitation and Health Care Delivery

The study revealed that there is a significant relationship between capitation and health care delivery. This calls for budget control in the hospitals. One perverse incentive created by the current design is the limited ability of the hospitals to control their own budget. They cannot directly prevent patients from bypassing (although they can do so indirectly by improving quality to attract patients). While the region does not report any major opposition to capitation payment, there is some indication that physicians prefer FFS because it puts less pressure on them to follow professional standards or to avoid referrals. And a large number of hospitals experienced deficit in their capitation fund, suggesting that capitation rates are underestimated. A study of the effect of capitation

payments on four district hospitals in Vietnam showed that hospitals that have piloted capitation appeared to become highly cost-conscious (Tran, 2012). There is some evidence of a decline in hospitalizations and shortened length of inpatient stay when hospitals are paid on a capitation basis, suggesting a potential for cost saving (Ministry of Health, 2013).

#### 5.2.4 Management Changes

Findings on internal/external management changes show hospitals adopting a number of initiatives, such as UR, essential drug list, and other quality assurance programs in response to the NHIS. Both public and private hospitals do so equally, in contrast to literature hypothesizing that public hospitals are inflexible and thus incapable of change. In particular, hospitals changed physician payments to pass on the NHIS incentives to the physicians. In public hospitals, where physicians are traditionally salaried, they became increasingly paid by FFS and bonuses for treating NHIS patients in an effort to pass on quality improvement incentives. The private sector, which usually pays physicians by FFS, has introduced cost-saving incentives with more risk-sharing payments, like capitation. These results are encouraging for countries that are considering reform models similar to that of the UK, and yet do not have a well-developed general practitioner system like the UK's, for they suggest that capitation at the hospital level may be a feasible alternative strategy. Limited by the quality and availability of data, interpretation of the results is only suggestive and associative. In particular, this study cannot link provider behaviour to performance. Similarly, it can only study the combined incentives of the NHIS, rather than separating the specific

incentives and linking them to provider behaviour. Also, it is limited to use geographic areas as markets, which hide much variations of market structure, especially Kumasi. Nonetheless, its results provide evidence that incentive-based reforms similar to the NHIS can create major changes in the market structure, which in turn impact the behavior of hospitals. Further, hospitals react by changing their internal management aimed at increasing quality, efficiency, and reducing costs. The results suggest cautious optimism for reforms similar to the NHIS in developing countries.

Majority of clients readjusted themselves with the wrong perception of the capitation system, while health providers viewed the capitation positively in terms of its role in gathering resources for service provision and improving quality health care in the region.

Overall, the NHIA's past behavior regarding significant delays in reimbursing claims coupled with explicit decisions on clinical matters have left a sour taste in the mouths of some providers, who have in turn slammed the NHIA for encroaching on the professional space of health workers and allegedly compromising patient care in the process.

## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 Introduction**

This study was basically carried out to find out the effects of capitation on hospital administration in the Ashanti Region. This chapter, therefore, presents conclusions from the entire study as well as policy recommendations.

#### **6.2 Conclusions**

The study concludes that because capitation imposes a financial risk on healthcare providers, they are more likely to reduce the quality of treatment which in turn affects patient health outcome negatively. Again, providers under capitation have poorer relations with their patients to deter them from further visits, and also refer their patients to other healthcare providers.

#### **Effects of the capitation on hospital administration**

The study showed a significant relationship between capitation and hospital administration. Despite its non-standard design and the fact that providers do bear the full financial risk, the Ghana (Ashanti region) case again exemplifies the effects of capitation. This suggests that providers are sensitive even to a small level of incentives. Moreover, the study clearly points to the need to anticipate intended and unintended effects of any payment policy and the trade-offs among policy objectives. For all the optimism over capitation as a new payment method in many countries, perhaps a more sophisticated, blended capitation could be used, which employs performance based

incentives and disincentives for quality as well as important health indicators (for example, see the Turkish model in World Bank 2013).

### **Capitation and Health Care Delivery**

It further showed a positive relationship between capitation and health care delivery as well as a significant relationship between health care delivery and hospital administration. There is therefore the need to critically look at the positive effects of capitation of both hospital administration and health care delivery in the Ashanti Region and the country as a whole.

### **Efficiency, quality and gaps in service utilization**

The study found out that the implementation of the NHIS has led to significant increases in facility attendance by clients without a corresponding improvement in health infrastructure and equipment as well as human resource. This results in extra workload; over-stressed staff, excessive pressure on existing amenities and reduced attention to patients. The situation in some regions is even more serious in view of the fact that facility attendance has increased considerably over the years while the numerical strength of health professionals has reduced.

The study concludes that because capitation imposes a financial risk on hospitals, healthcare providers are more likely to reduce the quality of treatment which in turn affects patient health outcome negatively. Again, providers under capitation have poorer relationship with their patients to deter them from further visits, and also refer their patients to other health care providers.



### **6.3 Recommendations**

The following recommendations have been made based on the findings and conclusions from the study.

#### **6.3.1 Capitation Payment**

It was concluded that capitation affects health outcomes, providers' attitude towards patients, healthcare utilization (visits), and continuity of care negatively as well as referral patterns. Thus, capitation (and other provider payment methods) must have an inbuilt monitoring and evaluation mechanisms to mitigate their negative effects. Thus, Ministry of Health, National Health Authorities and other bodies involved in the health sector should structure the capitation method as well as other payment methods to prevent patient dumping and under-provision to improve quality of care. For example, Government of Ghana and other institutions (MoH, NHIA) regulating the healthcare market should make policies that would check the (higher) referrals among mission and private healthcare providers as well as fewer visits found in private health facilities to establish their authenticity in order to protect patients. Therefore, the government should institute more reliable ways like paying hospitals on time.

#### **6.3.2 Expansion of Hospitals**

Furthermore, policies should encourage and support religious bodies to build more or expand their health facilities and train more staff since their services will significantly improve patients' health outcomes, and also encourages continuity of care. Also, mission and private healthcare providers have been found to have better relations with

their patients than those in the public sector, there should be policies to encourage health workers in the public sector to have better relations (good attitudes) with patients.

The Ministry of Health should have pragmatic plans by having at least two regional hospitals in all the ten regions. This in a way will ease the burden on the few ones.

### **6.3.3 Policies on Capitation**

Also, capitation payment can have important implications on market structure and competitive behaviour among providers subject to capitation payment incentives. It is important that the government understands and is able to anticipate these implications in order to design appropriate policies and necessary regulations. If designed appropriately, other market mechanisms, such as private sector participation and free choice of consumers, can act to enhance the positive incentives (e.g., cost reduction) and mediate the negative incentives (e.g., quality reduction) of capitation payment. Monitoring and evaluation are important to assure the proper functioning of the reform and good quality data should be collected for that purpose.

### **6.3.4 Capitation and NHIS**

Capitation can play an important part in cost containment for the NHIS and there is the need for all stakeholders in Ghana's health service delivery system "to make it work." Capitation is a provider payment method in which providers in the payment system are paid typically in advance a pre-determined fixed rate to provide a defined set of services for the individual enrolled for a fixed period of time.

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## APPENDIX I

### KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

#### RESEARCH TITLE:

#### THE EFFECTS OF CAPITATION ON HOSPITAL ADMINISTRATION IN SOME SELECTED DISTRICTS OF THE ASHANTI REGION

#### QUESTIONNAIRE HOSPITAL STAFF

I am a final year student of the Kwame Nkrumah University of Science and Technology, Department of Community Health School, Medical School. The findings of this research will be presented to the University in the form of Thesis. The data will be confidential and used for statistical purposes only and identity of sources of information will not be disclosed. I would, therefore, be very grateful if you could spare some time to respond to this questionnaire.

#### SECTION A: BACKGROUND CHARACTERISTICS

Hospital..... Position.....

1. Gender: ☐ Male ☐ Female
2. What is your age? .....
3. What is your marital Status? Single ☐ Married ☐  
Separated/ Divorced ☐
4. Level of Education Secondary ☐ Diploma / HND ☐  
Graduate ☐ Post Graduate ☐
5. What is your status or position with the hospital? .....
6. How long have you been working with the hospital?.....



## SECTION B: CAPITATION

7. How many clients access the out patients of the hospital in a day, a week and year during the pre-capitation era?

Year	Number per day	Number per week	Number per year
2007			
2008			
2009			
2011			

8. How many clients access the out patients of the hospital in a day, a week and year during the post-capitation era?

Year	Number per day	Number per week	Number per year
2007			
2008			
2009			
2011			

9. Which specialty services does your institution provide? Please check all that apply

- ☐ General practice
- ☐ Internal Medicine
- ☐ Surgery
- ☐ Orthopedics
- ☐ ENT
- ☐ Ophthalmology

- ☐ Neurosurgery
- ☐ Cardiology
- ☐ Obstetrics and Gynecology
- ☐ Pediatrics
- ☐ Geriatrics
- ☐ Psychiatry
- ☐ Others (Please specify) \_\_\_\_\_

### SECTION C: **HEALTH CARE**

10. What are the effects of capitation on your hospital administration?

.....

.....

.....

.....

11. What are the drugs given to the patients under capitation?

.....

.....

.....

12. Do you give all the drugs to the patients or you allow them to buy from pharmaceutical shops? A) All drugs are prescribed from the hospital      B) Patients allow to buy drugs by themselves      C) Only few drugs are given to the patients.

13. Why did you choose the above facility?

- a. Proximity [ ]
- b. Quality health care [ ]
- c. Less pressure at facility [ ]
- d. Other Please specify.....

14. Are you satisfied with the level of service delivery? Yes [ ] No [ ]

15. How will you rate the quality of service delivery?

- a. 5%-20% [ ]
- b. 21%-30% [ ]
- c. 31%-40% [ ]
- d. 41%-50% [ ]
- e. 51% and above [ ]

16. How do you see the capitation programme where you are restricted to one facility as against the old system where you could visit any facility?

- a. Same [ ]
- b. Better [ ]
- c. Good [ ]
- d. Bad [ ]
- e. Very Bad [ ]

#### SECTION D: MONETARY ASPECT

17. Are you satisfied with the money allocated to your hospital?

A) Yes ( ) B) No ( )

18. Are the funds disbursed frequently and on time?

A) Yes ( ) B) No ( )

19. How much do you normally receive per year?

Year	Amount
2011	
2012	
2013	

20. How effective is the capitation in your hospital?

A) Very effective ( ) B) Effective ( ) C) Satisfactory ( ) D) Very bad ( ) E) Poor ( )

21. How do you assess the perceptions of patients regarding the capitation in your hospital?

A) Very good ( ) B) Good ( ) C) Satisfactory ( ) D) Bad ( ) E) Poor ( )

22. In your opinion, do you think the capitation as a payment system is sustainable?

Yes [ ] No [ ]

23.. What are your recommendation for improvement in the capitation as a payment system

- (a).....
- (b).....
- (c) .....
- (d) .....

24. What specific challenges do you have regarding capitation as a payment system?

- (a).....
- (b).....
- (c) .....
- (d) .....

## APPENDIX II

### SAMPLE SIZE COMPUTATION

Computation of the sample size was based on the mathematical formula below:

$$\frac{(P\{1 - P\})}{A^2 + \frac{P\{1-P\}}{N}} \times \frac{Z^2}{R}$$

Definition of terms;

$n$  = Sample size required

$N$  = Number of people in the population (3656)

$P$  = Estimated variance in population as a decimal (0.5)

$A$  = Precision desired, expressed as a decimal (0.05)

$Z$  = Based on confidence interval (1.96)

$R$  = Estimated response rate, expressed as a decimal (0.8)

$$\frac{(0.5\{1 - 0.5\})}{0.05^2 + \frac{0.5\{1-0.5\}}{3656}} \times \frac{1.96^2}{0.8}$$

$$\therefore n = 200$$