EQUITY IN HEALTH CARE FINANCING IN GHANA

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DEDICATION

With great appreciation, I dedicate this work to the Almighty God and Father through His only begotten son Jesus Christ my Saviour

ABSTRACT

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Financial risk protection against the cost of unforeseen ill health has become a global concern as expressed in the 2005 World Health Assembly *resolution* (WHA58.33), which urges its member states to "plan the transition to universal coverage of their citizens". The study (the first of kind in Ghana) measured the relative progressivity of health care financing mechanisms, the catastrophic and impoverishment effect of direct health care payments, as well as evaluating the factors affecting enrolment in the national health insurance scheme (NHIS), which is the intended means for achieving equitable health financing and universal coverage in Ghana.

To achieve the purpose of the study, secondary data from the Ghana Living Standard Survey (GLSS) 2005/2006 were used. This was triangulated with data from the Ministry of Finance and other ministries and departments, and further complemented with primary household data collected in six districts. In addition 44 focus group discussions with different groups of people and communities were conducted. In-depth interviews were also conducted with six managers of District NHI schemes as well as the NHIS headquarters.

The study found that generally Ghana's health care financing system is progressive. The progressivity of health financing is driven largely by the overall progressivity of taxes which account for over 50% of health care funding. The national health insurance levy is mildly progressive as indicated by a Kakwani index of 0.045. However, informal sector NHI contributions were found to be regressive. Out-of-pocket payments, which account for 45% of funding, are associated with significant catastrophic and impoverishment effects on households. The results also indicate that high premiums, ineffective exemptions, fragmented funding pools and perceived poor quality of care affect the expansion of the NHIS.

For Ghana to attain adequate financial protection and ultimately achieve universal coverage, it needs to extend cover to the informal sector, possibly through funding their contributions entirely from tax, and address other issues affecting the expansion of the NHI. Furthermore, the funding pool for health care needs to grow and this can be achieved by improving the efficiency of tax collection and increasing the budgetary allocation to the health sector.

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LIST OF ABBREVIATIONS

ACSD…….. Accelerated Child Survival and Development
ACT……. Artemesinin-based Combination Treatment
AIDS…… Acquired Immunodeficiency Disease Syndrome
ALOS…….... Average Length of Stay
AR……. Ashanti Region
ART……. Antiretroviral Therapy
ATP……. Ability to Pay
BOR…… Bed Occupancy Rate
BMC…… Budget Management Centre
CBHIS……. Community-Based Health Insurance Scheme
CEPS…… Custom, Excise and Preventive Service
CHAG…… Christian Health Association of Ghana
CHO…… Community Health Officer
CHPS…….... Community-based Health Planning and Services
CT……. Corporate Tax
CWIQ…….. Core Welfare Indicator Questionnaire Survey
DANIDA… Danish Development Agency
DCE……. District Chief Executive
DFID…… Department for International Development
DHIS…… District Health Insurance Scheme
DPF……... Donor Pooled Fund
DWHIS…… Dangwe West Health Insurance Scheme
EA……. Enumeration Area
ECOWAS…. Economic Community of West African States
EDL……... Essential Drug List
FGD……. Focus Group Discussion
FIA……... Financing Incidence Analysis
GAR…… Greater Accra Region
GBS……. General Budget Support
GDP…… Gross Domestic Product
GHS…… Ghana Health Service
GH¢…… Ghana Cedis
GLSS…….. Ghana Living Standard Survey
GNPC……. Ghana National Petroleum Company
GoG…… Government of Ghana
GPRS…….... Ghana Poverty Reduction Strategy
GSS……... Ghana Statistical Service
GST……. General Sales Tax
HDI……... Human Development Index
HIPC…… Highly Indebted Poor Country
HIV……. Human Immunodeficiency Virus
HWF…… Health Workers Fund
IDA……. International Development Agency
IDI……... Indepth Interviews
IGF……... Internally Generated Funds
ILO……... International Labour Organisation
IMCI…… Integrated Management of Childhood Illnesses
IMF……. International Monetary Fund
ISEQH…….. International Society for Equity in Health

ISSER…….. Institute of Social, Statistics and Economic Research
ITNs…… Insecticide-Treated Nets
LI……. Legislative Instrument
MDAs…….. Ministries, Departments and Agencies
MDBS…….. Multi-donor Budget Support
MDG…… Millennium Development Goals
MHO…… Mutual Health Organisation
MICS……. Multiple Indicator Cluster Survey
MoFEP……. Ministry of Finance and Economic Planning
MoH…….. Ministry of Health
MTEF…… Medium Term Expenditure Framework
NGO…….. Non-Governmental Organisation
NHA……. National Health Accounts
NHI……... National Health Insurance
NHIC……..... National Health Insurance Council
NHIF…… National Health Insurance Fund
NHIL…….. National Health Insurance Levy
NHIS…… National Health Insurance Scheme
NKHIS……. Nkoranza Health Insurance Scheme
NMPGap…. Normalised Mean Poverty Gap
NR……. Northern Region
OHIS…… Okwahuman Health Insurance scheme
OOP…….. Out-of-pocket
OPD……. Out-patients Department
OR……. Odd Ratio
PIT……. Personal Income Tax
PHI……... Private Health Insurance
POW……. Programme of Work
RCH…….. Reproductive and Child Health
SAP…….. Structural Adjustment Programmes
SE……. Standard Error
SES……. Socio-Economic Status
SHIELD…... Strategies for Health Insurance for Equity in Less Developed countries
SSA……. Sub-Saharan Africa
SSNIT…….. Social Security and National Insurance Trust
SWAP…….. Sector-wide Approach Programme
TB……. Tuberculosis
TBA……. Traditional Birth Attendants
U5MR……. Under Five Mortality Rate
UK…….. United Kingdom
UNICEF…… United Nation International Children and Education Fund
USA……. United States of America
USAID..... United States Agency for International Development
VAT……. Value Added Tax
VCT……. Voluntary Counselling and Treatment
VR……. Volta Region
WHA…… World Health Assembly
WHO …… World Health Organisation

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CLARIFICATION OF OWN CONTRIBUTION

The research conducted for this doctoral dissertation was part of a multi-country study (SHIELD). While I benefited enormously from engaging with other members of the SHIELD team in different fora (and who I thank for these engagements), I conceptualized the application of health care financing equity techniques for Ghana, designed the relevant data collection tools, conducted some of the data collection and co-ordinated the rest of the data collected and conducted all the analyses presented in this thesis myself.

EXCUTIVE SUMMARY

International health policy debates and research have recently drawn attention to health care financing issues. This is due in large part to the mounting evidence on the extent to which households (particularly, but not exclusively, poorer households) can be adversely affected by direct out-of-pocket (OOP) payments. The pressure to rely more and more on user charges for financing health care were for a while given impetus by the World Bank policy of encouraging the growth of the private health sector and user fees. The World Bank has since retreated on the policy stance of user fees. In Ghana, in 2005/6 OOP payments accounted for 45% of total health care financing and, in the absence of effective exemption mechanisms, poorer households suffer as a result of having to pay user fees (which are a major component of OOP payments). This has prompted interest in investigating alternative health care financing systems such as tax-based financing, social health insurance and community based health insurance. WHO has recognized this need and in its 2005 World Health Assembly resolution WHA58.33, it called on all member states to "plan the transition to universal coverage of their citizens". It is also recognized that the achievement of the Millennium Development Goals (MDGs), particularly the health related ones, requires sustainable and equitable long-term health system financing strategies to improve access to health care, offer greater financial protection and potentially achieve universal coverage.

In terms of the first objective, few people would question that universal coverage is a desirable policy goal for the health system. However the insufficiency of resources needed to finance health care that will provide that financial protection and universal coverage in developing countries, including Ghana, remains a major challenge. Universal coverage requires that the health system provides *all* citizens with adequate health care at an *affordable* cost. Achieving such coverage requires that health care be financed according to ability to pay and that services are accessible according to need.

To improve equity in health care financing and promote the goal of achieving universal coverage, first, there is a need to measure the degree of progressivity of *existing* health care financing mechanisms to be able to establish the relative funding burden on the poor compared with the rich. This will allow us to identify which health care financing

strategies are regressive (i.e. place the burden on the poor) and which are progressive (i.e. the rich contribute a higher proportion of their income than the poor). It will therefore provide insights into which financing mechanisms best provide financial protection and promote universal coverage. Second, the nature and extent of catastrophic payments need to be identified and dealt with. For instance, knowing the extent to which direct out-of-pocket payments are catastrophic and impoverish households will be important evidence for policy makers and planners for assessing the extent of financial protection in the current health system and hence the degree of urgency of exploring alternative, particularly pre-payment, financing mechanisms. Third, if a mandatory health insurance scheme is adopted as a mechanism for promoting equitable financing, as has occurred in Ghana, an assessment is required of which factors might influence enrolment in or the successful implementation of such a scheme. This research, which applies internationally accepted tools for critically analyzing health care financing in Ghana, seeks to explore these three issues[1] with the intention of contributing to strengthening the implementation of the NHI in pursuit of an equitable and universal health system.

The study draws on secondary data in the form of a 2005/2006 national household survey (the fifth Ghana Living Standard Survey-GLSS 5)[2]. The sample size for GLSS 5 was 8,687 households, covering a total of 36, 488 individuals. The individuals represent 0.17% of the total population of Ghana. Data collected by a Living Standard Survey (LSS) relate to all aspects of household decision-making and well-being. The data contain information on household consumption of both durable and non-durable items.

In order to calculate the incidence of different financing mechanisms (i.e. health care funding payments as a percentage of household expenditure), estimates of the revenue from different taxes based on the GLSS 5 data were triangulated with actual data from the Ministry of Finance and other ministries and departments. To complement the GLSS data, a primary household survey (called the SHIELD survey) was conducted in a sample of six districts (two districts from each of the three geographical zones) focusing on contributions to the NHI and direct health care payments. This is because the key focus of government is now on how to extend possible coverage of the NHIS, which was

[1] The first two issues (objectives) are explored using the Ghana Living Standard Survey (GLSS), whilst the third issue uses the SHIELD survey data

[2] GLSS is five yearly national household survey collected by the Ghana Statistical Service on various issues on household living standards.

introduced in 2004, as quickly as possible to the informal sector of the population. The SHIELD survey (with sample size of 2986 households and covering a total 14,050 individuals) collected data on household expenditure on health care, household SES (socio-economic status), factors affecting health care payments and the impact of out-of-pocket payments on the ability of lower income groups to access prompt and equitable care for major health problems. The SHIELD data were weighted to give a national picture. In addition to the quantitative data, qualitative data from forty-four focus groups, seven in-depth interviews with managers of district health insurance schemes and the headquarters of the NHIS were undertaken.

The study found that generally Ghana's health care financing system is progressive with a Kakwani index of 0.071. These results are quite similar to those for some OECD and Asian countries. The progressivity of health care financing is driven largely by the overall progressivity of taxes which contribute over 50% of health care funding. The only element of tax that is regressive is the fuel levy. This was largely influenced by the very regressive kerosene levy, as kerosene is consumed mainly by the poor. The national health insurance levy - an earmarked tax for the NHI (levied on the same goods and services on which VAT is levied) - is mildly progressive as indicated by a Kakwani index of 0.045. Another key finding was that the NHI contributions by the informal sector were regressive largely due to the flat premium payment by those outside the formal sector. The income-related graduated premium structure proposed in the NHI design, which would make those who are better-off pay more, has not been implemented. However, NHI contributions overall are progressive, which is driven primarily by the progressivity of the formal sector NHI contributions. OOP payments were found to be regressive, with a Kakwani index of 0.070. Such regressivity of OOP payments is consistent with findings elsewhere such as in Bangladesh, Thailand and Sri Lanka.

OOP payments were not only regressive but were found to be catastrophic and to have an impoverishing effect on households. For instance 11% of households spent more than 5% of total household resources on out-of-pocket expenditures. In Malaysia only 7% of households spent in excess of 5% of their total household resources on health care (Yu, Whynes et al. 2008). Once basic food needs have been met, health care costs can account for a large portion of resources for a substantial fraction of the population. In similar studies in Asia, households in countries like Nepal, Kyrgyzstan and Bangladesh on

average spend in excess of 25% of non-food expenditure as out-of-pocket payments (van Doorslaer, O'Donnell et al. 2007; O'Donnell, van Doorslaer et al. 2008). Results also revealed that the poor are more often faced with catastrophic health expenditure than the rich. The results of the mean payment in excess of the threshold are also staggering, suggesting that there is a high intensity of catastrophic health expenditure in the population, especially among the poor, and it is more pronounced with non-food expenditure. For instance, among those devoting more than 20% of total expenditure to out-of-pocket payments on health care, the average OOP payment share exceeds this threshold by almost 44 percentage points, giving a significant OOP budget share of 64%. The average budget share for those exceeding the 20% of non-food expenditure threshold is much higher; it is 75% OOP budget share. This reflects a higher percentage of food shares of total household expenditure especially among the poor.

Comparing the poverty headcount in pre-payment and post-payment periods at $1.25 or lower poverty line, it is found that health care payments increase poverty in Ghana from 17% to 18.6%. This suggests that health care spending increases poverty by 1.6% and, given an estimated population in Ghana of 22 million people, translates into about 352,000 more people being impoverished as a result of spending on health care. There are substantial geographical differences in the impoverishment effect of health care payment, with northern areas bearing a higher burden of poverty than the southern sectors of the country.

Key issues also emerged from examining the factors influencing enrolment in the NHIS and these include contribution levels that are regarded as too high, inability to pay, and perceived poor quality of care offered to NHI members. The seriousness of NHI affordability issues was confirmed through a regression analysis which found that those who did not face food shortages in the preceding year were far more likely to be insured. The results of the interviews, especially from the focus groups, again emphasised that lack of money and high premiums are the main barriers to people joining the NHIS. This is consistent with a study entitled “Does the Ghana NHIS cover the poor?” which found that over 90% of the uninsured attributed their inability to insure to high premium levels and poverty (Asante and Aikins 2008). Interviewees recommended broadening of the categories of people who should be exempted from making NHI contributions to cover all vulnerable groups.

What is apparent from the study is that the goals set for the NHIS are not being realised to the extent intended. The evidence presented in this study is clear: Ghana is still far from universal access; there is not adequate financial protection for those outside the formal sector; and there remains considerable inequity in health care financing. While that is disappointing given the aspirational goals of the NHI, the study concludes by providing some important insights into what now needs to be done to overcome these deficiencies.

- General tax revenues should be used to meet the costs of premiums for the poor.
- Government should seriously consider funding the contributions of those outside the formal sector from tax funds, given that their NHI contributions are regressive. This would be the most reliable way of achieving universal coverage and is in line with what other countries are doing.
- If Ghana is to achieve universal coverage within the existing NHIS framework, there is a need to effectively identify and exempt the poor from NHI contributions
- The current graduated premiums (if premiums are to be maintained for the informal sector) should be simplified into the rich, the not so rich and the poor.
- Quality of care deficiencies, particularly the perceived inferior quality of care provided to NHI members, must be addressed.
- To avoid a potential for consumer moral hazard problems in the NHI, it is recommended that a strong gate-keeping system is put in place and this can be done by strengthening the primary health care system.
- The current system of funding health facilities, particularly public sector facilities, can entrench resource disparities between facilities to the detriment of poor rural facilities, and it is therefore recommended that budget allocations via the MoH/GHS to facilities take account of resource allocations via the DHIS/NHI to ensure equity and fairness.
- Currently there exist fragmented district pools of funds to the point that some district health schemes have extra funds whilst others are in deficit, and it is recommended that efforts are made to pool these funds together.
- The problems (such as lack of staff, complexity of forms, and bureaucracy in the release of funds) leading to delays in reimbursement to providers need to be urgently addressed as this has the potential of affecting the quality of services provided at the health facilities.

- Finally the government needs to embark on a national campaign to acquaint the population with these changes, especially the well-off, to help them to recognise the need for a more equitable system of health care financing which will be to the advantage of all Ghanaians.

The dissertation has identified a number of issues that need further investigation and these include: (i) continuous monitoring of the incidence of tax particularly the NHI levy; (ii) a comprehensive study on how to identify the poor for exemption; (iii) monitor changes in catastrophic expenditure and the impoverishment effect of direct payments; (iv) compare the value of premiums from those in the informal sector and the administrative cost of collecting such premiums; and (v) evaluation of how to achieve universal coverage within the shortest time possible.

Chapter one: General Introduction

"Not until the creation and maintenance of decent conditions of life for all people are recognised and accepted as a common obligation for all people and all countries—not until then shall we, with certain degree of justification, be able to speak of mankind as civilised"(**Albert Einstein 1945)**

1.0 Introduction

Health care financing encompasses the process of collecting and raising revenue and pooling this to pay for health care services (Kutzin 2000; Kutzin 2001). Health care financing strategies and how 'best' to finance health care have once again gained priority in international health policy debates and research (World Health Organization 2005; McIntyre, Garshong et al. 2008; Yates 2009). In Africa, including Ghana, health care financing to provide for the health needs of the population remains a major challenge, due partly to insufficient resources. This was particularly so at the time (1980s/90s) when African governments were severely hit by macro-economic difficulties that resulted in low or negative economic growth and increasing indebtedness which then limited the resources available to government for financing health services for the population. Falling health care budgets, and the consequent lack of drugs and poor quality of care, created severe problems in many African countries (Bennett 1992). Turning to the World Bank and International Monetary Fund (IMF) for loan support, governments were confronted with 'conditionalities', including structural adjustment programmes which demanded the implementation of cost recovery mechanisms in public institutions. All of this led to financing strategies (including user fees) that increasingly placed the burden on service users (Arhin-Tenkorang 2000; McIntyre, Gilson et al. 2005).

African countries were convinced by the World Bank and IMF that user fees (a major component of out-of-pocket payments) was the solution to falling health care budgets. Such fees are charged at the place and time of service use and paid on an out-of-pocket (OOP) basis (McIntyre 2007).

1.1 Impact of user fees

The effect of user fees particularly in Africa has been devastating. A number of studies have shown that user fees have not produced the benefits claimed by supporters of this financing (Waddington and Enyimayew 1990; Creese and Kutzin 1995; Kipp, Kamugisha

et al. 2001). For instance, revenue from user fees in 19 African countries average just 6.9% of the public health service budget (Pearson 2002; Yates 2009).

Not only was revenue lower than predicted but administrative costs are high. For instance in Zambia the cost of administering user fees consumed almost all of the user fee revenue (Pearson 2004). The impact is greatest among the poor and vulnerable (Mwabu, Mwanzia et al. 1995; Blas and Limbambala 2001; McIntyre, Gilson et al. 2005). The argument that user fees will prevent mainly unnecessary use of health care has been shown not to hold. So-called 'frivolous' use is already deterred by the other costs involved in seeking health care such as transport (Abel-Smith and Rawal 1992; McIntyre, Gilson et al. 2005; Yates 2009).

A number of studies have documented the consequences of user fees on household health seeking behaviour and livelihoods (Bitrán and Giedion 2003; McIntyre, Thiede et al. 2005; Save the Children 2005; Witter and Babiker 2005). The introduction of user fees saw substantial declines in health care use, particularly amongst the poorest (Waddington and Enyimayew 1990). In addition, many individuals and households have been impoverished by the effects of catastrophic health expenditure (Xu, Evans et al. 2003). With growing health care costs, there is increasing evidence that such costs can push individuals and households, particularly the vulnerable, into poverty or deeper into poverty. Such households may then find it difficult to get out of poverty again. According to WHO, it is estimated that 100 million people a year in the world become impoverished as a result of paying for health care (World Health Organization 2005).

Exemption schemes to protect the poor have tended not to work in practice (Garshong, Ansah et al. 2002). (A detailed review of the effects of user fees and out-of-pocket payments is provided in Chapter Three).

A consensus is emerging (which includes the former arch protagonists of user fees) that user fees, and for that matter out-of-pocket payments in general, are *not* appropriate financing mechanisms for health services in developing countries (McIntyre, Garshong et al. 2008). The removal of such fees has been advocated by some as the way forward. Even though the removal of user fees in general often results in increased utilization, the examples of user fee removal in Uganda, Burundi, South Africa, Kenya, Sudan, Senegal,

Liberia, Niger, Lesotho and Zambia have revealed serious issues related to the quality of services and burden of increased utilisation on the few existing health care professionals (Yates 2009). To assume that the removal of user fees will solve a country's health care financing problem is naive. Gilson and McIntyre (2005) argue that the removal of such fees should not be thought of as a panacea that can be implemented at the stroke of a pen. Rather the policy should be thought of as part of a broader package of health system reforms to move towards universal coverage.

1.2 Universal coverage

It is evident that additional financing is needed for countries to achieve universal coverage. This has prompted interest in investigating alternative health care financing systems such as tax based financing, social health insurance and community based health insurance. WHO has recognized this need and in its World Health Assembly resolution WHA58.33 called on all member states to "plan the transition to universal coverage of their citizens" (World Health Organization 2005). It is also recognized that the achievement of the Millennium Development Goals (MDGs) by 2015, particularly the health related ones, requires sustainable and equitable long-term health system financing strategies to improve access to health care and potentially to reduce morbidity (Carrin and James 2004). Universal coverage has been defined by WHO as "access to adequate health care for all at an affordable cost". McIntyre (2007) has also defined universal coverage as "a health system that provides all citizens with adequate health care, regardless of their employment status or any other factors". Yet another definition refers to "necessary health care of good quality" (Kutzin 2000). The definitions (put together) imply two key issues, equity in access to quality health care and *financial risk protection*. Achieving universal coverage requires that attention is not only paid to such factors as geographical and cultural barriers, quality of care including poor attitude of health staff which discourages the use of health care services particularly by the poor (Walker and Gilson 2004; McIntyre, Goudge et al. 2009) but also to financial arrangements.

The literature points to the fact that no country, and probably only a few people, would explicitly argue that universal coverage is not a desirable goal in the health system (Mills 2007). "The crucial concept in health financing policy towards universal coverage is that of society risk pooling" (World Health Organization 2005). However, this aspect appears to be ignored in many policy prescriptions for low income countries (McIntyre, Garshong

et al. 2008). Another critical issue affecting universal coverage is the insufficiency of resources needed to finance health care through the provision of financial protection in developing countries, which is often cited as a key reason for promoting user fees and out-of-pocket payments. A critical policy question then arises. Is the current mix of financing mechanisms (general tax, SHI/NHI, private insurance and OOP payments), with a high percentage of OOP payments particularly in developing countries, able to help African countries achieve universal coverage and equitable health financing and access to health care services?

Health care financing policy in developing countries including Ghana ought to be guided by the World Health Assembly resolution (WHA58.33) in 2005, which noted that, given the failure of user fees (Arhin-Tenkorang 2000), increased reliance on pre-payment mechanisms, i.e. tax and health insurance, are critical in order to achieve universal access to health services (WHO/HTM/TDR 2004). Currently, there is growing international attention on health insurance in addressing some of the challenges, including that of equity, facing the health systems of developing countries (WHO/HTM/TDR 2004). Ghana and some other African countries (e.g. Tanzania, Nigeria, Kenya and South Africa) are implementing (or are planning to implement) mandatory health insurance schemes with the aim of reaching universal coverage in the longer term.

1.3 Ghanaian health care financing context

Before Ghana's independence in 1957, user charges were instituted in all public health facilities. After independence, health services became free to the public and were financed through general tax revenue. However, sustaining the quality and delivery of health services became problematic thereafter.

Following the general economic reforms instituted by the World Bank and the International Monetary Fund (IMF) in 1985, the Ghana Ministry of Health (MOH) introduced significant user fees in public health facilities. The aim was to recover at least 15% of recurrent operating costs. Though user fees for clients had existed earlier, the amounts paid were minimal and more of a token. The objective of recovering at least 15% of recurrent costs was strenuously pursued and met by Ghana (Creese 1991) . However, access and utilization studies showed a significant reduction in the use of health services especially in rural areas after the introduction of user fees (Creese 1991;

Asenso-Okyere and Dzator 1997). User fees, commonly called the 'cash and carry'[3] system in Ghana, undoubtedly contributed to inequitable health service access and utilization between different socio-economic groups and between poor rural and richer urban dwellers (Waddington and Enyimayew 1990; Nyonator and Kutzin 1999).

In the late 1980s, the Ministry of Health began to consider the feasibility of health insurance as an alternative to user fees. A number of pilot schemes were put in place to test the viability and feasibility of this alternative financing arrangement. Some of the pilot schemes that were set up have led to some increases in utilization and access, promoting equity and efficiency in the areas in which these schemes existed (Atim, Grey et al. 2001). In addition to these government initiated pilot schemes, a number of community-based pre-payment schemes sprang up and by 2002, there were more than 159 mutual health organizations, although their coverage remained at only about 1% (220,000) of the population (Atim, Grey et al. 2001).

These schemes operated on a pre-payment basis and most were initiated and operated by NGO health care providers (e.g. Nkoranza Health Insurance scheme-NKHIS) with a few having strong community involvement (e.g., Dangwe West Health Insurance Scheme (DWHIS) and the Okwahuman Health Insurance scheme (OHIS)). Despite the presence of many community-based health insurance schemes, they have low coverage meaning that most patients still have to pay user fees. User fees remain an important source of funding for health services in Ghana (Nyonator and Kutzin 1999) and elsewhere (Yates 2009), which has negative implications for health service utilization especially among the poor (Arhin-Tenkorang 2001).

Due to these inherent inequities associated with user fees, strong political support came in 2001 when the government announced the introduction of a national health insurance (NHI) scheme to replace 'cash and carry' or user fees at the point of service. This policy was translated into legislation in 2003. The NHI encompasses multiple schemes, with a district health insurance (DHI) scheme in each of the country's over 140 districts, private mutual health insurance schemes and private commercial insurance schemes in order to afford all Ghanaians the opportunity to join a health insurance scheme of their choice.

[3] The name was coined from the cost recovery aspects of drugs at public health facilities that required that people make payments before they get drugs to take away.

The NHI is aimed at providing access to health care for members without having to pay at the point of use and hence improving the affordability of medical care. Adults (outside the formal sector) pay a yearly minimum subscription of 72,000 cedis (US$8).

A National Health Insurance fund (NHIF) has been set up and is financed through a payroll tax contribution, whereby 2.5% of the 17.5% of formal sector workers' Social Security Scheme (SSNIT) contributions is directed towards health insurance, a 2.5% value added tax on selected goods and services as well as an annual allocation of central government funds. The NHIF transfers funds to each District Health Insurance Scheme (DHIS) based on the number of SSNIT contributors and indigents in the district (Ministerial Task Team 2002). Existing community based mutual health insurance schemes continue to exist but also need to be licensed by the National Health Insurance Council (NHIC) and do not receive any subsidy from NHIF. However, they can also seek to be incorporated into the district schemes created under the law. The law also makes provision for the licensing and operation of private commercial schemes, who also don't receive a government subsidy and their activities are regulated by the NHIC. A relatively comprehensive benefit package (outpatient and inpatient health services), including maternal care services and covering over 90% of the health care burden, was put together for the NHI (Ministerial Task Team 2002).

Against a background where OOP payments currently account for over 45% of health care financing in Ghana (McIntyre, Garshong et al. 2008), under the NHI the government is seeking to provide quality, accessible, efficient and equitable health services to about 60% of Ghanaians by 2015 and subsequently to obtain universal coverage throughout the country (Ministerial Task Team 2002). Ghana's ambitious yet innovative initiative has elements in common with the health insurance reforms introduced in Thailand (Limwattananon, Tangcharoensathien et al. 2005). Many are worried about the sustainability of the comprehensive and attractive benefit package covered by the NHI and how equity, which is the core of the health system policy, can be enhanced such that payments through this health care financing system are progressive. As the international community watches with interest Ghana's giant step with this mandatory health insurance aimed at establishing universal coverage, there is a need for substantive research aimed at strengthening the design and implementation of the scheme to enhance its progress to universal access through equitable health care financing.

1.4 Rationale for the study

Ghana has chosen to pursue universal coverage and financial protection after two decades of negative experience of user fees and out-of-pocket payments, which have resulted in massive reduction in overall utilisation of health care services, particularly among the poor. However, achieving universal coverage, requires that health care is financed according to ability to pay and benefits from using health services are distributed on the basis of need for care (Wagstaff, van Doorslaer et al. 1999). The equity implication of a given distribution of health care financing depends on the extent to which the financing rate and structure ties health care payments to ability to pay or income.

It is fortunately the case that methodological tools have been developed to improve the measurement of equity in health care financing (Wagstaff and van Doorslaer 1992). Unfortunately the application of the relevant tools for measuring the equity of financing mechanisms, particularly for assessing the progressivity of financing mechanisms, has remained focused primarily on the health care systems of developed countries and, more recently, some Asian countries (Wagstaff and van Doorslaer 1992; O'Donnell, van Doorslaer et al. 2008). There has been only very limited application in developing countries and almost none in sub-Saharan Africa (Cissé, Luchinia et al. 2007; Ataguba and McIntyre 2009). This is despite the apparent importance of equity as a central policy goal in many health systems in developing countries. Most such countries are grappling with finding health care financing mechanisms that would balance the need to mobilize resources within the context of severely limited 'fiscal space' with the need to promote equity and attain universal coverage.

Although there is a commitment to pursuing a universal health system in Ghana, no assessment of equity in health care financing has been undertaken, nor has the impact of the NHI on the financing system been evaluated. To improve equity in health care financing and promote the goal of achieving universal coverage, first, there is a need to measure the degree of progressivity of *existing* health care financing mechanisms to be able to establish the relative funding burden on the poor compared with the rich. This will allow us to identify which health care financing strategies are regressive (i.e. place the burden on the poor) and which are progressive (i.e. the rich contribute a higher proportion of their income than the poor). It will therefore provide insights into which financing mechanisms best provide financial protection and promote universal coverage. Second,

the nature and extent of catastrophic payments need to be identified and dealt with. For instance, knowing the extent to which direct out-of-pocket payments are catastrophic and impoverish households will be important evidence for policy makers and planners for assessing the extent of financial protection in the current health system and hence the degree of urgency of exploring alternative, particularly pre-payment, financing mechanisms. Third, if a mandatory health insurance scheme is adopted as a mechanism for promoting equitable financing, as has occurred in Ghana, an assessment is required of which factors might influence enrolment in or the successful implementation of such a scheme. In Ghana, both formal and informal sector workers are expected to contribute to such schemes. While mandatory contributions can be enforced relatively easily for formal sector workers, those in the informal sector need to be persuaded to join. It is better to identify and deal with factors that may discourage informal sector workers from joining (or lead to dissatisfaction and opposition to compulsory payments by formal sector workers) at an early stage to ensure effective implementation of SHI/NHI. This research, which applies internationally accepted tools for critically analyzing health care financing in Ghana, seeks to explore these three issues with the intention of contributing to strengthening the implementation of the NHI in pursuit of an equitable and universal health system.

1.5 Aim and objectives

1.5.1 Aim

The aim of this study is to conduct a health care financing incidence analysis and to explore factors influencing health care financing incidence, particularly in relation to the NHI in Ghana.

1.5.2 Objectives

1. To evaluate the relative progressivity of each health care financing mechanism in Ghana and to compare this with other countries.
2. To evaluate the overall progressivity of health care financing.
3. To assess the extent of catastrophic health care payments.
4. To assess the extent of the impoverishment effect of direct health care payments.
5. To identify and evaluate the factors influencing enrolment in the NHI.
6. To provide policy recommendations on how to promote equitable health care financing in Ghana.

1.6 Research questions

The research questions are based on the study objectives:

- What is the progressivity of different health care financing mechanisms in Ghana?
- What is the overall progressivity of health care financing in Ghana?
- What is the extent of the catastrophic and impoverishing effects of health care payments?
- What factors influence enrolment in the NHI?

1.7 Summary

Health care financing strategies have recently been given greater priority in international health policy debates and research. A consensus is emerging on the need for developing countries to move towards universal coverage through pre-payment financing mechanisms, given that user fees and other direct payments have had and continue to have negative effects, particularly on poor individuals and households. User fees and direct payments disproportionately affect the poor. Unfortunately exemptions that were introduced to try to cushion the effects of user fees have failed to protect the poor from catastrophic health care costs to the point that 84% of those eligible for exemptions in Ghana never got them (Nyonator and Kutzin 1999). Evidence also shows that simply removing user fees as some advocate is not a sustainable solution to health care financing (US Network for Global Economic Justice 2003; Burnham, Pariyo et al. 2004; Yates 2004; Burger and Swanepoel 2006; Xu, Evans et al. 2006). It has to be supported by a simultaneous increase in funding through pre-payment mechanisms. There is therefore a growing need for developing countries, particularly in Africa, to provide fair health financing, financial protection and universal coverage to their populations if they are to achieve the health-related MDG goals. WHO has recognized this need and in its World Health Assembly resolution WHA58.33 called on all member states to "plan the transition to universal coverage of their citizens" Identifying a combination of health care financing mechanisms that would provide the needed access to health care services for all citizens (and protect them from making catastrophic health care payments) is best informed by understanding how the burden of health care financing currently falls on different segments of the population. Assessing health care financing mechanisms to establish their level of progressivity and their catastrophic and impoverishment impacts, as well as evaluating the factors that affect the relative progressivity of health care financing particularly the NHI are critical for identifying strategies for achieving the

health equity goals that are sought. New methodological tools for improved measurement of equity in health care financing have remained focused on health care systems of developed countries with very limited application in SSA and none in Ghana.

1.8 Organisation of the remaining chapters

Chapter Two examines the background of the country. It covers briefly the geography, history, political system and the economy of the country. These issues directly or indirectly affect the equity dimension of health care financing in the country. The chapter concludes with an overview of the health sector, particularly the organisation of the health system including its financing and service provision.

Chapter Three reviews the relevant literature for the study. The review of literature provides a general perspective and context to the study. As this research evaluates equity in health care financing, this review focuses on exploring the concept of equity and critically reviewing alternative health financing mechanisms.

Chapter Four outlines the detailed methodology including the data sources, measurement of households' ability to pay (socio-economic status) and health care payment variables. The chapter also highlights methods of data collection, analysis and how ethical issues were considered.

Chapters Five to Seven contain the empirical results. Chapter Five provides critical, in-depth estimations of the incidence of the various health care financing mechanisms in Ghana.

Chapter Six reports on the catastrophic and impoverishment effects of out-of-pocket payments for health care in Ghana. The results in this chapter (which to my knowledge are the first of their kind in Ghana) can serve as a baseline for tracking the trend of the catastrophic and impoverishing effects of OOP payments as the national health insurance expands.

Chapter Seven looks at the factors influencing people's decision to join or not to join the National Health Insurance Scheme (NHIS).

Chapter Eight highlights the key issues and challenges in attaining financial protection and universal coverage in the Ghanaian health care system.

Chapter Nine summarises the main findings of the study in terms of the objectives set out at the beginning of the research. The Chapter brings together the findings of the thesis which provide answers to the various research questions posed. In doing so it also serves to demonstrate that the research objectives have been met. The Chapter concludes with some recommendations for policy and for further research.

Chapter Two: Profile of Ghana

2.0 Introduction

Since it is important to understand the country context where the study was carried out, this chapter seeks to provide a profile of Ghana. It covers briefly the geography, history, political system and the economy of the country. These issues directly or indirectly affect the equity dimension of health care financing system in the country. The chapter concludes with an overview of the health sector, particularly the organisation of the health system including its financing, service provision and the challenges it faces.

2.1 Geography

Located on the West Coast of Africa about 750km north of the equator on the Gulf of Guinea and with a total land area of 238,305 km², Ghana is bordered on the north by Burkina Faso, on the west by Cote d'Ivoire and on the east by Togo (Asante and Aikins 2008). It has a tropical climate characterized most of the year by moderate temperatures (21-32º C) which provide favourable grounds for the breeding of the mosquitoes that cause malaria. There are two main wet seasons, from March to July and from September to October. Annual rainfall in the south averages 2,030mm but varies greatly throughout the country, with the heaviest rainfall in the western region and the lowest in the north (Institute of Statistical Social and Economic Research 2008).

2.2 History, political and administrative system

Formerly called Gold Coast, in 1957 Ghana was the first country south of the Sahara to gain independence from Britain. It was also the first to suffer from military interventions in its governance. The military government reigned until 1992 when the country returned to a relatively stable parliamentary democracy. There is an elected government with a president, a cabinet, a parliament and an independent judiciary. The country is divided into 10 regions (Ghana Health Service 2007) and 138 districts. The districts are administered by District Assemblies which are headed by a District Chief Executive (DCE), who is nominated by the President and endorsed by the elected district representatives. Ghana continues to enjoy a stable political environment [with a recent (December 2008) smooth transfer of power from one democratically elected government to another] despite increasing instability in the region and sub-region. For example, the deteriorating situation in neighbouring Cote d'Ivoire is a cause for serious concern. To date, the numbers of both Ghanaians returning home and foreign refugees have been

manageable (Ghana Statistical Service 2004) However, Ghana is not equipped to handle large refugee flows and the impact on the nation's already overstretched resources could be overwhelmed if the situation worsens. On the domestic front, there are chieftaincy disputes from one end of Ghana to the other (Ramachandra and Hsiao 2007). Although basic reforms are in place for the acceleration of decentralisation and the delegation of responsibility for provision of many social services to district governments, the commitment at the national level to these policies is missing (Ghana Health Service 2005). Key ministries, such as health and education, have yet to relinquish centralised control and function to the districts, and the level of resources needed at a district level to provide these services are not yet available to District Assemblies and local authorities (Ghana Statistical Service 2006).

2.3 Demography

Ghana's population was estimated at 18.4 million[4] in the 2000 Population and Housing Census (another census is due in 2010). Its population structure is typical of a developing country with about half of the total population below 15 years of age. Ghana is no longer 20% urban and 80% rural as is normally suggested. The results of the 2000 population and housing census showed that approximately forty-four per cent (44%) live in urban localities. The rural /urban classification of localities in the census is population based, with a locality population size of 5,000 or more being classified as urban and less than that being rural. Apart from the Accra and the Kumasi Metropolis with populations of 1,658,937 and 1,170,270 respectively, the population of localities defined as urban in the 2000 census ranged from small rural towns such as Essam in the Western region with a population of 5,019, to Tamale with a population of 202,317 (Ministry of Health 2006).

2.4 The economy and fiscal issues

2.4.1 Macroeconomic situation

The Gross Domestic Product (GDP) growth rate was 6.8 per cent in 2008 which is an increase (almost doubling) from 3.7 per cent in 2000. The GDP of Ghana has seen positive growth over the years compared to its neighboring countries. Whilst Ghana recorded a 1.8 per cent growth in GDP per annum in the period 1990-2003 for instance, Cote D'Ivoire and Gambia had negative figures for the same period. Available figures

[4] The current (2008) population is estimated at 21million

shows GDP per capita (PPP US$) in 2005 was 2,480. Compared to Botswana (12,387), South Africa (11,110) and Gabon (6,954), this figure is very low but compared to neighbouring Nigeria (1,128), Cote D'Ivoire (1,648), Cameroun (2,299) and Burkina Faso (1,213), Ghana's figure is high (Institute of Statistical Social and Economic Research 2008).

The Human Development Index (HDI) for 2005 was 0.553 which is lower than a country like Botswana (0.654) but higher than Nigeria (0.470) and Angola (0.446) (UNDP 2005). With regards to inflation, Ghana has seen some inconsistent inflation trends over the years which are often largely influenced by global markets prices of imported goods and services as well as government expenditure. Inflation has recently increased from less that 13% in 2007 to about 20% by the close of 2008 (Ministry of Health 2009). The recent increase is probably due to the current global financial melt down. Government budget deficit has also seen a jump from 3.2 per cent of GDP in 2004 (when the country ceased to be defined as a Heavily Indebted Poor County) to almost 14 per cent of GDP in 2008. Among several reasons for this astronomical increase is lack of discipline in government expenditure in 2008 which was also an election year.

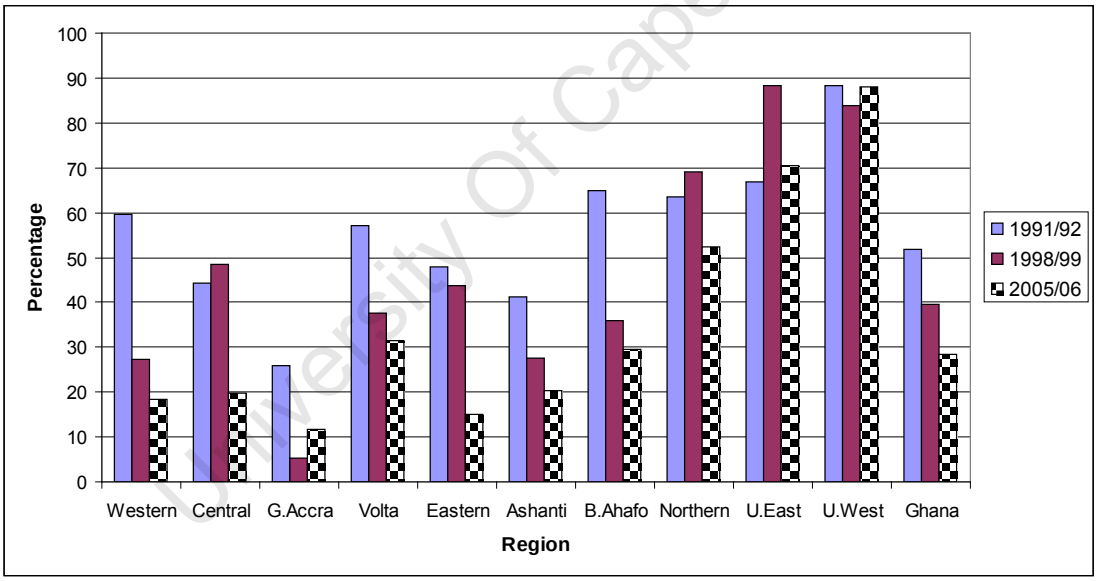
Currently Ghana's domestic economy continues to revolve around subsistence agriculture, which accounts for 35% of GDP and employs 60% of the work force, mainly small landholders. Ghana remains heavily dependent on international financial and technical assistance. Gold, timber, and cocoa production are major sources of foreign exchange. Ghana's recent discovery of oil in commercial quantities promises to boost the economy when production starts in the third quarter of 2010.

Ghana's Gini index (an indicator of inequality) for 2008 of 40.8 is by no means the best in Sub Saharan Africa when compared to Egypt (34.4), Tanzania (34.6) and Guinea (36.5) but it was better than countries such as Zambia (50.8), South Africa (57.8) Botswana (60.8), Sierra Leone (62.9) and Namibia (70.7) (Ministry of Health 2009). However the economic gap between the rich and the poor remains a major challenge. An earlier study in 2002 by the Ghana Centre for Democratic Development found a frightening picture of mass unemployment and underemployment and a perceived widening of the gap between the rich and the poor (the poorest 20% enjoy only 8.4% of

the national income whilst the richest 20% enjoy as much as 41.7% (Ghana Statistical Service 2004).

From the GLSS surveys, with the exception of the Upper West region, poverty levels in all regions have reduced over the period from 1991/92 to 2005/6 (see Figure 2.1). There are marked differences in poverty between southern and northern Ghana. Even though the northern part (Upper East and Northern) has seen some reduction in poverty incidence, their overall standing with regard to poverty incidence leaves them far above the national average of 29% (Ghana Statistical Service 2007). This picture reflects the overall geographically entrenched inequities that have existed between the south and the north of Ghana over many years. Currently the Upper West region is the most deprived region, with about 9 in every 10 people falling below the poverty line. The picture in Upper East is almost as bad.

Figure 2. 1 Poverty incidence by administrative region, 1991/92 to 2005/06



Source: GSS 2007
Poverty line for 2006=3,708, 800 cedis per annum (about US$365)

2.4.2 Taxation

Tax is a major component of health care financing and a key tool for income redistribution and if a country is to meet the needs of its population, government will need to mobilize resources through taxation. Consequently this section looks at taxation in Ghana.

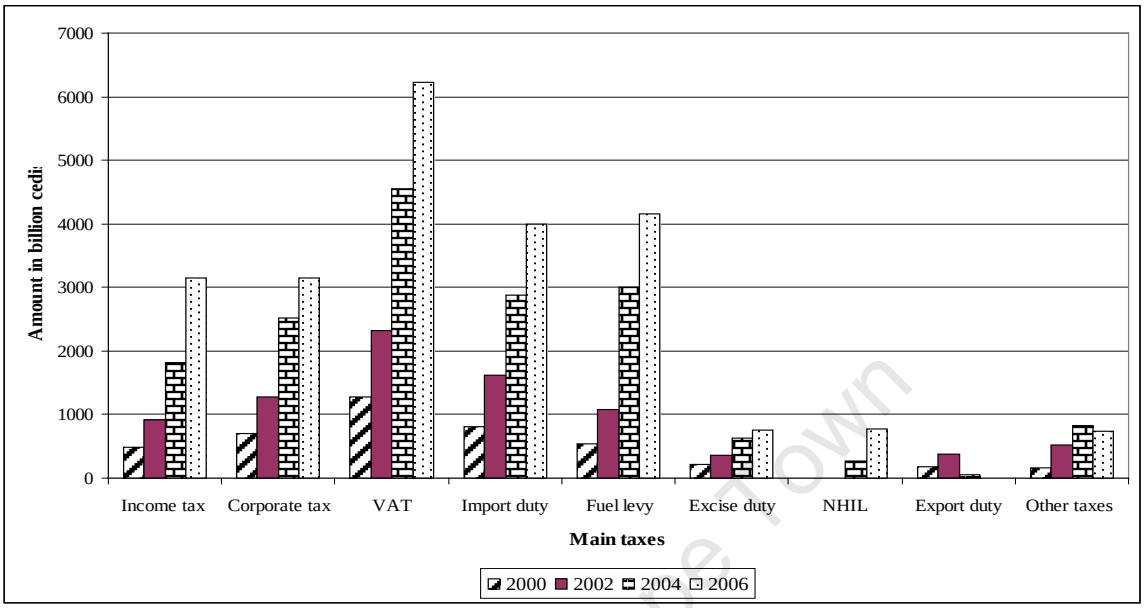
The most radical tax reform in Ghana was the introduction of VAT, first in 1995 but it was then resisted so strongly by the people that it had to be withdrawn and was then reintroduced in 1998 and has been in operation since. The reasons for introducing VAT were two fold: first its efficiency compared with the sales tax that VAT sought to replace. VAT unlike the conventional sales tax system efficiently addresses the problems of cascading and input tax credit that causes an automatic increase in the consumer price level . The problem of cascading is avoided in VAT as the tax is imposed on the value addition at every stage of production. The system of taxation under VAT is also successful in avoiding tax evasion that is frequent in sales tax. Second VAT was introduced to bring Ghana into line with the protocol of the Economic Community of West African States (ECOWAS) that made it mandatory for members to adopt a VAT system by the end of 1999 (Addison and Osei 2001). The widespread public resistance to VAT was due to poor public education which was reflected in the inadequacy of the capacity that was put in place to manage the VAT process as a whole. When it was reintroduced a wide range of goods and services which are consumed mainly by the poor were made exempt.

Petroleum taxes are very controversial in Ghana and indeed one of the most hotly debated taxes. Politicians tend to manipulate this tax in the lead up to elections since Ghanaians are concerned about the effects of increases in petroleum tax on their cost of living. Recently however, petroleum products have been deregulated. This allows a competitive tendering process between the oil marketing companies as well as the Ghana National Petroleum Company (GNPC) which was previously the sole importer of the product into the country. In 1998 the petroleum tax was restructured so that it consisted of two components: an ad valorem component to the ex-refinery price (applicable to all products) and a specific rate applicable to road transport fuels (Price WaterHouse Coopers 2009).

Direct taxes have also been reformed over several years. Corporate tax rates have not only been falling since 1986, from 55 per cent in 1986 to 28 per cent in 2006 (Price WaterHouse Coopers 2009) but have been made the same for all sectors. This was aimed at boosting and promoting businesses. To reduce evasion, the basis for assessing corporate taxes was changed from profits to income. With respect to personal income tax,

the tax free bracket has been persistently increased (see Figure 2.2) whilst marginal tax rates have been lowered.

Figure 2. 2: Figure Annual tax returns of Ghana (2000-2006)



Source: Ministry of Finance and Economic Planning 2007

2.4.3 Government spending

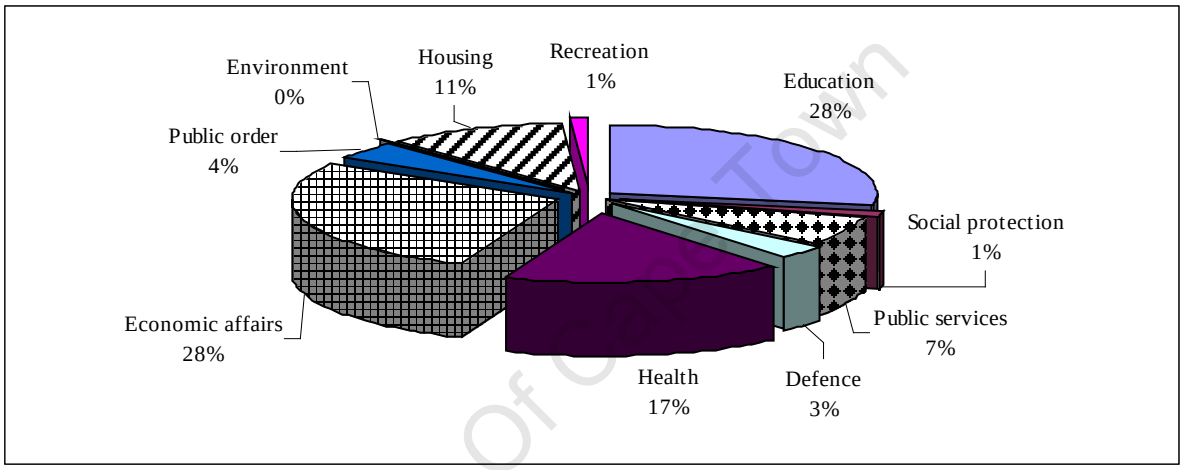
Government budgetary commitments and actual expenditure on health as a proportion of total government spending has increased significantly in recent years. For instance recurrent spending on health has consistently increased from 10.2% of total government resources in 2001 to 14.5% in 2005 and further to 17% in 2006 (see Figure 2.3). The actual amount spent by government in the health sector increased from GH¢477.60 million in 2004 to GH¢617.07 million in 2008. Over 30% of this money is from Donors and development partners and the rest from general taxes. Given that OOP payment account for over 40% of total health care expenditure, actual total health care spending is estimated at GH¢1billion, The health sector's share of the national cake as indicated in figure 2.3 shows that the share of government spending on health at 17% is third to economic affairs and education in 2006. Ghana therefore appeared to have met the Abuja target of the 15% allocation of government resources to the health sector but much of the increases go to pay wages and salaries.

2.5 Health status of Ghanaians

Representatives from 189 countries committed themselves to sustaining development and eliminating poverty at an extraordinary meeting in 2000. They set goals and targets called

the Millennium Development Goals (MDGs) and these are now accepted as the framework for measuring the progress of development. Out of the 48 indicators, 18 are directly related to health, thus emphasising the importance of health in the development process. Most health indicators of Ghana show a general improvement over the fifteen years from 1988 to 2003. However from 1998 to 2003, maternal, infant, under-five mortality and neonatal mortality rates worsened. This is worrying in the light of the Ghana Health Sector's efforts under the Ghana Poverty Reduction Strategy (GPRS) to achieve the health related Millennium Developments Goals by 2015.

Figure 2. 3: Percentage share of total Government budget for 2006

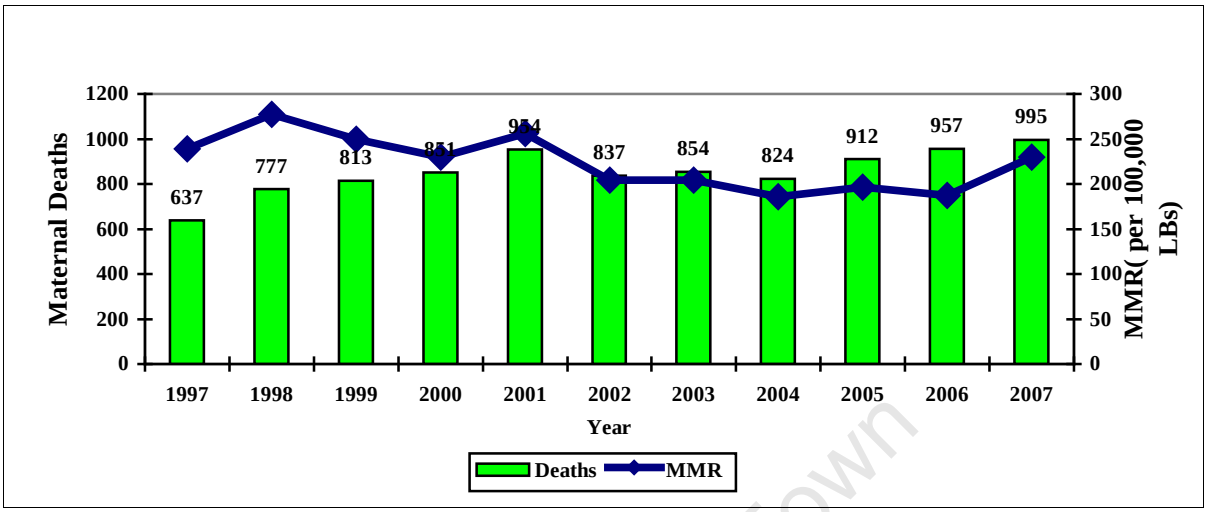


Source: Ministry of Health 2006

2.5.1 Maternal mortality

Maternal mortality is quite high in Ghana. A total of 995 institutional maternal deaths were recorded in 2007. This represents a 4% increase over the 957 maternal deaths reported in 2006. The institutional maternal mortality ratio has increased from 187 per 100,000 live births in 2006 to 229.9 live births in 2007(GHS 2007) During the last 10 years the maternal mortality ratio has been fluctuating between 186 /100,000 live births and 277/100,000 live births. Among the reasons cited for these very high rates - and this is not limited to Ghana but is true of other developing countries – are complications during pregnancy and childbirth. Figure 2.4 below depicts trends in institutional maternal deaths and maternal mortality ratios in Ghana over the past ten years(GHS 2007)

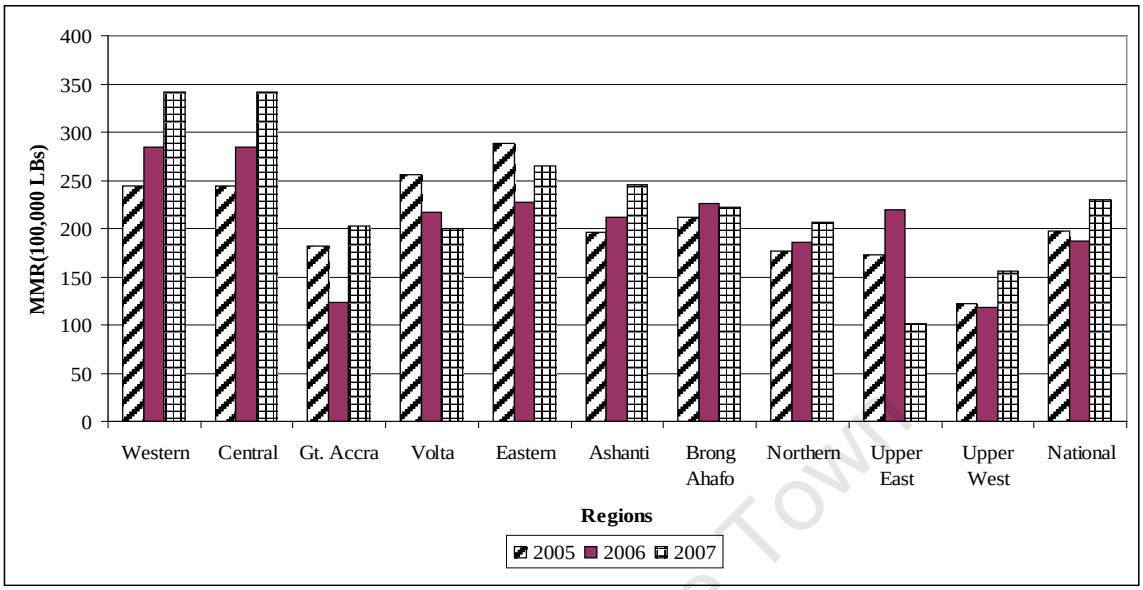
Figure 2. 4: **Trend in Institutional Maternal Deaths and Mortality Ratio in Ghana, 1997-2007**



Source: GHS 2008

Wide regional differences are observed, ranging from 141/100,000 live births in the Upper West Region to 342/100,000 live births in the Western Region. Three regions, Brong-Ahafo, Upper East and Volta showed improvement with decreases in their maternal mortality ratios. In the case of Upper East the reduction could be due to UNICEF's intensive child survival intervention under the Accelerated Child Survival and Development (ACSD) initiative that was introduced as a pilot project in 2001/2002. The Western Region showed the worst deterioration rising from 266/100,000 live births in 2006 to 342/100,000 live births in 2007 (Figure 2.5) (GHS 2007). The question that then arises is whether Ghana can really meet the fifth Millennium Development Goal (i.e. to reduce by three quarters, between 1990 and 2015, the maternal mortality ratio) given these startling figures (see Figure 2.4 and 2.5). In 2008, the Government instituted free delivery in both public and private health facilities in response to these revelations. This however only takes away a part of the barrier; physical access barriers and perhaps socio-cultural barriers need to be identified and removed if the country is to make genuine headway in reducing maternal mortality.

Figure 2. 5: Maternal Mortality Ratio by Region, 2005-2007

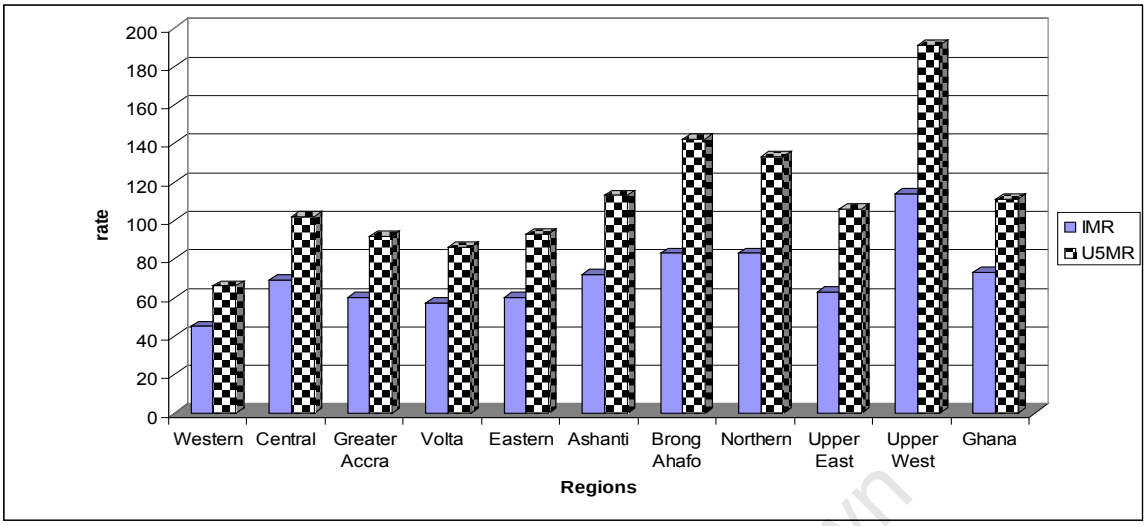


Source: GHS 2008

2.5.2 Infant and child mortality

The child health component of the MDGs is the reduction of under-five mortality by two thirds by 2015, using 1990 as the reference year (World Health Organization 2005). After declining from 77/1000 live births in 1988 to 57 in 1998, the trend in the infant mortality rate was reversed and rose to 64/1000 in 2003. Similarly the under 5 mortality rate declined from 155/1000 live births in 1988 to 108/1000 in 1998, increased to 111/1000 in 2003 (Ghana Statistical Service 2004; GHS 2007) but recently decreased to 80/1000 in 2008 (Ghana statistical Service 2009). A Multiple Indicator Cluster Survey (MICS) conducted in 2006 showed that while the under 5 mortality rate has remained at the level found in 2003, the infant mortality rate (IMR) actually increased further to 71/1000 live births (Ghana Statistical Service 2006). Mortality rates of children in rural communities have been consistently higher than for urban residents. Regionally infant mortality varies quite markedly. Western region has the lowest IMR with a rate of 45 per 1000 live births while the rate for Upper West is 114 (Figure 2.6). Under five mortality in Upper West (191) is three times that of Western Region (66).

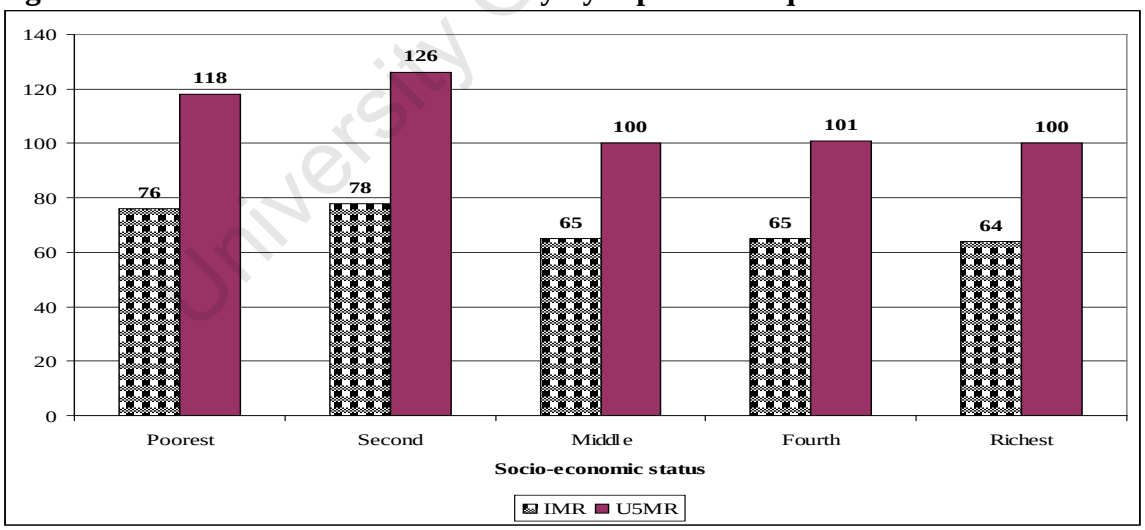
Figure 2. 6: Infant mortality and under five mortality by region 2006



Source: Ghana MICS 2006

Generally poorer people lose more children (infant and under five) than their rich counterparts. The difference in Under 5 mortality between the poor and the rich is striking (see Figure 2.7) and a source of worry from the perspective of equity and social justice.

Figure 2. 7: Infant and under 5 mortality by expenditure quintile

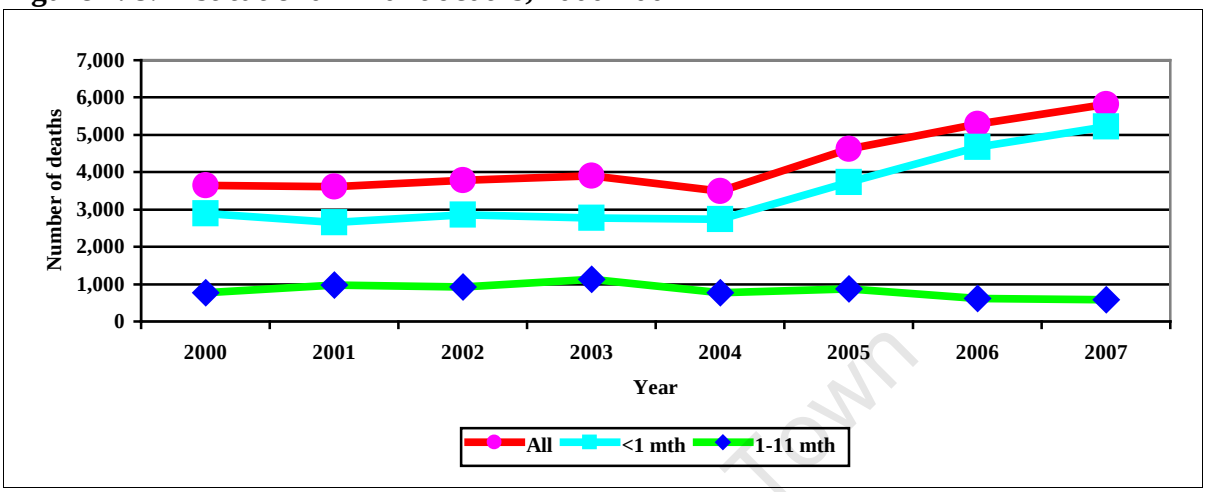


Source: Ghana MICS 2006

The increasing trend in infant mortality is also shown in the routine service delivery reports. Institutional infant deaths have increased by almost 10% from 5,291 in 2006 to 5,811 in 2007 (see Figure 2.8). Though deaths during the post neonatal period have declined, the number of deaths during the neonatal period have increased sharply thus off-setting any gains made. The 2003 Demographic and Health Survey (DHS) showed

that the increase in infant mortality was due mainly to the increase in neonatal deaths (Ghana Statistical Service 2004). Figure 2.8 depicts the trend of institutional infant deaths since 2000.

Figure 2. 8: **Institutional Infant deaths, 2000-2007**

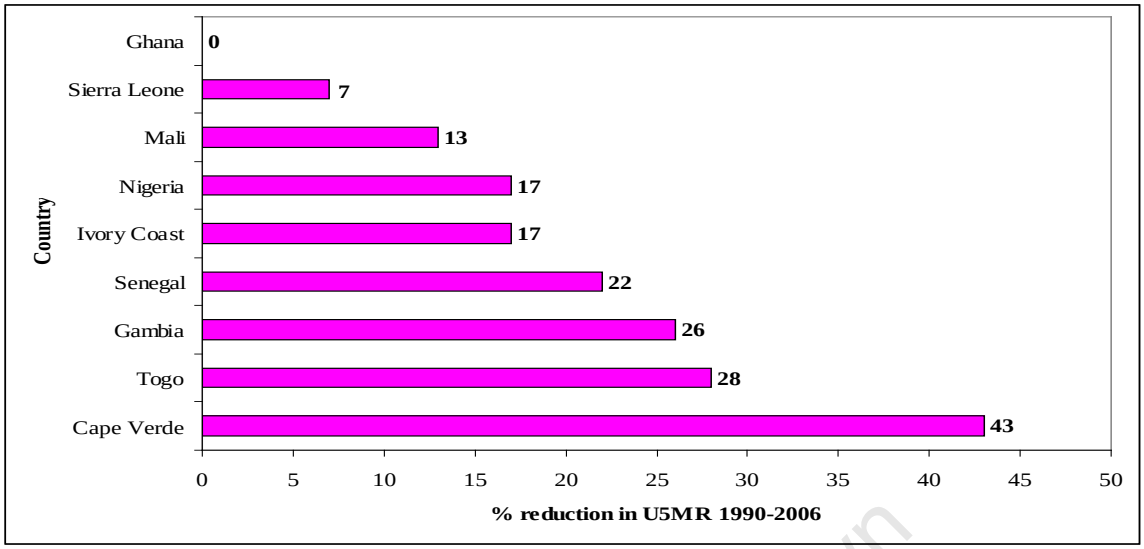


Source: GHS 2008

Comparing Ghana with countries tracked by UNICEF, based on the current level of under 5 mortality rates, Ghana had the 32nd highest rate out of a total of 194 countries and territories according to the 2008 State of the World's Children Report (UNICEF 2008). This was a marked deterioration from its previous rank of 48 in 2005[5] (UNICEF 2008). Even though Ghana has the lowest under 5 mortality in the West African sub-region, some of the countries (according to the report) have made better progress in reducing their under 5 mortality between 1990 to 2006 than has Ghana (Figure 2.9) (UNICEF 2008). With the target date for attaining the Millennium Development Goals (MDGs) now only about 6 years away, urgent actions (including ensuring equitable and universal financial protection particularly among the poor) must be taken if Ghana is to be among those countries that will achieve MDG4

[5] NB: Countries with lower under 5 mortality rates have a higher rank

Figure 2. 9: Percentage Reduction in U5MR between 1990 and 2006 in selected West African Countries



Source: UNICEF 2008

2.5.3 Disease burden

The pattern of diseases in the population has not shown any significant changes over the years. Malaria still tops the list of diseases managed at the outpatient departments of clinics and hospitals (44 per cent), followed by upper respiratory tract infections (6.8 per cent), diseases of the skin (4.3 per cent) and diarrhoeal diseases (4.2 per cent). Hypertension, a disease commonly found in adults falls within the top 10 causes of outpatient visits in Ghana (2.8 per cent). The high prevalence of hypertensive diseases and other chronic conditions reflects the aging population of the country (GHS 2007). Table 2.1 below shows the top ten diseases reported at outpatient departments in Ghana.

Table 2. 1: Top ten diseases reported at outpatient departments 2004

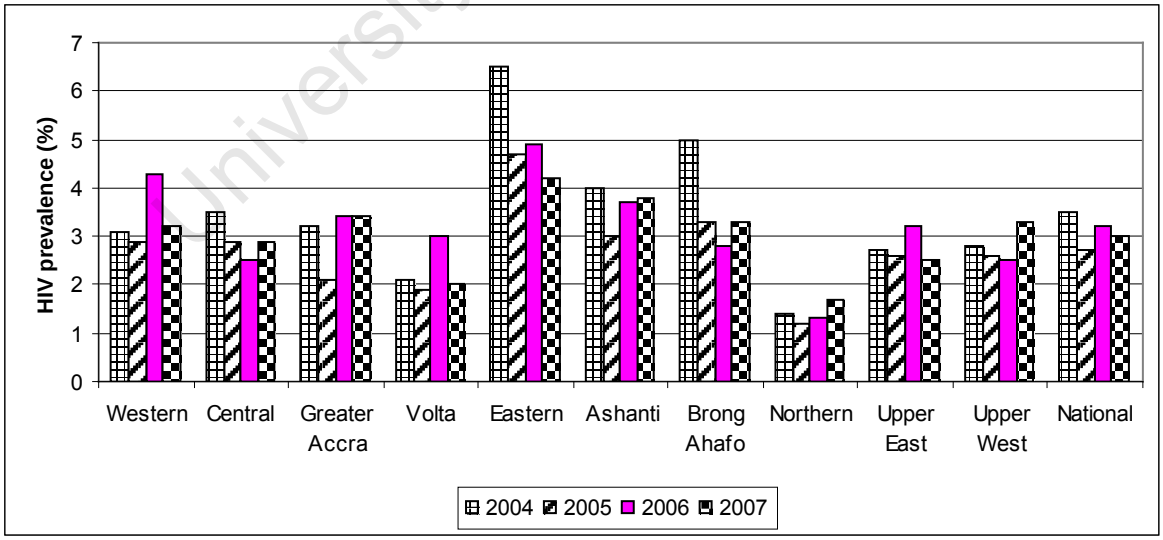
Disease	Male	Female	Total	%
Malaria	1,523,807	1,835,384	3,359,191	**43.94**
Acute Respiratory Infection	246,693	272,959	519,652	**6.80**
Skin Disease and ulcers	157,754	167,508	325,262	**4.25**
Diarrhoeal Diseases	154,473	167,931	322,404	**4.22**
Hypertension	78,918	133,436	212,354	**2.78**
Home/Occupational accidents	103,491	84,452	187,943	**2.46**
Acute Eye Infection	92,357	94,877	187,234	**2.45**
Pregnancy & related complications	_	150,613	150,613	**1.97**
Intestinal worm Infestation	70,985	80,345	151,330	**1.98**
Rheumatism & Joint pains	66,098	80,454	146,552	**1.92**

Source: GHS 2005

Also of concern is pregnancy related complications; this is particularly worrying because even though this is clearly restricted to women, it still stands out as one of the top ten causes of ill-health in the country.

According to HIV sentinel survey data, the 2007 national median prevalence of HIV declined to 2.6% from 3.2% in 2006 while the mean prevalence declined to 3.0% from 3.2% during the same period (GHS 2007). However available figures show commercial sex workers in Accra and Kumasi had respective rates of 76% and 82% in 2001, which reduced to 54% in 2002 in Accra (Ghana Statistical Service 2004). Sentinel Surveillance results also showed wide regional variations over the years. The lowest prevalence of 1.7% was recorded in the Northern region while the highest prevalence of 4.3% was reported in the Eastern region in 2007 (see Figure 2.10). Six regions showed increases in prevalence in 2007 compared with 2006 with the Northern region showing the highest percentage increase (36%) from 1.3% to 1.7%. However, since the prevalence in these regions was relatively low, the overall national prevalence actually declined. In spite of the decline in prevalence from 4.9% in 2006 to 4.2% in 2007, the Eastern region retains the position of the region with the highest prevalence in the country (Ghana Health Service 2008).

Figure 2. 10: Mean HIV Prevalence by region, 2004-2007



Source: GHS 2008

With regards to age group, HIV prevalence is highest among 25-29 age group compared to the rest of the age groups. There are 387 sites for counseling and testing in the country and the number of people on ARTs has increased over the years but it currently represents only 19.5% of those who actually need ARTs (Ghana Health Service 2008).

Guinea worm diseases which results from unsafe water and sanitation, particularly affect fifteen districts in the Northern, Brong Ahafo and Volta Regions and result in significant suffering and reduction in food production in these areas.

Non-communicable diseases are increasing with lifestyle changes. Hypertension, diabetes, chronic renal diseases, cancer and mental diseases are increasing and there is a rise in alcohol and tobacco use, and substance abuse. Road traffic accidents are now responsible for approximately 1,300 deaths and 10,000 injuries per year which is a source of concern.

2.6 Health care system, facilities, human resources and utilisation of health care

2.6.1 Brief history of health care system in Ghana

The history of colonial and post colonial health care system in Ghana is inseparable from the history of colonial control of power and resources. The colonial period saw the development of provision of modern health care that was mainly curative to the neglect of preventive care. Another feature of colonial health care system was that health care facilities were mostly established in the urban areas to the neglect of the rural areas. Thus the health care system was biased towards the provision of health care to the small elite group of colonial administrators and their assistants (Arhin-Tenkorang 2000). The health system was also developed to provide care to formal sector workers especially the mine workers who needed to remain strong to produce the minerals. Access to health care in the colonial period was mainly through direct payment at the point of service and this limited access to the few who had the means to pay.

After independence the then socialist and Pan-Africanist government led by Dr. Kwame Nkrumah tried to eliminate all barriers to access to health care and to ensure that everyone had access to health care irrespective of their socio-economic background. User fees were abolished and health care was thus free to all and funded through general taxes and donor support (Nyonator and Kutzin 1999). The free health care which was part of the socialist policies was also backed by the Arusha declaration of 1967 which intended to ensure universal access of social services to the poor and those living in marginalised rural areas. These fully tax funded health systems tried to address some of the inequities in geographical distribution of health services. Attention was given to developing a wide

range of primary health care facilities across the countries, promoting and strengthening preventive interventions such as immunisation and antenatal care.

In the 1980s Ghana like many African countries started crumbling under severe macroeconomic difficulties which resulted in negative or limited economic growth. As mentioned previously, Ghana's situation was exacerbated by an unstable political environment through frequent military interventions in governance. Ghana did not have the resources to maintain the free health services and indeed the socialist ideologies. Public health services deteriorated and added to this was the prescription of Structural Adjustment Programmes (SAP) by the IMF and World Bank which require government to reduce expenditure and to share cost which meant levying significant user fees for health care (as previously mentioned in chapter one). These were necessary requirements and conditions for loans that the country desperately needed. These developments led naturally to the growth of the private sector where previously they were limited or non existent. The results of all these developments which can be said to be largely influenced by colonial health policies, is a heavily fragmented and inequitable health system.

2.6.1.1 History of health care financing

Against the background of a fragmented health care system, the history of health care financing in Ghana can best be described as checkered. As mentioned previously user charges were instituted in all public health facilities before Ghana's independence and so health care was financed basically through taxation, user fees and donor support. After independence in 1957, health services became free to the public and were financed through general tax and donor support. Nevertheless, sustaining the quality and delivery of health services became problematic thereafter.

As part of the key reforms that Ghana and other developing countries had to carry out as part of the IMF and World Bank loan conditions, was to implement user fees in public health institutions. Ghana implemented the user fees to the latter achieving the 15% target of recurrent operating cost. However, the effects of these fees were devastating particularly among the poor who could no longer access health care. The biting effects effect of user fees naturally led to evolution and growth of community-based health insurance which was led largely by churches. Like in Thailand, strong political will (election promise) for the establishment of a NHI to replace user fees came through in 2001

Table 2. 2: Chronological Development of Health Care Financing in Ghana

Year	Event	Rationale	Features	Sources of Financing	Results
1957	Introduction of a national health service modeled after the British system	Driven by early economic performance natural resources, and strong export base	-Everyone entitled to free health care -Health care delivery through a network of publicly owned facilities	General Revenue	Not sustainable with the decline in economic performance, the scheme proved to be too expensive
1985	Co-payments introduced	Co-payments for services	-Co-payments for services -Health care delivery through a network of publicly owned facilities	General revenue and user fees	Out-of-pocket user charges from partial to full recovery
1992	Cash-and-carry system instituted	-to increase funds for providers -To make fee recovery legal -To restrict unnecessary use	-Full cost recovery for drugs -Reduced fees for children and primary care facilities	General revenue and user fees	Outpatient visits dropped by 66%
Early 1990s	Voluntary mutual health insurance organization movement	-Heavy cash-and-carry burden -Lack of social protect mechanisms -Lack of government oversight of the informal sector	-Subsidisation of the vulnerable by the better off -Social protection against the impoverishing cost of illness	-Donors such as the DANIDA and USAID -Community	-Reduced gap between those covered and those not covered -Paved the way for spread of MHOs
Early 2000s	Profusion of MHOs	-Trend in other African nations -Success of initial MHOs in Ghana -Encouragement by the Ministry of Health	-Spread across 67 out of 138 districts in 10 regions -Diverse in management styles and benefits -Based on district or occupation or religion or gender	-Donors such as the DANIDA and USAID -Community	-Financial protection and health services access for poor -Model for covering larger parts of the population
2003	National mandatory health insurance reform	-Relative success of the MHOs -Agenda of the ruling government (election platform)	-Abolish cash and carry -introduced mandatory health insurance -Expand coverage through MHOs in all districts	-National health insurance levy (NHIL)-2.5% VAT -2.5% of SSNIT[a] state budget transfers -Returns on investment made by the National Insurance Council -Voluntary contributions	-National Health Insurance Council set up -Interim administration arrangements introduced -Move toward 90 district mutual health schemes

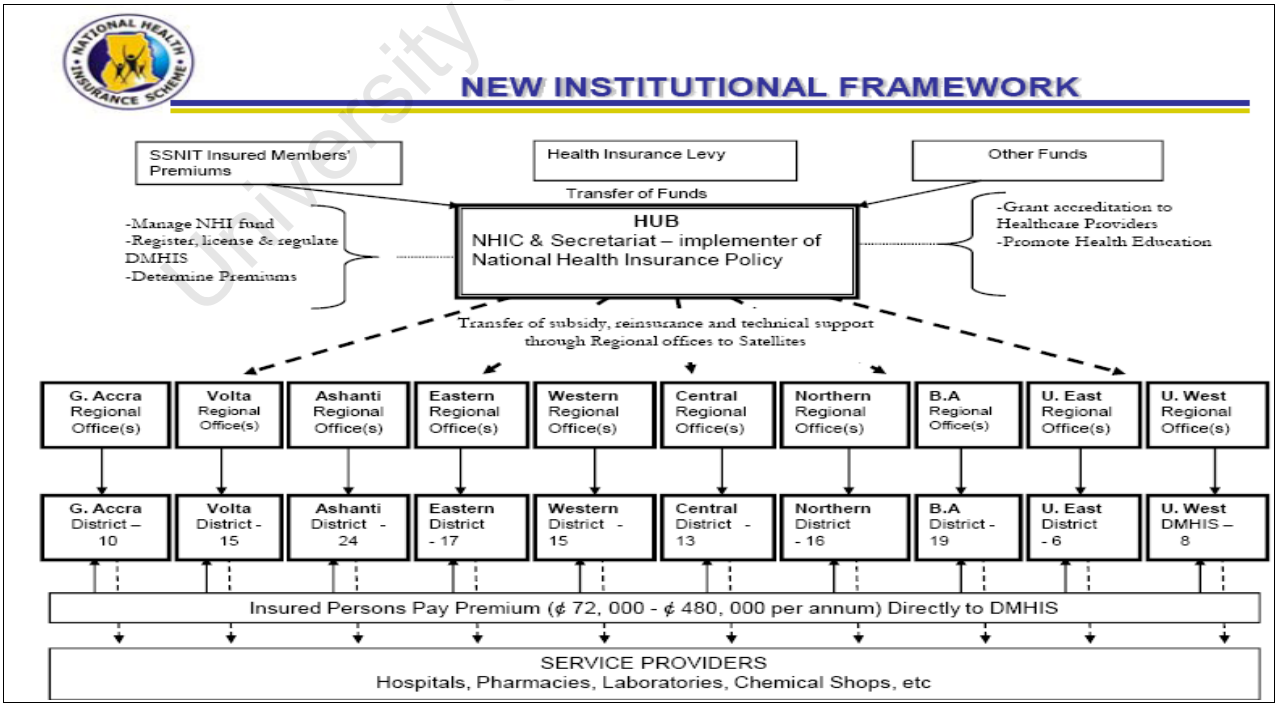
Source: Ramachandra and Hsiao 2007

[a] SSNIT= Social Security and National Insurance Trust. Formal sector employees contribute 5% of their incomes to the SSNIT and their employers pay 12.5%

Ghana has thus implemented most of the known health care financing mechanisms: general tax, out of pocket (OOP) payments, donor funding and health insurance (community based and the national health insurance). Table 2.2 gives a summary of the chronological development of health care financing in Ghana. The current concern is how to provide equitable health care financing in the country as well as promote universal coverage.

The NHI encompasses multiple schemes as shown in the framework (see Figure 2.11), with a mandatory health insurance scheme for those working in the formal sector, a district mutual health insurance (DHI) scheme in each of the country's 143 districts, private mutual health insurance schemes and private commercial insurance schemes in order to afford all Ghanaians the opportunity to join a health insurance scheme of their choice (Government of Ghana 2003). It is important to note that unlike the district mutual health insurance the private mutual and private commercial health insurance do not receive government subsidies. At present, there are not private and private commercial health insurance schemes.

Figure 2. 11: Institutional framework of the Ghana's National health insurance scheme



Source: Wahab 2008

The NHI is aimed at affording members access to health care without having to pay at the point of access and offer affordable medical care. The funding of the NHIS comes from

2.5% VAT levy on selected goods and services, 2.5% of workers Social Security and National Insurance Trust (SSNIT) contribution, Parliamentary approval from the consolidated fund, donations, grants, gifts and other voluntary contributions, money that may accrue from the investment by the National Health Insurance council (NHIC) and from graduated premium contributions by those in the informal sector of ¢72,000 (GH¢7.2) to ¢480,000 (GH¢48.0)[6] The purpose of the graduated premiums is to ensure equity through assessing who pays what being based on the criteria outlined in Table 2.3. The complexities and lack of clarity in these criteria has resulted in current premiums contributions being flat, with people generally paying the lowest premium of ¢72,000 and this makes it regressive. It is important to note that the NHIS (especially at the implementation stage) received a lot of financial support from international organizations particularly from DANIDA and that contributed to the smooth initiation of the scheme.

Table 2. 3: Graduated premium arrangement

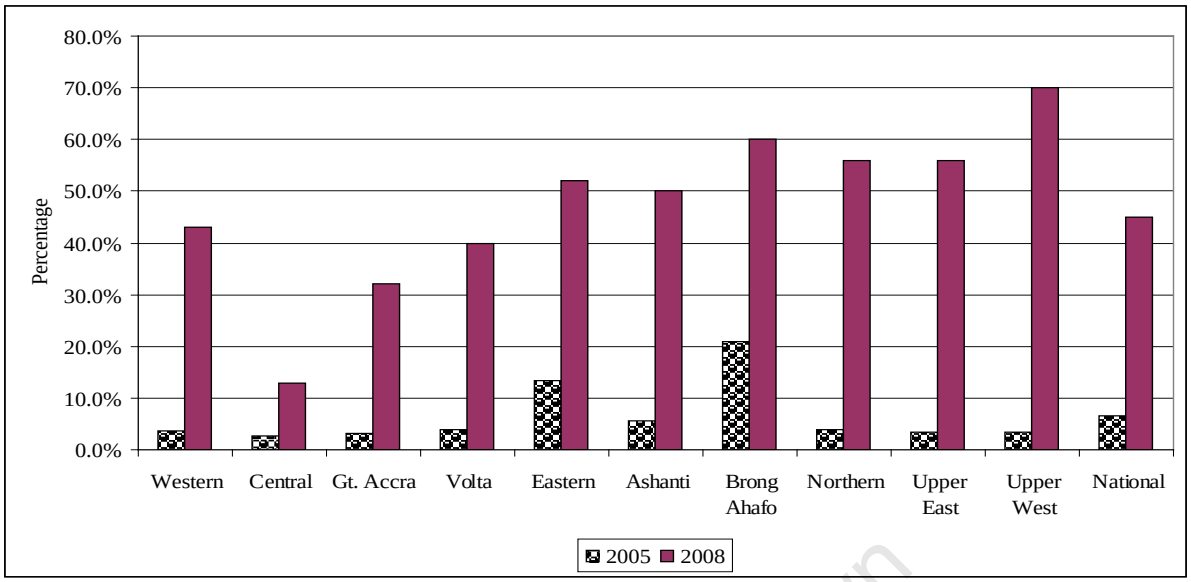
Core Poor	A	Adults who are unemployed and do not receive any identifiable and constant support from elsewhere for survival.	Free
Very Poor	B	Adults who are unemployed but Receive identifiable and Consistent financial support from sources of low income	¢72,000
Poor	C	Adults who are employed but receive low returns for their efforts and are unable to meet their basic needs	
Middle income	D	Adults who are employed and able to meet their basic needs	¢180,000
Rich	E	Adults who are able to meet their basic needs and some of their wants.	¢480,000
Very Rich	F	Adults who are able to meet their needs and most of their wants.	

Source: Ministerial Task Team 2002

Membership of the NHIS is legally mandatory (unless alternative private health insurance can be demonstrated); however, in practice membership is optional for non-formal sector workers (the bulk of the population). The growth of membership has nevertheless been impressive – with card-holders rising from 6.6% of the population in 2005 to 45% three years later in 2008. This compares more than favourably with many other schemes – in Tanzania, for example, total enrolment in the new SHI Benefit scheme is reported to be covering less than 1% of the population (McIntyre, Garshong et al. 2008).

[6] Ghana currency was redenominated in July 2007 such that ¢10,000 became GH¢1. The name of the currency changed from "cedis (¢)" to "Ghana cedis (GH¢)". The inter-bank exchange rate to the US$ at the time was ¢9400 (¢0.94) to US$1

Figure 2. 12: Proportion NHIS card-holders, by region, 2005 & 2008



Source: Annual health sector reviews for 2005 and 2008, NHIS

The variation across regions is very high, however, ranging from 13% membership in Central Region to 70% in Upper West in 2008. These variations relate in part to previous patterns of community-based health insurance membership (Brong Ahafo, for example, had many schemes in operation prior to the NHIS being established). However, the rapid growth, especially in the northern regions, suggests that high uptake by exempt groups and the informal sector is also playing a role (see Figure 2.12). Greater Accra has a relatively low membership (32%), in part perhaps because of a greater propensity to use private insurance here.

The NHIA does not break down its card-holders by category of member but does provide this information for 'registrants' (a larger group comprising those who have expressed interest in joining as well as those who are actually holding valid cards). The evolution in registrants is shown in Table 2.4. It indicates which groups have fuelled the growth in membership: the formal sector, as would be expected, has not increased much over the past three years and only comprises 3% of the population in 2008. By contrast, informal sector registrants have grown from 3% to 16% of the population. Another category which has seen a large increase has been the children of members (this group is exempt), which grew from 8% to 27% (Ministry of Health 2009; Witter and Garshong 2009). The indigent, however, fell from just under 4% of the population to 1% in 2008 which is a source of concern given that over 20% of the population are estimated to below the national poverty line (Ministry of Health 2009).

Table 2. 4 NHIS registrants, by category, 2006 & 2008

	2005		2008	
Membership categories	**Number of registrants**	**Proportion of population**	**Number of registrants**	**Proportion of population**
Formal sector	468,092	2.24%	811,567	3%
Informal sector	615,450	2.94%	3,727,454	16%
Paying members	1,083,542	5.18%	4,539,021	19.25%
Pensioners	43,208	0.21%	71,147	0.30%
Children	1,751,175	8.37%	6,305,727	27%
70+	266,421	1.27%	816,956	4%
Indigent	790,078	3.77%	302,979	1%
Pregnant women			432,728	2%
Overall exempt	2,850,882	13.62%	7,929,537	34%
Total	3,934,424	18.79%	12,468,558	54%
% of registrants paying	28%		36%	

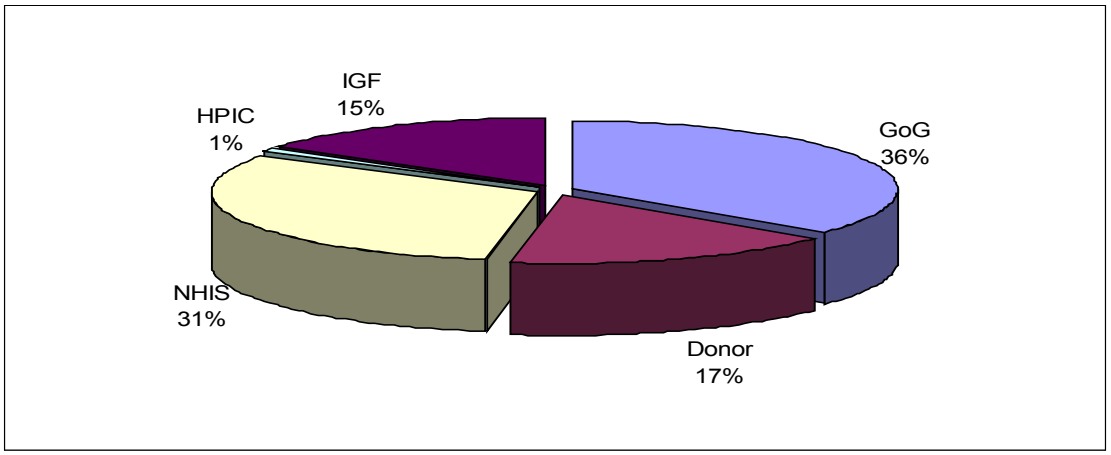
Source: Annual Health Sector Reviews for 2006 and 2008

2.6.2 Current funding of the health system

There is a complete lack of data on private for-profit health services in Ghana. These services are quite limited in Ghana (mainly small clinics, maternity homes and drug sellers), and the vast majority of services are provided by public sector and faith-based (mission) facilities. The information presented below relates to these services and does not include information on the private for-profit sector.

The main sources of funding for the health sector in 2008 includes Government of Ghana (GoG), Donor, internally generated funds (IGF) and the National Health Insurance funds. It should be noted that over 80% of the NHIS funds collected are outside the control of the health sector budget. Only 17.9% in the 2008 health budget was allocated to the NHIS by the Ministry of Finance. Payments by DHIS schemes to health facilities on behalf of NHI members are captured in the IGF alongside out-of-pocket payment. Donor support still remains a significant part of health sector funding (see Figure 2.13).

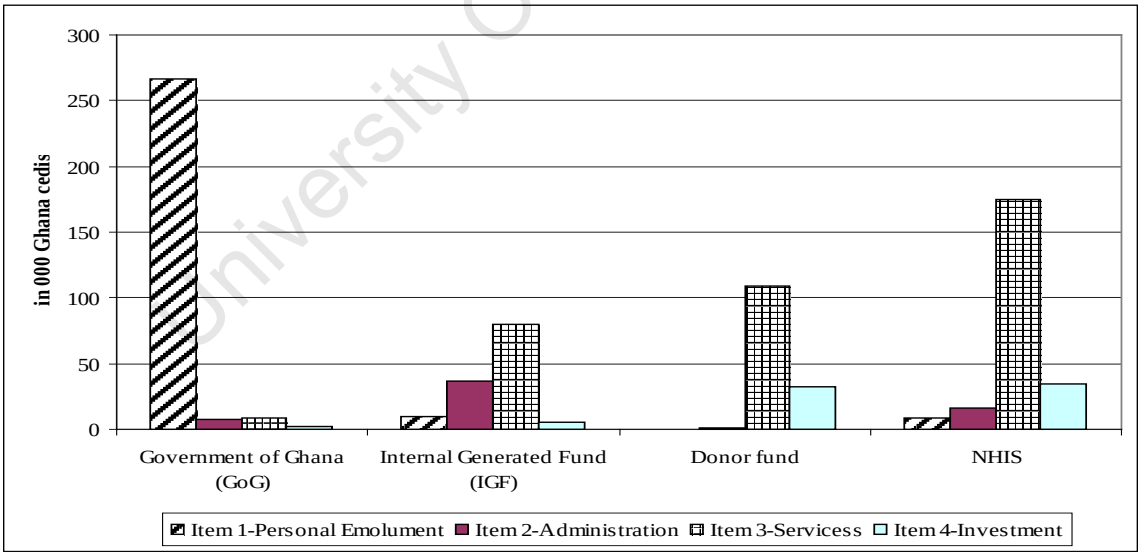
Figure 2. 13: Source of health sector expenditure in 2008



Source: Ministry of Health 2009

Funding for service delivery continues to be faced with many challenges. As the wage bill within the sector has grown significantly, this has affected the level of funds available for service provision and development or investment. This is particularly so with GoG subsidy (see Figure 2.14). Basically GoG funds are used almost exclusively to fund salaries and wages while Donor funds are paying for drugs, equipment and other supplies.

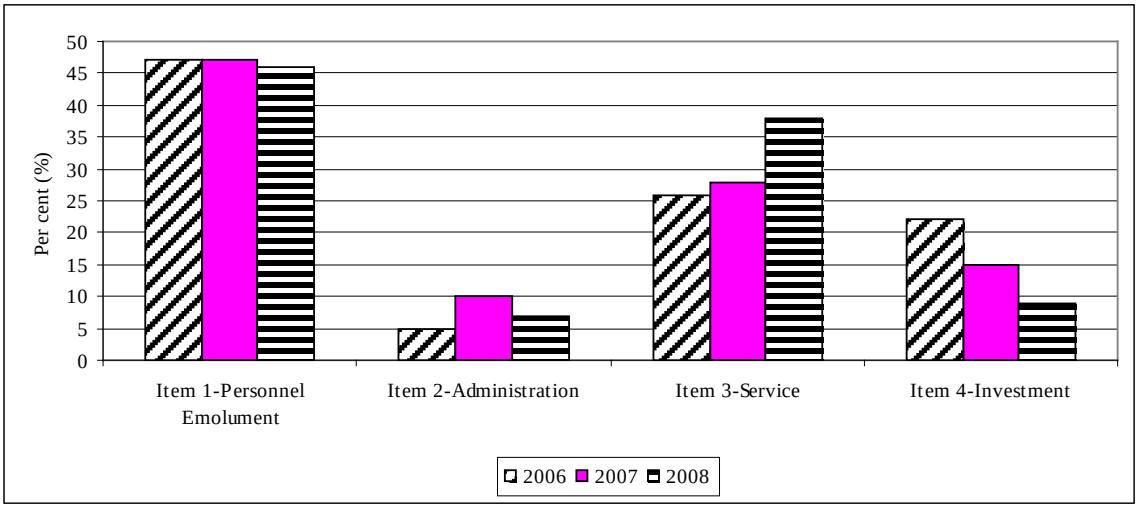
Figure 2. 14: Expenditure by source and line item 2008



Source: Ministry of Health 2009

A comparison of spending by item shows that in spite of the increasing costs of personnel emoluments they are holding steady around 46-47% of total expenditure (see Figure 2.15). Over the three years item 2 shows no particular trend. Spending on Services is gaining rapidly at the expense of investment, which is falling rapidly, even in nominal cedi terms.

Figure 2. 15: Total expenditure by line items from 2006-2008



Source: Ministry of Health 2009

The shift of financial resources to the district level has been maintained. As shown in Table 2.5, **a**bout 62% of the approved budget went to the District level (district hospitals, district health directorates and sub-districts). On the whole, about 76% of the approved budget was disbursed to budget management centres (BMCs) for implementation of their 2007 Programme of Work (Ministry of Health 2009). The lowest disbursement rate of 16% was to the district hospitals followed by the regional hospitals with 21%.

Table 2. 5: Approved Budget Amount Disbursed by Level, 2007

Level	Approved Budget (GH¢)[7]	Share of Budget (%)	Amount Disbursed (GH¢)	Approved Budget Disbursed (%)
GHS HQ	1,081,829.95	22	1,006,470.87	93
Regional Health Directorates	503,900.98	10	564,205.67	112
Regional Hospitals	277,564.42	6	57,513.00	21
District Health Administration	888,394.98	18	1,299,656.00	146
District Hospital	1,254,502.29	26	194,458.00	16
Sub-districts	897,918.94	18	611,643.00	68
Total	**4,904,111.56**	**100**	**3,733,946.54**	**76**

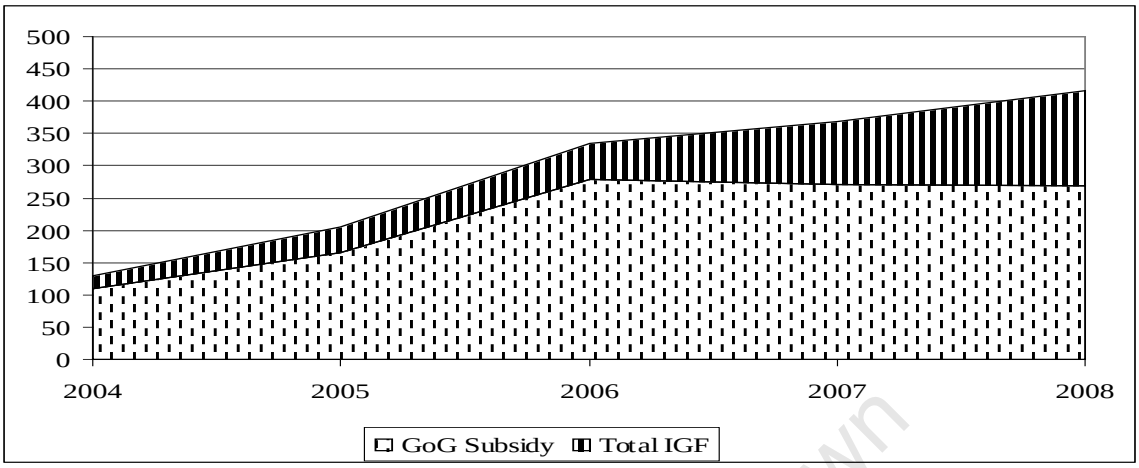
Source: Ministry of Health Annual Review report 2008

Health sector financing is changing in two ways: the relative shares of different sources are changing, and the method/ease of access to those sources is also changing. In terms of sources, financing is characterised by a levelling off of the share of GoG funding even in nominal terms, and a significant increase in share of IGF, powered by the growth of the

[7] Ghana currency was redenominated in July 2007; the name of the currency changed from ***cedis (¢)*** to ***Ghana cedis (GH¢).*** The equivalent rate is ¢10,000 = GH¢1. The inter-bank exchange rate (September 2009) is GH¢1.45= US$1.

NHIS. From 2006 to 2008, the GoG subsidy has increased by only 11% in nominal terms, whereas IGF has increased by 176% (see Figure 2.16).

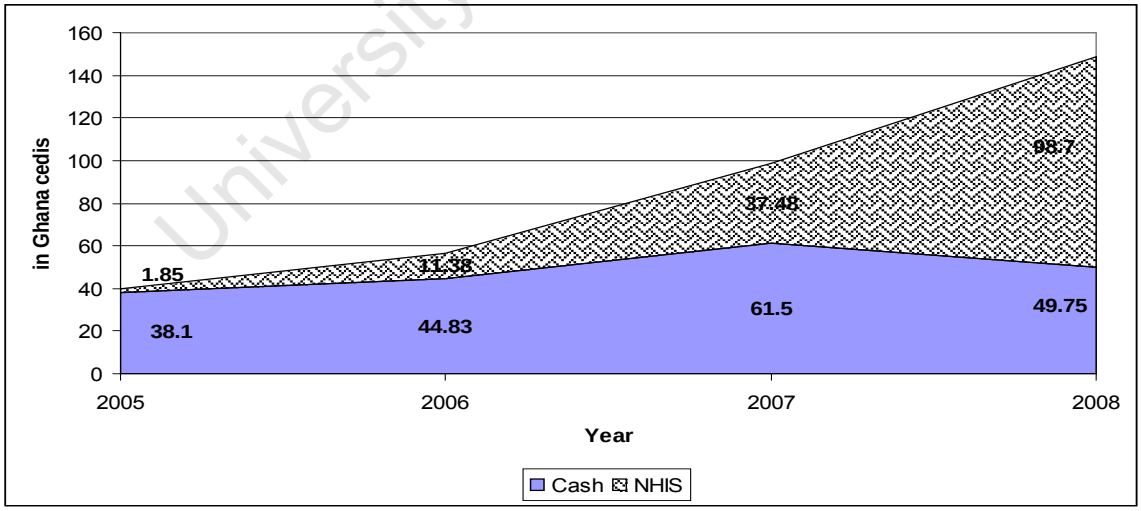
Figure 2. 16 : Growth of GoG subsidy and total IGF between 2004 and 2008



Source: Ministry of Health 2009

The IGF funds comprise two separate income streams: insurance claims paid through NHIS and the district scheme concerned, and out-of-pocket payment of user fees known as "Cash and Carry". Within these, the Cash and Carry component is diminishing in importance (see Figure 2.17) as the spread of NHIS membership increases.

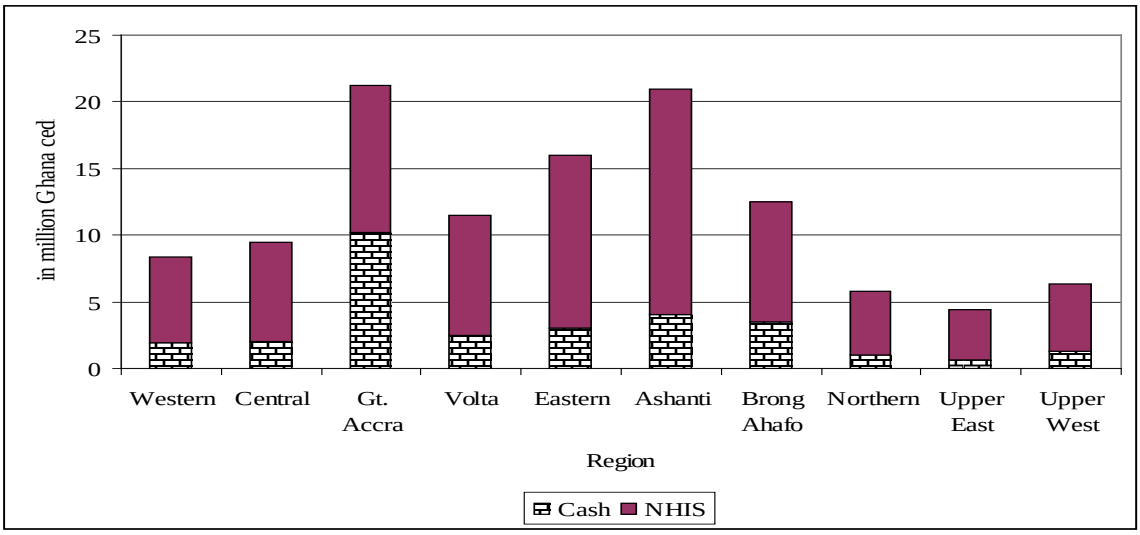
Figure 2. 17: Internally Generated Funds (IGF) in nominal Ghana cedis (millions)



Source: Ministry of Health 2009

The share of NHIS income and 'cash and carry' varies widely amongst regions. NHIS funding is proportionately most important in the North and least important in Greater Accra (see Figure 2.18).

Figure 2. 18: Shares of NHIS and 'cash and carry', by region, 2008



Source: Ministry of Health 2009

Instead of the NHIS merely covering some of the recurrent non salary costs of services, as user fees used to, it is now gradually expanding to fund other functions. For instance in the guideline for the 2009 budget, items 3 (services costs) and item 2 (administration) are either reduced or cut entirely for facilities which generate income, and hospitals are directed to set aside 10% of the IGF revenue for replacement for equipment and minor rehabilitation of infrastructure. IGF revenue is also used to pay staff. The overall need to reduce growth in item 1 (personal emoluments) may be circumvented by the fact that institutions are now able to hire casual staff and pay from their IGF. The trend towards funding curative care (e.g. staff costs, drugs, etc) fully from NHIS could pose a risk and could affect the sustainability of the National Health Insurance Fund (NHIF) (Ministry of Health 2009).

2.6.3 Organisation of the health care system

Three key players in the Ghanaian health system include the Ministry of Health (MoH), the Ghana Health Services (GHS) and Christian Health Association of Ghana (CHAG). The MoH is responsible for policy formulations and all stakeholders in the health sector are ultimately responsible to the MoH. The GHS established by the Ghana Health Service and Teaching Hospital Act 525, 1996, is responsible for all state health facilities except teaching hospitals and those owned by the military (Ministry of Health 2006). CHAG acts on behalf of 16 Christian churches who are involved in the provision of health care.

2.6.3.1 Policy framework

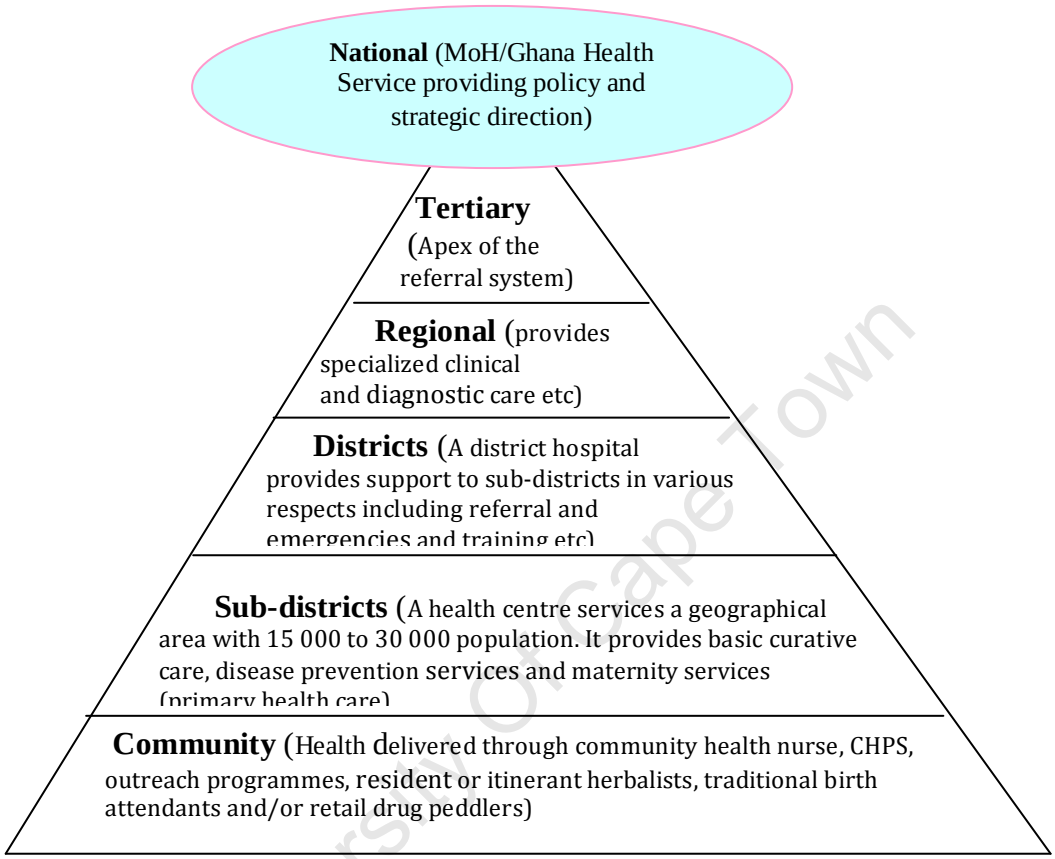
The policy framework of the national health care system is focused on the core problems of the country. The government is determined to improve access and equity to essential health care and ensure that the health sector plays an essential role in the national Poverty Reduction Strategy. The strategic objective is to improve geographic, financial and socio-cultural access, particularly to vulnerable groups, to quality health care services.

2.6.3.2 Public

Functionally, GHS is organized at five Levels (see Figure 2.19). The highest at the apex being the tertiary hospitals and the lowest are the community clinics. A relatively unique aspect of the public health system in Ghana is the Community- based Health Services and Planning (CHPS). Operationally, CHPS is defined as a "strategy for the health care delivery system to provide cost-effective and adequate quality basic primary health services to individuals and households in the communities where they live through engaging the community in the planning and delivery of services" (Nyonator 2004)[8]. CHPS basically entails a nurse living in a defined community and offering limited curative and preventive health care services. Even though, CHPS is seen as a well tested strategy for reducing inequities and promoting geographical access to basic health care, its main challenge is the enormous resources required to roll out the strategy to all parts of the country.

[8] Page 5

Figure 2. 19: **Organizational structure of Ghana health services delivery**



Source: GHS 2007

2.6.3.3 Private

In addition to the government health care system, churches play a major role in service provision. CHAG coordinates its programmes with the MoH and GHS. CHAG predominantly focus on the poorest and vulnerable groups who are mostly in the rural areas. Though it is an independent health organization, CHAG and GHS institutions are closely linked in rural health provision and are de facto fully integrated in the national health system with staff of CHAG institutions receiving their salaries from the MoH. There is no present competition between CHAG and GHS: A district or sub district has either a CHAG or a GHS health facility. CHAG is seen to be playing a complementary role to the MOH and the GHS and is the 2nd largest provider of health services in the country. It is estimated that approximately 42% of total health services in the country are provided by CHAG's member institutions.

Other private health care providers include for-profit clinics which provide just 2% of health care and a significant number of chemical sellers and traditional healers which are mostly patronized by the poor in rural areas.

2.6.4 Health facilities

In Ghana, health facilities are public, private not for profit e.g. CHAG, and private self-financing. Public facilities include the teaching hospitals and all GHS facilities (hospitals, polyclinics, health centres, health posts, CHPS compounds, small clinics), including the 10 regional hospitals. Private facilities include hospitals, maternity homes, clinics and chemical sellers. Chemical sellers are more widely spread in rural communities and usually the first point of call. In the private sector, Greater Accra region has almost a quarter (24.8 per cent) of all private health facilities, with the Ashanti region following with 20 per cent. The Upper East region recorded the least (1.6%) private health facilities in the country in 2004. There are more health facilities (over 60%) and beds (over 70%) in Ashanti, Eastern, Volta, Western and Greater Accra regions than the rest of the regions in the country (see Tables 2.6 and 2.7) and this is understandable given the large population sizes in these areas (Ghana Health Service 2005).

Table 2. 6: Regional Distribution of Health Facilities-2004 and relation to population distribution

Region	Population 2000	Teaching Hospital	Regional hospitals	Other facilities	Total
Western	1,924.577	0	1	310	311
Central	1,593,823	0	1	263	264
Greater Accra	2,905,726	1	1	308	310
Volta	1,635,421	0	1	338	339
Eastern	2,106,696	0	1	389	390
Ashanti	3,612,950	1	0	445	446
Brong Ahafo	1,815,408	0	1	250	251
Northern	1,820,806	0	1	193	194
Upper East	920,089	0	1	132	133
Upper West	576,583	0	1	101	102
Total	18,912,079	2	9	2,729	2,740

Source: GHS 2005

In terms of ownership of beds, government has over 50% of the beds capacity in the country (see Table 2.7).

Table 2. 7: Distribution of Hospital beds by Region and Ownership - 2004 in relation to population distribution

Region	Population 2000	Government	Mission	Private/public	Private	Total
Western	1,924.577	1,050	480	308	0	1,838
Central	1,593,823	1,130	366	54	0	1,550
G.Accra	2,905,726	2,871	0	759	593	4,223
Volta	1,635,421	1,260	967	47	0	2,274
Eastern	2,106,696	1,410	929	174	0	2,513
Ashanti	3,612,950	1,769	1196	256	594	3,815
B.Ahafo	1,815,408	384	1011	44	9	1,448
Northern	1,820,806	722	339	0	0	1,061
U.East	920,089	469	253	0	0	722
U.West	576,583	346	336	0	0	682
Total	18,912,079	11,411	5,877	1,642	1,196	**20,126**

Source: GHS 2005

Available evidence shows that there has been a general increase in the number of health facilities in both the public and private sectors. The number of hospitals in the public sector increased from 251 in 1991 to 333 in 2001. For Greater Accra region, the number of hospitals almost doubled within the period, while the number of hospitals in Ashanti Region increased by a third. On the other hand, the number of hospitals in the Northern, Central, Volta and Upper East Regions remained almost the same over the period. With regard to health centres, significant increases in the numbers occurred in all regions.

2.6.5 Human resources

The provision of human resources in adequate quantity and with appropriate competence to provide health care services is critical in improving equity in access to health care services. Ghana is presently severely short of qualified human resources for health (GHS, 2003). From the Annual Health Sector Review in 2006, the health sector has a workforce of about 43,000 people. The public sector employs about 41,000 of which 4.8% are medical doctors, 34.7% are nurses (including midwives), 3.3% are pharmacists and 57.2% are non-clinical staff (Ghana Health Service 2007; GHS 2007). The issue here is the large number of non-clinical staff as against clinical staff in the health sector. The low numbers can be attributed partly to the low production levels of medical personnel by the available training institutions, which always fall short of annual requirements. In 2002, for instance, the medical training schools in Ghana produced only 159 physicians as against a higher potential demand of over 1,000. This situation is also exacerbated by the

high rates of emigration of trained doctors, inequitable distribution of staff and great disparities between the urban southern regions and the more rural northern ones. This has resulted in a very low level of medical personnel-to-population ratios in Ghana (Table 2.8) that can hardly support the optimal running of the present health system, let alone any scaled-up health system. For instance, the Ghana Service Provision Assessment estimated for the year 2002 a doctor to population of about 1: 8,554.

Table 2. 8: Health Staff Population ratios

Category of staff	2005	Target for 2010
Doctors	1: 10,000	1: 5000
Nurses	1:1,587	1: 1,000
Pharmacists	1: 14,286	1: 10,000

A review of the health sector in 2006, not only showed high health personnel-population ratios but marked and wide geographical disparity across the country. Whilst Greater Accra has 3 doctors to 10,000 people, Northern region has 1 doctor to 100,000 people (see Table 2.9). Greater Accra has already reached the 2010 target staff: population ratios for doctors, nurses and pharmacists (see Table 2.9). However, a visit to any health institution including Korle-Bu Teaching Hospital reveals a woefully inadequate number of staff on duty taking care of both outpatients and inpatients.

Table 2. 9: Selected Health Staff: Population Ratio (both public and private) 2005

Regions	Doctors/10000 pop	Nurse/10000 pop	Pharmacists/10000 pop
Western	0.5	4.4	0.2
Central	0.4	5.9	0.2
Greater Accra	3	12	2.6
Volta	0.4	6.3	0.1
Eastern	0.5	6.6	0.2
Ashanti	1	4.1	0.6
Brong Ahafo	0.4	3.4	0.1
Northern	0.1	3.4	0.1
Upper East	0.4	7.1	0.1
Upper West	0.2	5.6	0.03

Source: Health Sector Review 2006

A key aspect of the supply of health personnel relates to spatial distribution. While doctors are mainly stationed in hospitals, the regional shares of doctors suggest a substantial mismatch between the number of hospitals and the number of doctors. For instance, Greater Accra region and Ashanti region have a little over half (55 per cent) of the hospitals (both public and private) in Ghana but have 69 per cent of doctors. On the other hand, Volta region with 8.9 per cent of Ghana's hospitals has only 4.7 percent of

doctors and the three northern regions with 7.6 per cent of hospitals have only a total of 5.1 per cent of doctors.

Of late, the human resource problems seem to be compounded by a high rate of internal and external attrition. The public sector is losing large numbers of its health workers. The more serious threat seems to emanate from external attrition. The situation is no different with other health workers such as nurses, pharmacists and laboratory technicians. The State of the Ghanaian Economy Report notes that 68 per cent of medical officers, trained between 1993 and 2000, have left the country (Institute of Statistical Social and Economic Research 2008). The major beneficiaries of Ghana's loss of medical personnel include the United States of America (USA), the United Kingdom (UK), Germany and Canada. The USA, for instance, is estimated to be employing 1,200 physicians of Ghanaian origin; whilst the United Kingdom has about 300 doctors , South Africa 150 and Canada 50 (Institute of Statistical Social and Economic Research 2008). Ironically, there seem to be more Ghanaian doctors working outside the country than inside Ghana.

Not only is Ghana losing medical doctors but also nurses. The attrition of nurses reached alarming proportions during the past 8 years (see Table 2.10). It is estimated that Ghana has lost about 50% of its professional nurses to the UK, USA and Canada in the last 10 years. The available records show that about 530 nurses left Ghana in 2002 compared to 328 in 1999.

Table 2. 10: Migration and Destination of Ghanaian Nurses

	1998	1999	2000	2001	2002	2003	Total
USA	50	42	44	129	81	80	426
UK	97	265	646	738	405	317	2468
Canada	12	13	26	46	33	10	140
South Africa	9	4	3	2	6	-	24
Others	4	4	8	8	5	-	29
Total	172	328	727	923	530	407	3087

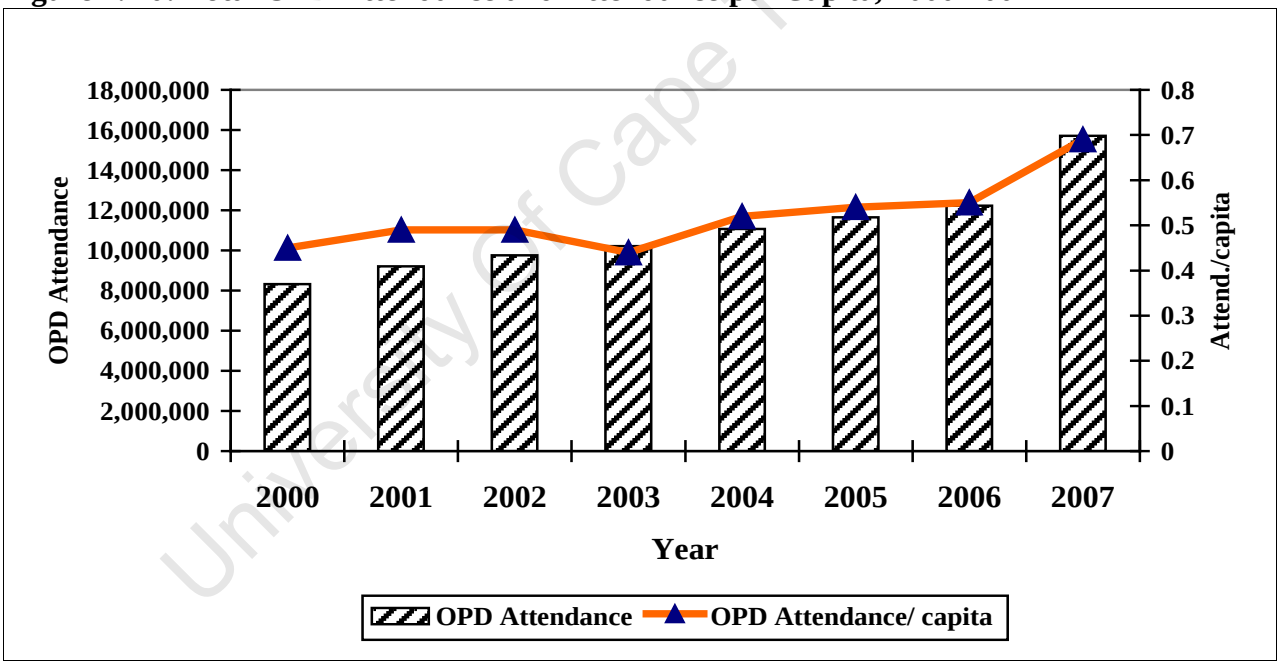
Source: Health Sector Review 2006

The increasing outflow of medical personnel has worsened the already precarious human resource situation and created a human resource gap in the health sector, which does not auger well for equitable access and sustainability of the health system.

2.6.6 Utilisation of health services

The rate of utilization of health services (from public and CHAG institutions) by the population provides some insights in service accessibility. Since 2000, the utilization of OPD services has increased as shown by the total OPD attendances as well as the attendances per capita (see Figure 2.20). Total OPD attendances rose from 12,233,527 in 2006 to 15,712,070 in 2007. This amounts to a 28.4% increase over the 2006 performance. During this period the attendance per capita increased from 0.55 to 0.69, representing a 25.5% increase (Ghana Health Service 2007). This represents the highest annual increase. Much of this remarkable achievement is attributable to the national health insurance scheme. It is believed that the implementation of the NHIS in 2004 has removed a significant financial barrier to access to services but it is important to know who is bearing the burden of this financing mechanism.

Figure 2. 20: Total OPD Attendance and Attendance per Capita, 2000-2007

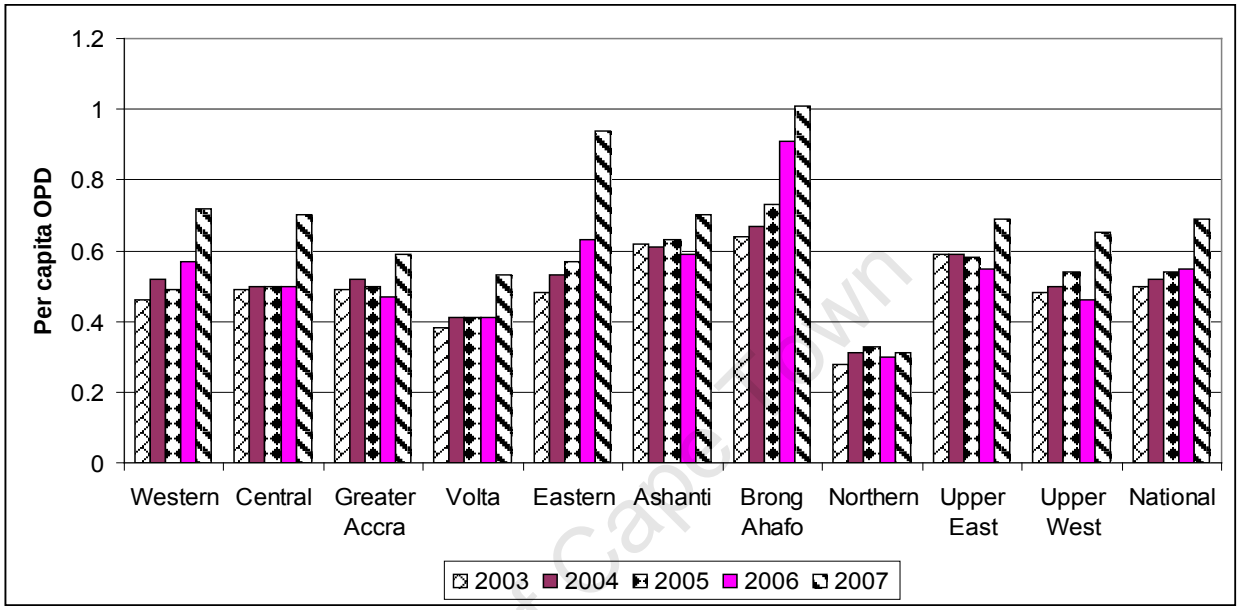


Source: GHS 2008

Analysis of regional performance in terms of service utilisation shows wide variations. While the Brong-Ahafo region attained attendance per capita above 1.0, the performance in the Northern region is just above 0.3. Indeed the Northern region is the only region that has shown very little progress in the utilisation of OPD services during the last 6 years. During this period attendance per capita in this region has not risen above 0.3 (see Figure 2.21). There are still significant barriers to utilisation of health services in the Northern Region. Occupying about 30% of the land area of the country, many of the over 5,000 settlements in the region are simply too far from health facilities. This situation is not

helped by the poor road network within the region. CHPS must be vigorously promoted to address the issue of inadequate geographical access while the other sectors including the District Assemblies address the challenges facing implementation of the Health Insurance and improvement in the road network.

Figure 2. 21: Trend in Per Capita OPD Attendance by Region, 2003-2007.



Source: GHS 2008

The Bed Occupancy Rate (BOR) in any hospital, within a specified time frame, represents the proportion of the beds available in the facility that were occupied by patients during that period. It is a measure of efficiency of the hospitals operations. The Average Length Of Stay (ALOS) on the other hand is affected by the disease pattern as well as the quality of interventions. A bed occupancy rate of below 80% is an indication that the available beds are being under-utilised and implies technical inefficiency (Akazili, Adjuik et al. 2008). The Greater Accra region reported 73.4% occupancy while the Brong-Ahafo Region reported 66.5% in 2007 (see Table 2.11). The other regions all reported below 60% occupancy. In Table 2.9 below, the Teaching and Psychiatric Hospitals have been excluded. The Teaching Hospitals tend to handle more complicated cases referred from other facilities and this increases the duration of hospitalisation while the Psychiatric Hospitals and other specialised hospitals also deal with cases that tend to stay for longer periods. For example, in 2007 if data from the Teaching Hospitals and Psychiatric Hospitals are included, the ALOS for the Ashanti region increased from 3.7 to 4.8 days, that of the Greater Accra increased from 4.7 to 11.2 days, while the national figure saw an increased from 4.1 to 5.2 days.

Table 2. 11: Bed Occupancy Rates (BOR) and Average Length of Stay (ALOS) in Public Hospitals (excluding Teaching and Psychiatric Hospitals), 2005-2007

Region	2005		2006		2007	
	BOR	ALOS	BOR	ALOS	BOR	ALOS
Ashanti	47.6	3.7	44.3	3.4	52.1	3.7
B/Ahafo	57.5	4.5	55.3	4.0	66.5	3.9
Central	50.2	4.0	46.2	3.8	50.7	3.9
Eastern	50.3	4.7	50.7	4.9	54.3	5.0
GAR	54.7	4.0	57.6	4.2	73.4	4.7
Northern	60.8	3.1	49.0	3.5	55.1	3.0
U/ East	45.9	3.0	41.1	3.1	45.9	3.0
U/West	52.1	3.4	43.2	3.6	53.5	3.7
Volta	45.3	5.6	46.3	5.6	50.6	5.7
Western	51.9	4.2	49.4	4.1	48.7	3.9
Total	50.9	4.1	48.4	4.1	54.4	4.1

2.7 Summary

Located on the west coast of West Africa, with a tropical climate, Ghana has a population of about 21 million which is growing at 2.5%. Ghana was the first Sub-Saharan Africa country to gain independence in 1957. Compared to other neighbouring countries, Ghana's economy has seen some impressive growth, with GDP increasing from 3.7% in 2000 to 6.8% in 2008; but the results of the growth is not fairly distributed as geographic and socio-economic equalities are wide with the Gini coefficient estimated at 40.9% in 2008. Wide regional variations in poverty are also observed with the north having higher poverty than the south.

The main source of health sector financing is taxation, but OOP payments are very significant. The National health Insurance Scheme (NHIS), launched in 2004 to replace user fees or "cash and carry", is mainly funded through tax and is increasingly becoming a significant financing mechanism. Government expenditure on health has seen some increases over the years and the country seems to have reached the Abuja target of allocating 15% of government revenue to health; however over 80% of the increase has gone to wages and salaries leaving a small share for service delivery.

Health status in Ghana is generally poor. Life expectancy is less than 60 years and a high and increasing maternal mortality is a source of concern as the MDGs target date draws

closer. Infant and under 5 mortality is also high and particularly so among the poor. Malaria and upper respiratory tract infections are the top reasons for OPD services.

The key players in the health sector are the Ministry of Health which formulates policy, the Ghana Health Service which provides over 50% of services and the Christian Health Association of Ghana that provides about 42% of health care. For-profit clinics and a significant number of chemical sellers are also in operation in the country, as well as traditional healers.

The location of health facilities in Ghana is a reflection of colonial health care policy where most of the health facilities were located in the urban areas. Despite efforts to provide more health facilities in rural areas after independence in line with Primary Health Care policy, over 60% of formal health care facilities are currently based in the urban areas and so naturally most of the health professionals are also based there resulting in wide geographical disparity in health profession-population ratio. The staffing problem in the country is further compounded by high attrition of key health staff (doctors and nurses) particularly through emigration. The burden of health care provision is thus left on the few staff remaining who are over-burdened by recent increases in health service utilization.

The Ghanaian health system faces major challenges, not least of all constrained resources (financial and human) to meet a substantial burden of ill-health.

Chapter Three: Literature Review

"The mistakes of others are the lessons for only the wise"
A Ghanaian proverb

3.0 Introduction

This section reviews the relevant literature for the study. Although I did not undertake a formal systematic review, I comprehensively searched the literature on health care financing with respect to low- and middle-income countries through key electronic search engines (including PubMed, CINAHL and Medline) and a search of relevant websites (including World Bank, WHO, ID21). The review of literature is to give a general perspective and context to the study. As this research evaluates equity in health care financing, this review focuses on explaining the concept of equity and critically reviewing alternative health financing mechanisms.

3.1 Equity[9]

According to Mooney, the notion of equity is not straightforward and often is complex to define (Mooney 1994) and may even mean different things to different people in different societies at different times. This may be the reason why McLachlan and Maynard (1982), suggested that *"… equity like beauty, is in the mind of the beholder.."* (Wagstaff and van Doorslaer 2000). Given the different perspectives on the concept of equity, it is sometimes erroneously confused with equality. Equality is a condition of being equal. The distinction is important because being unequal may be judged to be fair or equitable (McIntyre 1997). Thus, equity can be viewed as a moral or ethical principle, which refers to fairness and justice in the distribution of resources, welfare and opportunities among different sub-groups of a population. Hence inequity implies that there are unfair disparities in the resource and welfare distribution.

Since the interpretation of fairness and justice in any given society is influenced to a large extent by the ideology of that society, it would be useful to consider briefly some theories of justice and fairness which often shape a society's ideological perspectives. Gillon (1986) provides a helpful summary of the various theories of justice and fairness.

[9] Robert McNamara (when he was head of the World Bank) stated that "the pursuit of growth and financial adjustment without a reasonable concern for equity is ultimately socially destabilizing''(WHO, 2000)

Rawls' (1971 pp 23) theory of justice provides one perspective for assessing what is fair and/or just. According to Rawls (1971):

"in order to achieve impartiality, individuals should be placed behind a 'veil of ignorance' such that they did not know what their own position in society would be. They were then asked which sort of society they will choose to live in. The society that emerges is one which gives the greatest advantage to the least well off in society"

Thus the impartiality here has led to 'maximising' of the 'minimum' position and it is arrived at through the impartiality created by the 'veil of ignorance', the so-called 'maxi-min' solution (Mooney 1994). This theory was criticised by later writers. Taylor (1989), quoted in Mooney (1994, p.68) notes that even though Rawls' theory of the 'veil of ignorance' represented a breakthrough in thinking about a just society which particularly suggests giving priority to the less fortunate in society, the theory is silent on the other groups in society. In the context of health, the theory might suggest that the most severely ill should be given priority but it does not say to what extent they should be given priority and at what cost to the general society. Despite the criticism, the fact remains that in societies where there are daunting inequalities like in the USA and most parts of Africa (Martinez-Vazquez 2004; Odaga 2004; Cissé, Luchinia et al. 2007), there is need to discriminate unequally (but equitably) in favour of the needy in the allocation of health care services.

Libertarians on the other hand emphasize a respect for natural laws based on two of Lockes' natural rights[10] in their theory of justice and fairness (Mooney 1994). To them, everyone is entitled to what they have provided that they acquired it justly (Mooney 1994). This theory epitomizes a capitalist system and may mean that those who have are under no obligation to give to the less fortunate in society. In terms of health, the Libertarians advocate the distribution of health care based on ability to pay with state involvement limited to a minimum package for the vulnerable. The classical market mechanism according to the Libertarians is the just and fair means of distributing resources and opportunities to all. To the libertarians (e.g. Nozick, 1974) taxation is warranted only to maintain minimal state activities.

The Egalitarian perspective emphasizes equal net welfare for all individuals. Indeed, this is the strictest definition of equality and would imply an equal share of opportunities and

[10] The rights to life (i.e. not to be unjustly killed) and possessions

resources to all in a society (McIntyre 1997). Marx added a new angle to this by highlighting the importance of needs in the distribution of resources and opportunities. To him, the need level of the individuals or groups in society should be the yardstick for the distributions of resources and opportunities. In terms of health too, Marxian ideology favours health systems which distribute health care services according to need and are financed according to ability to pay within the common principle of 'from each according to his/her ability and to each according to his/her need'. It should however be noted that this theory of distribution according to need is not exclusive to Marx but is a key component of the twentieth-century Egalitarian ideology

Different people will subscribe to different theories of justice (Rawls, Libertarian, Egalitarian, Marxist, *etc*.) and this will influence how they define equity and equity in health.

3.2. Equity in health

Equity in health has been conceptualized and defined in many ways. For instance, the International Society for Equity in Health (ISEqH), defines equity in health as *"the absence of systematic and potentially remediable differences in one or more aspect of health across population subgroups defined socially, economically, demographically or geographically"* (Starfield 2001; Macinko and Starfield 2002). According to Whitehead (1992) equity in health implies that ideally everyone should have a fair opportunity to attain their full health potential and more pragmatically, that none should be disadvantaged from achieving this potential if it can be avoided. Common to these definitions of equity in health is the idea that certain health differences are unjust and unfair. Thus policy for equity in health is not to eliminate all health differences so that everyone has the same level and quality of health but rather to reduce or eliminate those differences that result from factors that are considered not only unjust and unfair but unnecessary and avoidable (Whitehead 1992).

The fundamental concern about justice and fairness raises the issue of how justice and fairness is to be determined. Whitehead (1992) proposes criteria to assess which health inequalities or differences are unjust and unfair and are deemed inequitable (Whitehead 1992). According to her, health inequalities due to inherent biological variations and freely chosen health damaging behaviour may not be considered inequitable because,

they are either unavoidable or "fair" However, health differences such as those arising from inadequate access to health and social services, exposure to damaging health behaviours not based on informed choices as well as exposure to unhealthy living and working conditions, that are potentially remediable are seen as unfair and thus constitute health inequities (Whitehead 1992; Whitehead, Dahlgren et al. 2001). Clearly, inequities are generally seen as differences in health which are not only unnecessary and avoidable, but are considered unfair and unjust (Whitehead 1992; Liu, Hsiao et al. 1999; Whitehead, Dahlgren et al. 2001; McIntyre and Gilson 2002). The concern of equity of health is thus, the creation of equal opportunities for health and bringing health *differentials* down to the lowest level possible (Whitehead 1992).

Among the various theories, and definitions of distributive justice and fairness that might be brought to bear on equity in health, it is generally agreed that some have a greater applicability and acceptability than others. Many writers have argued for instance, that among the various distributive principles proposed by philosophers in the context of equity, the egalitarian (as opposed to the libertarian) notion that health care ought to be distributed according to need commands the greatest support among policy makers, health professionals and the public at large (Wagstaff, van Doorslaer et al. 1999; Van Doorslaer, Wagstaff et al. 2000; Wagstaff and van Doorslaer 2003). Recent debates on equity of health have also pointed to the fact that, in addition to distributional justice of health care resources, fair procedures in deciding on the distribution is also critical to the success of equity in health outcomes. This is what is commonly known as procedural justice.

From the above discussion, two distinct approaches to equity in health can be identified, horizontal and vertical equity. Horizontal equity requires the like treatment of like individuals and vertical equity requires the unlike treatment of unlike individuals in relation to the differences between them (Whitehead 1992; Culyer 2001). Put differently, those in greater need for instance should receive greater attention and resources. In many health systems including Ghana, equity strategies often focus on achieving horizontal equity in health care delivery (e.g. "equal access to all" proposed in the National health Insurance design). Even though there is some logic in pursuing horizontal equity, recent debates highlight the fact that most developing countries with histories of daunting inequalities could not achieve significant equity in outcome through horizontal equity. In

this respect vertical equity goals in both health delivery and financing are proposed as the way forward for accelerated achievement of equity for countries plagued with wide inequalities like Brazil, South Africa, the USA and to a lesser extent Ghana. Undoubtedly, there are challenges in pursuing this noble goal (vertical equity) and these relate to how to identify the poor or the needy for positive discrimination and also the political will to pursue vertical equity goals.

Mooney (1994) has emphasised the fact that vertical equity should receive more attention as a health policy goal. According to him *"if, as is normally the case, ill health is not randomly distributed across different groups in society, might that society not want to give preference, on vertical equity grounds, for health gains to those groups in that societies which are on average in poor health*" (Mooney 1994). This conforms to what Rawls (1971) pointed out in his 'behind the veil' theory and it implies that it is not enough to treat those groups with the poorest status in the same way as others within the population even though this may be fairer than the status quo (McIntyre and Gilson 2002). In this vein, the very disadvantaged ought to be specifically catered for in health policy formulation so as to even out the historical disadvantage faced by the group through the promotion of equity in access, utilisation and more importantly the financing of health care.

The fundamental question resulting from the discussion of equity and equity in health is "why is equity and equity in health so important?" In other words, why is there the need to pursue equity goals? From a pragmatic point of view equity goals are not only ethical but morally right. A fair and just distribution of resources and opportunities to all could promote political and socio-economic stability in a country. For instance, soaring crime rates in Latin America and Africa in recent years have been attributed to failure to consider the effects of uncontrolled free-market reforms on vulnerable social groups, along with the associated dismantling and privatization of many state institutions (Braveman and Tarimo 2002). According to the WHO (2005), inequities in health negate economic growth and productivity and further worsen poverty (WHO/HTM/TDR 2004). For example, malnutrition and poor health decrease worker productivity (ibid). Another pragmatic argument for equity in health that may only appeal to the self-interest of the privileged groups is to avoid spillover effects of poor health among the disadvantaged. Given contemporary population density and mobility, neglect of infectious disease

control, jeopardizes the health of the more affluent as well as that of the poor who provide services for them in their homes, shops and restaurants (Braveman and Tarimo 2002). Thus, equity in health care requires a humane and equitable health care financing mechanism that will provide adequate access to quality health care for all the population especially the poor.

3.3 Equity in health care financing

Policy statements on equity in health care financing generally agree on the fact that health care payment should be related to the ability to pay rather than the need for care or use of medical facilities (Wagstaff, van Doorslaer et al. 1999; Rannan-Eliya, Pande et al. 2001; Abu-Zaineh, Matari et al. 2008). This can be interpreted in terms of vertical equity such that individuals or households of unequal ability to pay make appropriately dissimilar payments for health care, and in terms of horizontal equity that individuals or families with the same ability to pay should make the same payment.

In examining the problem of vertical equity (which is the main focus of the current study), consideration has to be given to the precise form that the differential treatment of unequals should take. Should those with the greater ability to pay be paying more as a proportion of their income? In other words, should the relationship between ability to pay[11] and payments for health care be progressive? Or should they merely be paying more in absolute terms? In other words, can the relationship between ability to pay and payments be proportional or even regressive (Wagstaff and van Doorslaer 2003; O'Donnell, van Doorslaer et al. 2008)? If the relationship is to be regressive, how regressive should it be? What are the factors influencing the incidence of health care financing? Answers to these questions, are relevant for improving equity goals in health care financing. The study attempts to evaluate the degree of progressivity as well as factors influencing the progressivity of existing health care financing mechanisms and to consider future policy for these options. As mentioned in chapter one this study takes the position of vertical equity (i.e. advocating for a progressive financing regime) in health care financing and this is from the background of the fact that there is already existing entrenched inequity in health care financing and service access in the country and so this

[11] Traditionally, income and/or consumption expenditure estimates, sometimes adjusted for size and age structure using an appropriate equivalence scale is often used to measure ATP but in data poor economies like Ghana, these methods would be supplemented by measures of socio-economic status (SES) using composite asset indices (McIntyre et al. 2002). A detailed discussion of the ability to pay measurement is presented in the methodology section.

is the most appropriate means of effectively and speedily achieving equity gains as it recognizes that different people have different starting points and so must be treated differently (Mooney 1996; McIntyre, Muirhead et al. 2002; Mills 2007).

One generally accepted way of examining equity in health care financing is to look at the relative progressivity of the health care financing mechanisms (general tax, social health insurance, private insurance, out-of-pocket and community based health insurance) individually and collectively. Most studies on equity in health care financing or progressivity of health care financing to date have focused on the first four health care financing strategies (O'Donnell, van Doorslaer et al. 2008; Yu, Whynes et al. 2008; Yates 2009) and this is so because most studies on equity in health care financing have been carried out in the high and middle income countries whose health systems are financed by a mixture of two or more of the four methods (general tax, social health insurance, private health insurance and out-of-pocket payment).

The current study is unique in three ways. First, it will be the first time a comprehensive study on equity in health care financing is being undertaken in Anglophone SSA and particularly in Ghana[12]. Secondly, the study will critically and comprehensively evaluate the factors influencing the relative progressivity of health care financing which is not often investigated in equity in health care financing studies but which is fundamental to tackling the problems of inequities in health care financing. Finally, the study would examine in addition to the first four financing methods, community-based health insurance which is a growing health care financing strategy in SSA.

3.3.1 Measurement of equity of health care financing

There are a number of ways of measuring the incidence of health care financing. One method is based on the tabulations of total contributions to health care financing relative to income across socio-economic groups (Hurst 1992). The method produces useful static data that can indicate whether a financing strategy is progressive, regressive or proportional. This method could be complemented by the progressivity index method.

[12] Similar comprehensive analysis is also being undertaken in South Africa and Tanzania

The most widely tested progressivity indices that was employed in this study include the concentration and Kakwani indices. The concentration index (C) is an index of distribution of payments (Wagstaff, van Doorslaer et al. 1999). It is restricted to a range of (-1 to 1). A negative value indicates that the poor contribute a larger proportional share than the rich (i.e. regressive) and positive value indicates the rich contribute a larger proportional share than the poor (i.e. progressive). A value of zero indicates the same proportional payment for both the rich and the poor (O'Donnell, van Doorslaer et al. 2008). The Kakwani index (see details in the methodology section) of progressivity is based on the extent to which a tax system or any of the financing mechanism departs from proportionality. It is defined as twice the area between a payment concentration curve and a Lorenz curve. A negative number implies regressivity, i.e. the poor make higher health care payment as a proportion of their income than the rich and a positive number indicate progressivity, i.e. the vice versa (Kakwani 1977). A zero Kakwani index implies proportionality, i.e. equal health care payments as a proportion of incomes between the rich and poor (Kakwani 1977).

The two methods were employed to draw inference on the burden or incidence of health care financing in Ghana. An advantage of using the Kakwani index is that it controls for the distribution of income or consumption expenditure, which is a key variable when it comes to defining how regressive or progressive a financing mechanism is.

Ability to pay or socio-economic status (see details in the methodology section) will be measured using consumption, expenditure or income and this will be complemented by asset index measurement. This is so because direct incomes are difficult to collect in data poor and largely informal labour economies like Ghana. Also the consumption or expenditure methods have been widely used in similar studies (Wagstaff, van Doorslaer et al. 1999; Younger, Sahn et al. 1999; Cissé, Luchinia et al. 2007; O'Donnell, van Doorslaer et al. 2008; Yu, Whynes et al. 2008).

3.4 Health care financing mechanisms

Before attempting to measure the health care financing burden, it is important to briefly evaluate each of the health care financing strategies from an equity perspective, drawing on international experience and related literature.

3.4.1 General tax revenue and equity

Paying for services through government revenue is made possible through general tax. It is the oldest and most popular method of mobilising revenue for financing various sectors of a country including the health sector. It is particularly important in the funding of preventive, environmental and other health services which have public good characteristics (McIntyre 1997). General tax is broadly made up of direct and indirect tax.

Direct taxes are taxes levied on income earnings (personal income tax-PIT and company income tax -CIT) and wealth (property tax-PT). Direct tax such as PIT tends to be progressive. However, the degree of progressivity can vary significantly between countries depending on the nature of the structure and rates of the tax. Direct tax progressivity also depends on the proportion of the population falling within each taxable income stratum (Wagstaff, van Doorslaer et al. 1999). For instance in low income countries such as Bangladesh and Sri Lanka the poorest[13] 20% of households make virtually no contribution to direct taxes but the richest fifth contribute more than 90% of the direct tax revenue (O'Donnell, van Doorslaer et al. 2008). This makes the direct tax of these countries more progressive than China where direct tax paid by the poorest fifth of households is significant due to an agricultural tax which is concentrated on the poor that outweighs the effect of PIT paid mainly by the rich (O'Donnell, van Doorslaer et al. 2008). It has been revealed that poor countries (Nepal, Bangladesh and Kyrgyz), with a narrow tax base make less use of direct tax compared to richer countries such as Hong Kong, Taiwan and South Korea (EQUITAP 2005).

Indirect taxes[14] on the other hand are taxes levied on consumption goods. Indirect taxes[15] tend to be regressive particularly taxes such as sales, value added taxes (VAT), excise[16], and import taxes. For example, the study by Wagstaff and others (1999) of certain high-income countries finds that indirect taxes are regressive (the burden of the taxes is

[13] Probably due to the fact that they do not earn income and have no property

[14] Some of these taxes include general sales tax (GST), value added tax (VAT), custom and excise, import duty, etc.

[15] They could also have mixed redistributional impact depending on the tax base, rates, exemptions, and exclusions

[16] The distributional impact of excise taxes depends strongly on the consumption patterns by income group. For example, one study in Madagascar found that car and petrol taxes were strongly progressive, alcohol taxes appear quite progressive in most cases, and even tobacco taxes were reasonably progressive due the price elasticity facing these goods (Gottret and Schieber 2006). However, tobacco taxes in other country settings have been found to be regressive, because the poor spend larger shares of their more limited household incomes on tobacco than the rich (*ibid*)

concentrated on low-income groups) in all countries in the sample. This is consistent with the notion that indirect taxes are mostly taxes on consumption, and because low-income groups spend more of their income on consumption than high-income groups, their tax payments are also proportionally higher (Gottret and Scheiber 2006). In an earlier comparative study of European countries, only Portugal and Spain were found to have a progressive indirect tax. The main reason is that these two countries have relatively high tax rates on luxury goods, which are mostly consumed by the privileged. However, in a recent comparative study of Asian countries, all the countries except Japan have progressive indirect taxes reflected by positive Kakwani indices (EQUITAP 2005). In eight of the countries however, the Kakwani indices are very close to zero indicating proportionality. The reason for the significant progressivity of indirect taxes in some of these countries is due to exemption of food from tax and the propensity of poor households to consume products sold in small local markets that are not subject to indirect tax.

Putting the direct and indirect taxes together, general tax tends to be a progressive financing source (McIntyre 1997). However, the degree of progressivity of general tax depends to a large extent on the progressivity of its component parts (direct and indirect taxes) and their relative share of total tax revenue. If direct tax, which is often typically progressive, forms a large component of overall tax, then general tax can be progressive. On the other hand if indirect tax, which tends to be regressive, is given stronger emphasis in the overall tax system then the tax burden can be regressive (Wagstaff, van Doorslaer et al. 1999; Cissé, Luchinia et al. 2007; O'Donnell, van Doorslaer et al. 2008)

Given the fact that general tax usually tends to be a progressive source of health care financing, especially in high income economies, many believe that general tax as a health care financing mechanism, could be a source through which universal access to health care could be achieved. The poor could be protected from financial shocks associated with large health care costs through general tax financing. Since health services fully funded from tax do not involve payment at the point of access, financial accessibility of health care services could be high (Bennett and Gilson 2000). If general tax financing is to improve equity in access, there would be a need for commitment to channeling more resources from general tax to the areas that are in high need. However in middle and low

income countries with a limited tax base, it is difficult to increase resources from this source (Hay 2003).

In many of these countries, a high percentage of the population is in the informal sector (e.g., more than 60% of Ghanaians are in the informal labour market) and so direct taxation through payroll deduction is quite limited. It is also not advisable to increase direct taxes as this would overburden workers who already have many deductions on their pay cheques and could even create a disincentive to work. Neither is it appropriate to increase indirect taxes, especially on goods consumed by the poor as this would worsen their plight and may even push them into severe poverty with long term effects on growth and productivity (Normand 1999; McIntyre, Gilson et al. 2005; Obermann, Jowett et al. 2006)

One way of increasing tax revenue is to improve tax compliance. It is well known that many people in Africa evade tax and even tax officials connive with people to evade taxes and so there is a lot of leakage in revenue mobilisation through tax (Younger 1996). Strengthening the tax system would result in increased revenue which if channeled to the health sector could greatly improve access in health care. There is a recognition that improvement in the 'fiscal space' by expanding or increasing government revenue could result in more resources also coming to the health sector (Younger 1996; Hay 2003). This is a challenge to many developing countries including Ghana.

Another problem in relying on tax revenue as a health care financing strategy is the large debt burden on developing countries particularly in Africa. African countries received some $540 billion in loans between 1970 to 2002 and despite paying back close to $550 billion in principal and interest, the continent stills owes over $200 billion and this is the biggest obstacle to its development. Most of this debt is illegimate, having been incurred by despotic and unrepresentative regimes. What is disturbing is that African governments spend almost $14 billion annually on debt services. Other words, many African countries use up to 20% or more of annual government budget to service debt instead of channeling this to important areas like the health sector. For instance Ethiopia's total debt is slightly more than 100% of its GDP and the recent Heavily Indebted Poor Countries (HIPC) initiative provided Ethiopia with only $50million which is less than 1% of her GDP (McIntyre, Gilson et al. 2005). The debt burden means that many African countries in a

similar debt situation to Ethiopia may not be able to even maintain current funding to the health sector. Perhaps the recent debt relief initiative by the G8 to cancel 100% of debts to the IMF, World Bank (IDA) and African Development Bank, may be promising but this has not been far reaching enough and even the condition of spreading the debt to 40 years does not bring the needed relief to poor countries (McIntyre, Gilson et al. 2005; Institute of Statistical Social and Economic Research 2008).

Yet again the problem of wars and conflict especially in African countries such as Sierra Leone, Liberia, Rwanda, Somalia, Sudan, Angola, Ethiopia, the Democratic Republic of Congo, Eritrea and Côte D'Ivoire diverts huge amounts of government resources to the acquisition of ammunitions and thereby denying the health sector needed resources from general tax revenue (Commission on Macroeconomics and Health 2002). Some developing countries that are not even in conflict situations (that is not to say those in conflict situations should spend more on defence than on health) devote more than twice the amount of tax revenue to defence as they do to the health sector (McIntyre, Gilson et al. 2005)

Given these pressures on general tax revenue especially in Africa and given the fact that many African countries are yet to even obtain the Abuja target[17] of allocating 15% of government revenue to the health sector, the prospects of increasing health sector funding from general tax revenue is limited. It is in this vein that alternative health care financing mechanisms such as mandatory health insurance and other pre-payment schemes are being considered in many parts of Africa.

3.4.2 Social health Insurance and equity

As stated earlier, the term Social Health Insurance (SHI) is often used interchangeably with National Health Insurance (NHI). Indeed, both terms refer to health insurance that has a legal requirement for people to become members and benefit from a package of health services. Some distinguish between the terms SHI as being legally compulsory for a particular group of people (e.g., formal sector workers), while NHI is legally universal

[17] A meeting of Heads of State and Government of the Organisation of African Unity (OAU) in Abuja, Nigeria from 26-27 April 2001, at a Special Summit devoted specifically to address the exceptional challenges of HIV/AIDS, Tuberculosis and Other Related Infectious Diseases at the invitation of H.E. President Olusegun Obasanjo of the Federal Republic of Nigeria. In this extraordinary meeting, the Heads of State and Government pledged among other things to allocate at least 15% of annual government budget to the improvement of the health sector.

and covers all the people (e.g., formal and informal sectors) and government subsidizes contributions especially for the indigent (McIntyre, Gilson et al. 2005). The common characteristic of SHI and NHI is that they are mandatory health insurance schemes and are based on risk-sharing and a spirit of solidarity. A key principle of SHI and NHI is that there should be separation and definition of the roles or functions of the purchaser, provider and regulator. Clear separations and definitions the roles are key for an effective and efficient SHI and NHI that could progress towards universal coverage. Ghana seeks to combine SHI and CBHI to form the NHI. In this section, I will mainly use the term SHI, irrespective of population coverage by the scheme.

The history of SHI dates back to the medieval period (1300s) where small groups of workers created mutual assistance associations under the auspices of their craft guild (Carrin and James 2004). However, modern SHI is generally believed to have started in 1883 in Germany (Van Doorslaer, Wagstaff et al. 2000; Bärnighausen and Sauerborn 2002; McIntyre, Doherty et al. 2003; World Health Organization 2005). It was in 1883 that Bismarck (the then Chancellor of Germany) legislated and made SHI compulsory for workers earning less than specified amounts (Bärnighausen and Sauerborn 2002). Other European countries (e.g., the Netherlands, Denmark, Switzerland, Italy, Portugal, *etc*) took Germany's lead. Latin American countries (Columbia, Argentina, Chile etc) also have extensive experience in SHI. SHI has long been in place in many Asian countries too (Indonesia, Malaysia, Philippines, Thailand, Taiwan, Singapore, Korea, Japan etc). The Middle East as well as North Africa also has some level of SHI. In North America, Canada has experience in SHI. Australia is also a country with a wealth of experience in SHI.

It is evident from the literature that SHI has been in the world for well over a century but it is quite a new phenomenon in SSA. Even though there are a number of social security schemes in Africa particularly West Africa, SHI is quite limited in SSA (McIntyre, Doherty et al. 2003). South Africa has been 'struggling' for the past two decades to introduce SHI but not much has been achieved to date *(ibid)*. Zimbabwe has also considered introducing SHI in its health care system. Indeed, Kenya was the first country in SSA to introduce some compulsory health insurance in the form of SHI and this was followed by Tanzania. Ghana is the latest African country to introduce a compulsory health insurance to the formal sector and is extending this to the informal sector

(McIntyre, Gilson et al. 2005). Nigeria, Togo and Côte D'Ivoire are also at various planning stages of introducing SHI. Even though SHI is quite new in SSA, it is spreading fast and with the support of the WHO, World Bank and other international organisations, SHI and other forms of health insurance could be replacing user fees in many countries.

There are varied reasons for the interest in SHI as an alternative health care financing strategy. The major motivation for the introduction of SHI in many developed and developing countries is to generate additional revenue to augment the shortfall in tax based funding in health care (Ensor 1995; Bennett, Creese et al. 1998; Kutzin 1998; Normand 1999; Bärnighausen and Sauerborn 2002; McIntyre, Doherty et al. 2003; Schneider 2005; World Health Organization 2005). In Germany for instance, generation of "new money" was a major reason for SHI as well as in Latin American countries.

Another motivation for SHI is the fact that the flow of funds to the health sector is visible. In this way, people are more willing to contribute because they see a clear link between contribution and the benefits they receive. This is different from general tax revenue where the health sector's share of resources is subject to political decisions. For instance in Germany, the SHI contributions are clearly linked to the benefit package (Bärnighausen and Sauerborn 2002). There is visibility of the funds.

Patients' rights as consumers of health services are also greatly enhanced under SHI compared with tax financing. This is because, with tax financing, health care is often viewed as being offered free to the point that providers sometimes feel they are doing patients a favour (Obermann, Jowett et al. 2006). With SHI, especially if there is active purchasing of health care services, providers tend to respect patients as customers.

Other objectives of introducing SHI in both developed and developing countries could be to promote equity and sustain the financing of health services. SHI can promote equity if contributions are progressive or even proportional such that people pay contributions according to their levels of income. Sliding scale payment instead of a flat rate would ensure that the rich and healthy contribute to the health care of the poor and sick. Another way of promoting equity under SHI is the subsidization of the contributions of the poor. This would also ensure that the vulnerable who cannot afford health care are covered.

The use of risk-equalization[18] in the case of multiple schemes would also enhance equity under SHI. The promotion of equity is particularly important in developing countries and countries with vast income inequalities and this often shapes the framework of SHI. Equity in SHI is critical if SHI is to result in universal coverage as in Germany, Japan, Israel, Denmark, Costa Rica and many other countries (Carrin and James 2004).

SHI can be a progressive[19] and equitable health care financing mechanism, at least in the countries that rely heavily on this funding mechanism (Atim 1998; Bennett, Creese et al. 1998; Bärnighausen and Sauerborn 2002). Under SHI, health care services are paid for through contributions to a health fund. The most common basis of contributions is the payroll with contributions from the employer and the employee (Bärnighausen and Sauerborn 2002). However, the absence or presence of a cap on maximum contributions and structure of contributions (i.e., flat or proportional rate) influence to some extent the degree of progressivity of SHI in a country (McIntyre 1997; Gottret and Scheiber 2006). Usually and in most countries, the contribution is based on ability to pay and access to services is based on need which makes it a more progressive health care financing mechanism than out-of pocket and private health insurance. For instance, Italy and Portugal have progressive SHIs and this is because SHI contributions are proportional to incomes, besides, pensioners are also exempted from SHI contributions (Wagstaff, van Doorslaer et al. 1999). However, SHI is regressive in France, the Netherlands and Spain because contributions did not relate to earnings and their pensioners are not exempted. In Asia, SHI is progressive in the countries because contributions do not relate to earnings and more importantly the State subsidizes contributions for the poor. SHI is regressive in Japan because of lack of subsidy for the poor (O'Donnell, van Doorslaer et al. 2008). The presence or lack of subsidy is therefore an important factor influencing the incidence of SHI, particularly in low and middle income countries.

SHI in many developing countries is yet to achieve universal coverage in the sense of covering the whole population by the insurance. Many developed countries have taken

[18] In Ghana where there are multiple schemes, it is expected that risk-equalisation will result from poor schemes receiving higher financial support than the rich schemes.

[19] The relative progressivity or equity dimension depends to some extent on the key design elements or features and these include, sources of funding, pooling of funds (coverage, contribution and allocation mechanisms), type of organisation responsible for fund pooling, and the type of benefit package and level of OOP (see conceptual framework). It is important to recognise that, other factors such as powerful actors or stakeholders, extent of government subsidy, adverse selection and cream skimming influences the equity dimension of SHI.

many years to achieve universal coverage. Germany is reported to have taken over a century to reach universal coverage (Bärnighausen and Sauerborn 2002). Austria took 77 years to cover 96% of the population under the SHI. It took Belgium 118 years to obtain universal coverage (Carrin and James 2004). Israel and Luxemburg took 84 and 72 years respectively to reach universal coverage and even though Costa Rica and Japan took a relatively shorter time (20 and 36 years respectively), they were induced and powered by special efforts (enhanced economic growth and regulations) (*ibid*). Universal coverage in Russai will require new and targeted policies (Balabanova, Falkingham et al. 2003). The few SSA countries trying out SHI are yet to cover 30% to 40% of the total population. Undoubtedly extending coverage of SHI is a gradual process and it is taking certain countries some time to move from the planning to implementation stage (Hajizadeh and Connelly 2009). As said earlier, countries like South Africa, Zimbabwe, Nigeria, Togo, and Côte D'Ivoire are still grappling with moving to implementation; even those who have implemented SHI for sometime now (e.g., Kenya, Tanzania and Ghana) are grappling with the issue of extending coverage to the informal sector. Ghana is currently extending SHI to the informal sector through a network of district mutual health insurance schemes throughout the country.

The length of time it takes for a country to reach universal coverage could be shortened by improving on the benefit package, enacting legislation and getting the opposition onboard. The benefit package must be comprehensive, affordable and attractive. This is a critical factor to attract people from the informal sector to join SHI. There must also be the political will and this must be done through enacting the appropriate laws through parliament as done in Germany, the Philippines, Denmark, Costa Rica, Sweden, Thailand and many other countries (Carrin and James 2004). Ghana's NHI has been legislated through parliament. Equally important is the presence of societal and political values in the country (Balabanova and McKee 2004). The values of self help and mutual support already existing in a country are good grounds for the success of SHI and should be tapped to ensure the success of SHI growing to universal coverage. A study on reforming health care financing in Bulgaria revealed that values such as equity and transparency are important for a successful implementation of SHI (Balabanova and McKee 2004). All stakeholders and particularly in the African setting, the opposition political parties, must be brought onboard if SHI is to succeed in reaching universal coverage.

There are many other conditions for a successful SHI. Drawing on Normand and Weber (1994) and Grottret and Schieber (2006), Box 3.1 provides a summary of the pre-conditions for the successful development of SHI into a universal coverage

Box 3. 1: Pre-conditions for successful development of SHI

- ♦ Level of income and economic growth (Hay 2003) is key to the success of SHI as happened in some high income countries like Japan and Taiwan
- ♦ Dominance of the formal sector verses informal sector because SHI operates easily with formal sector since it is easier to collect payment from this sector than the informal sector
- ♦ Population distribution in favour of urban areas (or densely populated areas) is key to a successful SHI than scattered rural population
- ♦ Countries that can tolerate increased payroll deductions without negative effects on employment and growth are well placed to succeed in SHI
- ♦ Strong administrative capacity to implement SHI without *excess* administrative cost in a transparent and well govern fashion is critical for the population support
- ♦ Quality health care infrastructure to support SHI will prevent opting out by the wealthy and healthy and thus eroding cross-subsidization
- ♦ Stakeholder consensus in favour of SHI is vital for high level support
- ♦ Political stability is critical in all areas of development including SHI
- ♦ A system where there already exists the spirit of solidarity is important to a successful SHI
- ♦ Ability to extend the system to the informal sector and fully subsidizing the contribution of the poor is critical if SHI is to provide universal cover

Source: Carrin and James 2004; Hay 2003

3.4.3 Donor funding

Donor funds as a health care financing mechanism is unique to developing countries and more so in SSA. It contributes significantly to national and health budgets in many African countries.

A potential problem of donor funding is that if the funds are provided in the form of general budget support (GBS) and not directly to the health care budget as in the sector wide approach (SWAp), it is possible that the health sector may not get a fair share of the funds. Though it is generally recognised that donor funds are important to improving or providing services to the poor and thereby promoting equity, the question that comes to mind is the reliability and sustainability of this financing mechanism (McIntyre, Gilson et al. 2005). Some donors do not fulfill their pledges and when this happens, national health plans could be destabilised if this is a major component of the budget. Most African countries are vulnerable to this. Even though donor funding could be an equitable financing strategy, there is a call for countries that rely so much on donor funding to rethink and find more sustainable domestic health care financing mechanisms, at least in the longer term (DFID Health Systems Resource Centre 2002; McIntyre, Gilson et al.

2005). Nonetheless, donor funding will remain a significant source of health care financing especially in Africa.

3.4.4 Private Health Insurance and equity

This is a voluntary pre-payment system where people pay an individual premium, usually risk-related and which is also related to the cost of providing the services (McIntyre, Gilson et al. 2005; Obermann, Jowett et al. 2006; Pauly, Zweifel et al. 2006). This means people in high risk groups (who are most often in the low income bracket) pay more than those in low risk groups. This makes PHI[20] one of most regressive health care financing mechanisms (DFID Health Systems Resource Centre 2002; Carrin and James 2004). For instance in USA and Switzerland where the majority of people rely on it for cover, PHI is regressive because contributions are based on a flat rate or are risk rated and lower income groups tend to have a greater risk of ill-health (Wagstaff 2008). However, PHI can be progressive if it is taken up as a supplementary cover to that provided on a universal basis by the State (e.g., Italy, Portugal and the UK) and in which case, only those in higher income buy the cover (DFID Health Systems Resource Centre 2002; Carrin and James 2004). PHI, just like OOP is progressive in many Asia countries because it is the preserve of the rich; the poor cannot buy the cover (EQUITAP 2005).

It is argued that private health insurance (PHI) can protect individuals from catastrophic health expenditure and that it should be encouraged. Also, proponents of PHI believe that this financing mechanism could help free up government resources that hitherto would have been consumed by those in the PHI (DFID Health Systems Resource Centre 2002; World Bank 2004). The "freed resources" could then be directed to providing primary health care (PHC) or improving on the services used by the majority poor and in this way equity could be enhanced.

The argument in favour of PHI not withstanding, PHI is generally confined to a relatively elite group. There is insufficient ability to pay for PHI in most low and middle income countries. Except in South Africa, Namibia and Zimbabwe, PHI is quite limited in SSA. A few PHI schemes exist in Ghana, Tanzania, Kenya and other African countries, but generally cover less than 1% of the population. In South Africa, with gross disparities between income groups, higher income groups have long depended upon PHI (McIntyre

[20] Funds are often controlled and managed by for-profit companies

and Gilson 2002). In all these places and beyond, the experience of PHI is that, their coverage, access, risk pooling, cross subsidisation and financial risk protection are often very limited. Typically, PHI is a good available only to the rich in poor countries, the healthy and those that live in urban areas and so its expansion could be difficult in SSA.

Tax exemption of PHI to encourage more people to join, often advocated by the proponents of PHI, could lead to a kind of government subsidy to the better off people in PHI. It is evident that PHI covering groups which are more affluent usually captures significant government subsidies even if government does not explicitly subsidise PHI (DFID Health Systems Resource Centre 2002).

The argument of freeing more resources for the poor through PHI depends critically on whether any freed resources are actually used to support the health care of the poor as well as regulation governing PHI and how it interacts with the rest of the health care system, particularly if PHI exists in parallel to SHI. It is also important to consider whether or not those purchasing PHI are allowed to opt-out of the primary financing mechanism or whether they must continue to contribute to the SHI where this exists (Ensor 2001; Commission on Macroeconomics and Health 2002; Carrin and James 2004). If they are allowed to opt-out, then there would be the tendency to cream skim as usually those who join the PHI are the healthy and wealthy people leaving only the less healthy and poor people to the SHI, which would worsen the existing equity problems.

3.4.5 Community based health insurance (CBHI) and equity

According to Dror and Preker (2002), Community Based Financing (CBF) evolved as a generic expression used to cover a large variety of health care financing arrangements[21]. CBHI (which is a form of CBF) is a scheme formed usually by a community, mission facility, or a donor with the aim of providing risk pooling to cover part or all of the cost of health services of its members (Bennett 2004; McIntyre, Gilson et al. 2005). Many of these are usually based in the rural areas, where there is limited financial risk protection (Baltussen and Bruce 2006). A unique feature of CBHI is the substantial element of community participation in the overall management of these schemes even if a scheme is

[21]Different authors use the term in different ways: community based health insurance, micro financing arrangement, community health fund, mutual health insurance, mutual health organization, rural health insurance, revolving drug funds and community involvement in user fee arrangements.

established by a mission or a donor (e.g. the Nkoranza scheme in Ghana was establishment by the mission hospital in the area but there is a high level of community participation in decision making) (Baltussen and Bruce 2006; Witter, Arhinful et al. 2007). Unlike PHI, the premiums of CBHI are usually based on community rating (Criel, Atim et al. 2004). This means, community risk sharing, such that community members pay premiums according to the average risk of the community. Premium contributions are also often made on an annual basis and usually coincide with the time of harvest of crops when community members would have a better ability to pay. Unlike SHI, CBHI provides cover for the informal sector of the population and so they provide a mechanism for insured members to access services without having to pay at the point of access, which means CBHI emerges as an alternative to user fees (Bennett, Creese et al. 1998; Musau 1999; Criel, Atim et al. 2004; Ekman 2004). Another feature of CBHI is the voluntary nature of the schemes and the spirit of self-help and social mobilization embraced by the poor in many developing countries where these schemes exist.

CBHI are unique financial arrangements in developing countries particularly in SSA. There are a number of CBHIs in Asia and Latin America[22]. In SSA, the old CBHIs are mostly found in West and Central Africa. Some of the oldest schemes include Babouantou of Cameroon, CAM of Burundi, Bwamanda of the DR Congo, Nkoranza of Ghana and Boboye of Niger among several others. The growth of these schemes in East and Southern Africa is a relatively new phenomenon. Probably due to the negative impact of user fees (mentioned in chapter one), there seems to be international support (e.g. by the World Bank, WHO, the Commission for Macroeconomics and Health and USAID) for the establishment of CBHIs as a panacea to rural health care financing problems (Odaga 2004; WHO/HTM/TDR 2004; World Bank 2004). For instance, the World Bank provided financial and technical support for the establishment of the Tanzania community health fund which is aimed, among other things, at providing financial protection to the poor. USAID also supported the establishment of the Nkoranza scheme in Ghana (Atim 1998; Atim, Grey et al. 2001).

The literature cites various advantages of CBHI and that may explain the recent interest in CBHIs by community members, missionaries, donor and even international organizations like the World Bank. CBHI often evolves in a context where there is high

[22] For example RAHA of India, BAO of Vietnam and SWHI of Thailand etc

user fee financing of health care. By spreading contributions between the healthy and the sick, the wealthy and less wealthy, the young and the old and allowing people to spread their contributions over time in a more predictable way rather than pay at the point of access, CBHI is able to mitigate the worst equity effects of user fees (Atim 1998; Atim 1999; Bennett and Gilson 2000; Arhin-Tenkorang 2001; Commission on Macroeconomics and Health 2002; Dong, Kouyate et al. 2003; Bennett 2004; Criel, Atim et al. 2004). Thus CBHI provides some level of financial protection to insured members and so improves on the accessibility of health services to those who need it (Arhin-Tenkorang 2001; Preker, Carrin et al. 2001; Dong, Kouyate et al. 2003; Balabanova and McKee 2004; Poletti, Balabanova et al. 2007). If schemes (e.g. Nkoranza in Ghana and UMASIDA in Tanzania) cover inpatient services in the benefit package, they would protect the poor against catastrophic health care costs that could push them into impoverishment and so CBHI could contribute a great deal to poverty reduction (Preker and Carrin 2004; WHO/HTM/TDR 2004). According to Jakab and Krishnan (2004), the poor ought to join a CBHI so as to take advantage of the financial risk protection and cross-subsidization that CBHI offers. If CBHI has a sliding scale of premiums, contributions will reflect ability to pay.

Another significant motivation for CBHI cited in the literature is that a significant reduction in the burden of public health resources could be realized through CBHIs as those covered by CBHIs will not rely solely on public health resources (Commission on Macroeconomics and Health 2002). These resources could then be directed to the very vulnerable and indigent in society (WHO/HTM/TDR 2004). Given these potential advantages, it is not surprising that the World Bank, the WHO and others are vehemently pushing for the establishment of CBHIs.

The advantages of CBHIs notwithstanding, there is evidence that they generate very limited resources as premium payments are usually small and so without donor or international support, many CBHIs cannot survive on their own contributions (Atim 1998; Atim, Grey et al. 2001; Bennett 2004; Criel, Atim et al. 2004). There is also evidence that geographical inequities exist in CBHIs where members who are near to the health facilities utilise more services than those living in remote areas. The flat rate as opposed to sliding scale premiums often associated with CBHIs does not position them to target the poor well enough. Another related concern is the fragmentation and low

population coverage of CBHI, such that risk pooling, financial risk protection and cross subsidisation is limited (Arhin-Tenkorang 2001; Atim, Grey et al. 2001; Aikins 2003; Ekman 2004). Ghana for instance, is known to have up to 159 CBHIs in 2002 but with a total membership of only a little over 220,000 (Atim, Grey et al. 2001; Ministerial Task Team 2002). In such a situation, government may need to provide a regulatory framework and to play a redistributive role between the different schemes. This is critical in ensuring that the schemes are able to serve the poorer households.

Another concern about CBHI is also the fact that the very poor are usually not covered (Arhin-Tenkorang 2000; Arhin-Tenkorang 2001; Ekman 2004; Preker and Carrin 2004). The very poor who cannot afford to pay the premiums are not covered by CBHI and this is a source of concern, and even though some schemes try to provide exemptions to the very poor and indigent, these exemptions are often not only difficult to implement but constrained by limited resources available to the schemes themselves.

To date there is no evidence as to how CBHI is linked to the other components of the health system (McIntyre, Gilson et al. 2005). In other words, how does CBHI fit in the overall health care financing mechanism? Ghana is currently and uniquely trying to integrate CBHI into its national health insurance.

So far studies on CBHI have mainly centered on factors affecting enrolments and how best to address these factors (affordability, timing, quality, active purchasing, adverse selection, government support and social factors among others) (Ensor 2001; Ekman 2004). The equity aspects of CBHI[23] as a financing mechanism have not been explored in depth. Information on the overall progressivity of CBHI is important for policy direction on its expansion and how best it can achieve equity goals.

Despite the concerns of CBHI and the need for more equity work on CBHI before considering its expansion, there is no doubt that CBHI remains a significant financing mechanism in SSA and in Ghana. In addition, CBHI can play a role in reaching universal coverage within the context of mandatory health insurance.

[23] Including factors (contribution rates and structure, pooling, subsidisation, exemptions and benefit package, *etc*.) influencing its incidence

3.4.6 Out-of-pocket (user fees) payments and equity

In an OOP payment system of health care financing, patients pay directly at the point of accessing health care either to a public or private health provider. The experience of out-of-pocket (OOP) payment in Europe (e.g., Germany, the Netherlands, France, Belgium, *etc*) includes deductibles, residual payments and co-payments by those covered by health insurance (WHO/HTM/TDR 2004). OOP is also quite a significant health care financing mechanism in the USA and parts of Latin America and Asia (WHO/HTM/TDR 2004).

In Africa, a common form of OOP payment is user fees which are payments at public sector facilities. Other OOP payments are those made to private providers such as the occasional purchase of medicine from informal drug sellers and traditional healers (McIntyre, Gilson et al. 2005). SSA experience of user fees began in the early 1980s, when due to severe macroeconomic difficulties (high indebtedness, negative growth, lack of resources, and financial burden on service use), international organizations (especially the World Bank and IMF) prescribed through conditions of their loans, various economic and health reforms (Structural Adjustment Programme-SAP) including user fees to most countries as a way forward (Akin, Birdsall et al. 1987; Jimenez 1987; Creese 1991; Adams, Darko et al. 2002). Ghana was the first country in SSA to implement in totality the Breton Woods structural reforms (Creese 1991). Ghana introduced comprehensive user fees in all sectors including public health facilities. Other countries (e.g., Kenya, Tanzania, Uganda, Nigeria, *etc*) also introduced user fees in public health facilities (Creese 1991).

The major motivation or objective of introducing user fees was to generate revenue for the health sector. Another objective was to improve the quality of care in the health care system through improving drug availability and facility improvement from the revenue generated through the fees (Creese 1991). It was also thought that through user fees, community involvement in the running of health facilities could be enhanced.

Proponents of user fees argue that introducing user fees in a tax financed system can promote equity. Tax financing, it is argued is skewed towards subsidising hospital services and so introducing user fees in selected hospitals or urban areas could redirect the public subsidy to the rural poor (de Ferranti 1985; DFID Health Systems Resource Centre 2002). It has been further argued that user fees would prevent 'frivolous' health

services utilization (Akin, Birdsall et al. 1987; Stanton and Clemens 1989). In other words, health care resources would be appropriately used. Also, providers would be more responsive to patients under a user fees regime and will tend to provide quality health care to them. These arguments appearing sound on paper, have failed to materialize in almost all countries in which user fees were implemented.

It is not easy to design and implement discriminated user fees that can protect the poor. Household incomes are generally low especially in SSA and this does not make it possible to generate the needed resources to improve on the quality of primary health care services. Households are already making substantial contributions through transport costs *etc* and so user fees place an additional burden especially on the poor. The issue of 'frivolous' use is unlikely to apply in most SSA countries because utilization of health services is already extremely low (Russell 2004; Gilson and McIntyre 2005; Chuma, Musimbi et al. 2009). It is argued overwhelmingly that user fees undermine obtaining universal coverage of basic health services (Arhin-Tenkorang 2000; Gilson and McIntyre 2005; Yates 2009).

Evidence shows that, there has been a decrease in utilisation of health care services wherever user fees were implemented (Arhin-Tenkorang 2000). For instance, the reduction in utilization was a third in Zambia, 50% percent in Kenya and as much as two thirds in Ghana. The much talked about revenue generation was not realized as most countries could not generate more than 5% of the total health care cost. Gilson et al. (1995) also reported lack of direct targeting of fee revenue to the poor. The effect of user fees on households has also been extensively investigated and the overwhelming findings indicate negative impact of user fees on households (Stanton and Clemens 1989; McPake 1993; Mwabu, Mwanzia et al. 1995; Gilson 1997; Bennett and Gilson 2000; Russell and Abdella 2002; WHO/HTM/TDR 2004; Xu, Evans et al. 2006; Cissé, Luchinia et al. 2007). Increases in user fees have rarely been accompanied by improvements in the quality of services (WHO/HTM/TDR 2004). It has been reported in Ghana, South Africa, Burundi, Tanzania and Zambia that poor households were either unable or had difficulty seeking treatment due to user fees (Nyonator and Kutzin 1999). Due to user fees, poor households either have to delay health seeking until the condition of illness becomes serious and this further aggravates their conditions (Nyonator and Kutzin 1999). User fees have made the direct cost of health care unbearable to poor households. The cost of

health care has sent some poor households to near permanent impoverishment. The effect of user fees has been universally and overwhelmingly negative and this has been blamed on poor design, planning and implementation. The planners also failed to recognize the very low incomes levels in SSA (McPake, Hanson et al. 1993; McIntyre, Thiede et al. 2005).

Exemptions which were supposed to take care of the poor and vulnerable were also poorly implemented (Gilson and Mills 1995; Adams, Darko et al. 2002; Gilson and McIntyre 2005). Health providers for instance lack clarity on exemptions' criteria coupled with a lack of awareness of eligibility among the intended beneficiaries. It is also reported that even those who were aware did not want to be labled with the title of an indigent and so would not access the services altogether (Adams, Darko et al. 2002). Identifying those eligible for exemptions is also difficult. In Ghana, for instance, the aged (over 70 years), children under five and paupers are exempted from user fees but determining someone's age without a birth certificate is difficult for providers and this sometimes results in confrontations and subsequent embarrassment to beneficiaries (Waddington and Enyimayew 1989). Even if people are willing to access the exemptions, there is a problem of insufficient funds to take care of the beneficiaries (McIntyre, Gilson et al. 2005; Xu, Evans et al. 2006; Yates 2009).

Most of the equity studies in health care financing have revealed that out-of-pocket payment is the most regressive of all the health care financing mechanisms due to its link with utilisation of health care services (Wagstaff, van Doorslaer et al. 1999; Wagstaff and van Doorslaer 2001; Cissé, Luchinia et al. 2007; Leive and Xu 2008; O'Donnell, van Doorslaer et al. 2008; Yu, Whynes et al. 2008; Ataguba and McIntyre 2009; Chuma, Musimbi et al. 2009; Hajizadeh and Connelly 2009). Because OOP require payment at the time of health service use, the poor, who often shoulder the greatest disease burden, pay substantially for health care services (Penchansky 1977; Cissé, Luchinia et al. 2007). Unlike health insurance, OOP payments lack a risk pooling mechanism[24] and other essential elements that could make a health care financing mechanism equitable as suggested by Kutzin (2001). A comparative study of health care financing in nine European countries and the USA revealed that OOP payments were regressive in all

[24] Concern over heavy reliance on OOP financing motivated the current international consensus that identifies prepayment and better risk-pooling as key mechanisms for ensuring fair financing for health care (WHO 2005)

countries except Spain. The USA and Switzerland had the most regressive OOP payments and this was because co-payments were paid by all irrespective of one's income levels.

However, a recent comparative study of health care financing in Asian countries showed that OOP payments were concentrated among the higher income groups. The richest quintile contributed more than half of OOP payments in Bangladesh, Indonesia, the Philippines, Sri Lanka and Thailand (EQUITAP 2005). In these countries, the poor did not only pay less in absolute terms but less as a proportion of household resources (O'Donnell, van Doorslaer et al. 2008). It was only in Japan, Kyrgyz and Taiwan that the share of OOP paid by the poorest quintile exceeded its share of ability to pay, thus making OOP payments mildly progressive or proportional in most of these Asian countries and so contradicting the common assertion that OOP payments are regressive (O'Donnell, van Doorslaer et al. 2008). The reason for this phenomenon is that OOP payments in these countries are for private health care, which is mainly consumed by the rich and even though there are charges at the public health facilities, these are very modest and the poor are exempted. Also in some of the countries where SHI is operating, most of OOP payments are associated with co-payments which are evenly spread across the populations (O'Donnell, van Doorslaer et al. 2008). However, although the rich pay more in these countries, they also benefit more than the poor from health services. Sometimes, OOP payments are progressive simply because the poor are unable to use health services.

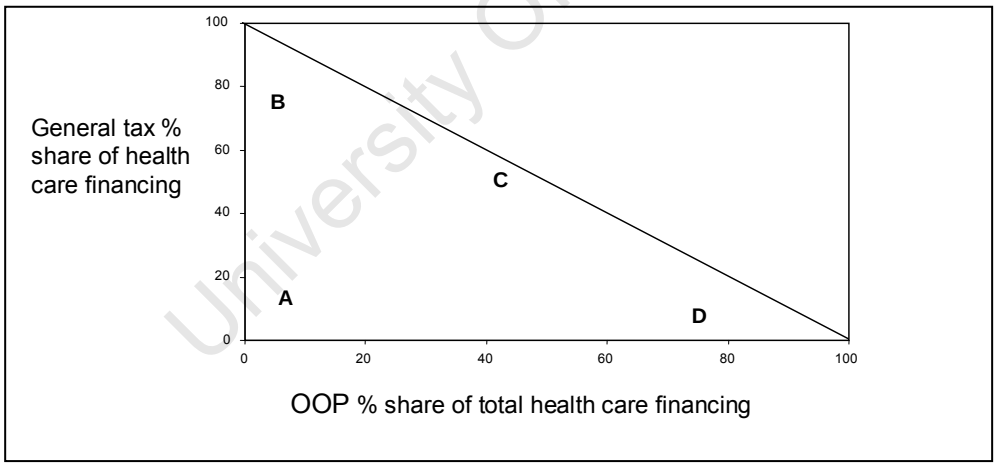
Due to user fees' negative equity implications, there is a general call for their removal and to be replaced by a more humane health care financing mechanism as a matter of urgency if universal health care, which is a goal of many SSA countries, is to be achieved (WHO/HTM/TDR 2004; Gilson and McIntyre 2005; World Health Organisation 2008). The WHO and World Bank are currently supporting alternative health care financing in the form of pre-payment schemes (health insurance) in favour of user fees which was seen as the 'panacea' to the problem of health care financing in the 1980s. In fact, countries especially those in SSA are being asked to work towards removing user fees which serve as a barrier to health service access, but this cannot be done overnight (Gilson and McIntyre 2005). Even though some countries (e.g., Uganda and South Africa) have taken steps to remove user fees fully or partially (McIntyre, Gilson et al.

2005), user fees will continue to be a significant health care financing mechanism due to the substantial resources required to meet the cost of increased utitlisation. Ghana is currently implementing SHI which is aimed at replacing user fees but the government needs over US$13 million per annum to replace user fees (Ministerial Task Team 2002).

3.5 Health care financing mix

The mix of health care financing varies from one country to the other. The health care financing triangle (Figure 3.1) referred to in the EQUITAP[25] comparative study of 13 Asian countries (O'Donnell, van Doorslaer et al. 2008), illustrates the mix of health care financing arrangement applicable to both high and low income countries. Countries that fall close to the 45º line (point C) indicate that their health care is financed almost exclusively from OOP and government tax revenue. Countries that are located at point D for instance, depict that their health care is financed substantially (over 70%) from OOP. At point B, countries' health care is financed almost exclusively from government tax revenue. However, countries that fall at point A indicate that such countries have a substantial element of health insurance in their health care financing arrangement.

Figure 3. 1: Health care financing triangle



Adapted from EQUITAP 2005

[25] EQUITAP ("Equity in Asia-Pacific Health Systems") is a collaborative effort of more than fifteen research teams in Asia and Europe engaged in examining equity in national health systems in the Asia-Pacific region. The work of the collaboration involves both development of methodological tools, and actual assessment of the performance of national health systems in Bangladesh, China, Hong Kong SAR, India, Indonesia, Japan, Korea, Kyrgyz Republic, Malaysia, Mongolia, Nepal, Sri Lanka, Taiwan, Thailand and Viet Nam. The project is an initiative of the Asia-Pacific National Health Accounts Network (APNHAN) in collaboration with Erasmus University (The Netherlands) and London School of Economics (United Kingdom).

In a recent comparative study of 13 Asian countries, it was revealed that countries/states such as Sri Lanka, Punjab (in India), Nepal, Bangladesh and Kyrgyz financed their health care virtually from equal shares of government revenue and OOP payments (point C on the triangle). The study and earlier studies (EQUITAP 2005), have shown that except for USA, Switzerland and China, high income countries rely on public health care financing-general tax and SHI-and low income countries generally rely more on OOP payments. For instance, the OOP percentage share of the total expenditure on health care was about 50% in Nepal, whilst it was only 12% in Japan.

The situation is not different in Africa, where countries such as Côte D'Ivoire, Cameroon, Burundi, Sudan, Nigeria and Uganda have more than 70% of their health care financing coming from private sources which is virtually all from OOP payments as private health insurance is very limited in these countries (McIntyre, Gilson et al. 2005). Many other African countries including Ghana have over 45% share of private financing which is mostly OOP payments. The high percentage of private health care financing associated with low income countries is a source of worry and has tremendous equity implications in relation to the ability to pay for poor households.

The incidence of all financing mechanisms combined is dependent on the percentage share of each health care financing mechanism to total health care financing and the extent to which each health care financing strategy is itself progressive, proportional or regressive (McIntyre, Gilson et al. 2005; Yates 2009). For instance, the overall financing of Germany and the UK are more progressive than the USA because SHI and general tax are the predominant health care financing mechanisms in Germany and the UK which are progressive while in the USA, health care financing is mainly private insurance and OOP payments which are regressive (Wagstaff, van Doorslaer et al. 1999). Many low income countries, including Ghana, which have significant OOP payments in their health care financing systems, could have an overall inequitable or regressive health care financing system. Empirical data is thus needed to understand the equity dynamics of health care financing in low income countries especially in Africa.

3.6 Summary of the literature review

The purpose of this Chapter was to review relevant literature on equity, equity in health and equity in health care financing and examine the various health care financing mechanisms and their mix. Equity is a difficult concept to define but remains a very

important policy goal (Whitehead 1992). Some writers even suggest that equity should be given more priority than efficiency (Mooney 1996). Equity in health care financing requires that health care be financed according to be ability to pay rather than the use of health services. This can be interpreted in terms of vertical equity or horizontal equity, with the later requiring that individuals with the same ability to pay make the same contribution. Vertical equity, which requires that individuals of unequal ability to pay make appropriately dissimilar payments for health care, is preferred in this study. However the question remains how dissimilar these payments should be. Should individuals make proportional or progressive payments? This study advocates not only for vertical equity but a very progressive financing system such that the disadvantaged or poorer pay a lower percentage of their income than the rich. This is the most appropriate means of effectively and speedily achieving equity gains as it recognizes that different people have different starting points and so must be treated differently (McIntyre, Muirhead et al. 2002). The precise form that the differential treatment might take requires that the poor and the disadvantaged are comprehensively protected from the burden of health care payments. It is important to note that there are operational difficulties in measuring vertical or even horizontal equity as there needs to be a judgement on both the relevant dimensions for measuring differences (i.e. difference in need) and how differently those groups should be treated.

In sum, empirical evidence on alternative financial contribution mechanisms reveals that OOP payments are generally regressive or as minimum, least progressive. OOP payments are supposedly progressive simply for the fact that the poorest do not use health services if they are required to pay. PHI is often regressive particularly in countries (e.g. USA and Switzerland) where PHI contributions account for a large share of total health care financing. In the few occasions where PHI is progressive (e.g. South Africa), the poor are simply not part of this system and only those who contribute benefit. SHI on the other hand is generally progressive since it is normally based on payroll deductions. However, it is often less progressive compare to general tax. General tax is usually the most progressive financing mechanism. There is a general consensus internationally that OOP payments be reduced or removed altogether and efforts made to promote pre-payment. However, given the fiscal constraints, there is tremendous interest in supplementing tax funding with SHI contributions to achieve universal coverage.

3.7 Coceptual framework

It is generally accepted that health care should be financed according to ability to pay but this requirement can be interpreted in terms of both vertical equity and horizontal equity (Wagstaff 2000; O'Donnell, van Doorslaer et al. 2008). As mentioned earlier, this study focuses on vertical equity in health care financing, which requires that persons or households of unequal ability-to-pay make appropriately dissimilar payments for health care. However the question remains what should be the extent of differences in the burden of health care payments relative to income? Should the burden of health care payment be proportional, progressive or even regressive? If progressive as this study advocates, how progressive should health care payments be? Therefore, the study defines equity in health care financing by going beyond the conventional definition of vertical equity in health care financing in recognizing that persons or households have very different *starting points in life* and so must be treated unequally but equitably with regard to health care financing. This requires that the poor and vulnerable who cannot make financial contributions are recognized in the formulation of health care financing policies. The poor and vulnerable will need to be identified and adequately exempted from health care payments. It also recognizes that health care payments should not compel individuals and households to sell valuable household assets or borrow and should not impoverish households (Russell and Abdella 2002; McIntyre, Thiede et al. 2005; Chuma, Musimbi et al. 2009; Kruk, Goldmann et al. 2009).

Equity in health care financing rests on the relationship between Financing mechanisms and socio-economic status or ability to pay (see A and B in Figure 3.2). Most countries including Ghana finances their health care from a mix of two main categories of financing mechanisms-voluntary and mandatory. Voluntary health financing includes OOP payments, private health insurance (in Ghana this financing mechanism covers less that 1% of the population) and to some extent NHI/SHI. Mandatory health financing includes direct tax (i.e. personal income tax, company tax) and indirect taxes (fuel levy, VAT and import duty) and to some extent NHI/SHI. SHI is often mandatory when it is limited to the formal sector and funded through compulsory payroll deductions. However, NHI/SHI is voluntary if it is extended to cover the informal sector through premium payments. One unique feature of the Ghana's NHI/SHI is that the SHI/NHI is by law mandatory for both formal and informal sectors but in practice it is voluntary for the informal sector since they are required to pay a premium to join. The other key element

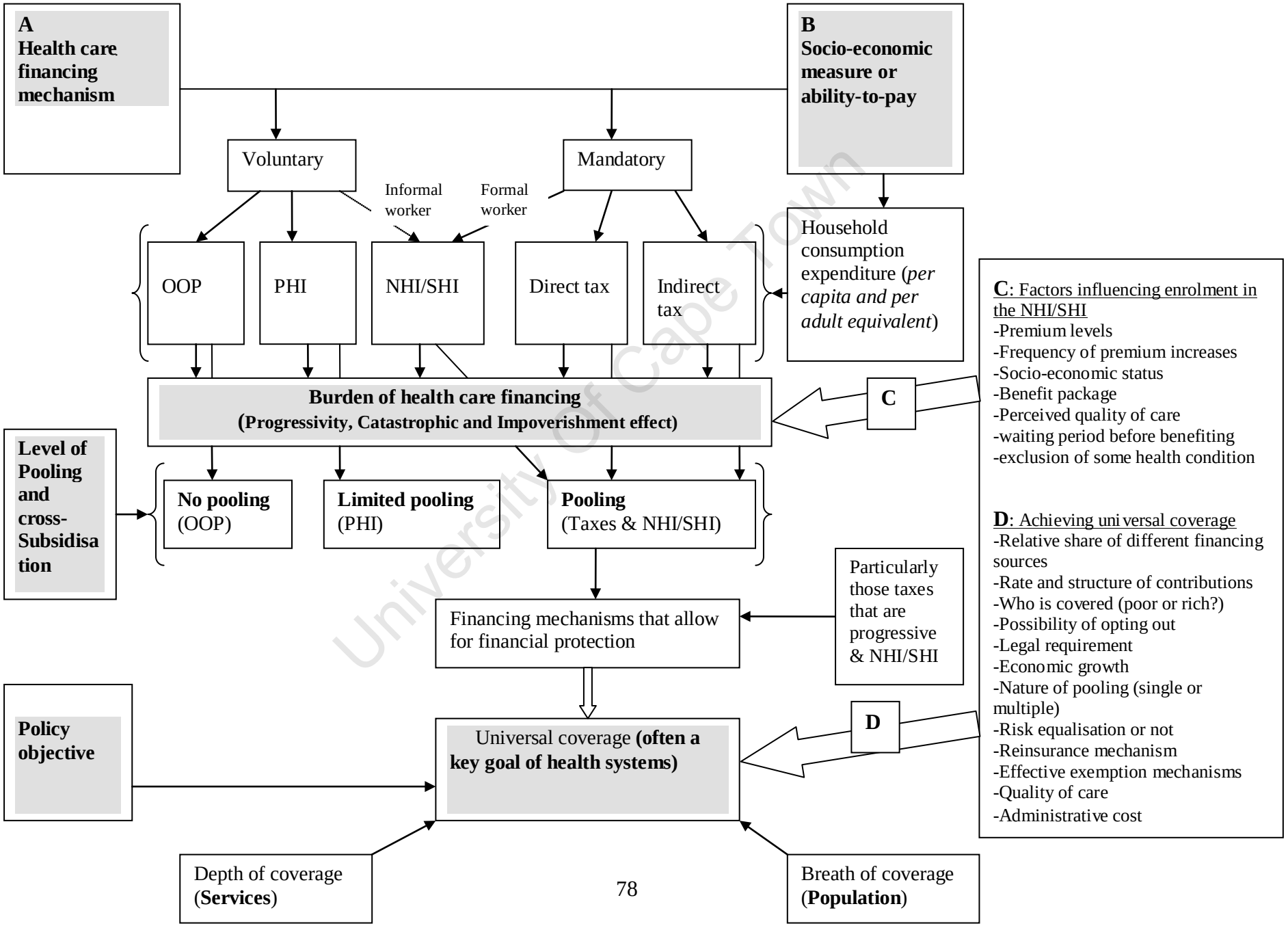
influencing the equity of health care payments is that of the socio-economic status or ability-to-pay of the population. Although there are a number of alternative measures of socio-economic status that can be used to measure equity in health care financing, the appropriate measure that has been selected in this study is the household consumption expenditure using both the per capita and adult equivalent (see details in methods chapter).

The burden of each payment mechanism can be classified as progressive, proportional or regressive (see Figure 3.2). Some payment mechanisms (e.g OOP) could also be catastrophic in that households can be exposed to large unexpected expenses when they have to use health services which can be very high relative to their ability to pay. Some financing mechanisms, particularly OOP payments, could also force households or individuals into poverty through the purchase of health services. The health system needs, therefore, to seek financing mechanisms which will allow for pooling of resources in a common pool. This is critical because health care costs are unpredictable as it is difficult for individuals and households to know when illness will strike or the intensity of the illness and what the needed health services will cost. It is easier to predict the health care needs and health care costs for a group of people based on epidemiological and other related data than for an individual and that is why there is a need for risk-pooling such that the healthy cross-subsidise the ill. With pooling, the risk of falling ill and incurring unexpected and high health care costs is shared between those in the pool. In Figure 3.2, it can be seen that, according to the literature, those financing mechanisms that allow for the widest pooling include the NHI/SHI, and direct and indirect taxes. OOP payments lack pooling characteristics. Private health insurance (PHI) has limited pooling since it mostly the better-off who belong to these schemes. One unique feature of this study is that it does not just stop at assessing the distribution of the burden of health care financing but goes beyond this to explore the factors or drivers (C in Figure 3.2)) that influence the financing incidence, particularly for the financing mechanism (NHI/SHI) that the health sector has some level of control over and which Government intends to build on in order to extend financial protection to the population. In contrast, the health sector has limited ability to influence taxation policies. The factors that may influence the the enrolemt in the NHI in Ghana are listed on the right hand side of Figure 3.2 (C in Figure 3.2).

Universal coverage is a policy objective of most health systems and as Mills (2007) highlighted, no country objects to universal coverage but the question is how to achieve that. Universal coverage is commonly defined as all citizens (breath of coverage) having access to adequate health care (depth of coverage) at an affordable cost. This means that universal coverage can be achieved through a combination of different financing mechanisms, particularly SHI/NHI and taxes (particularly the progressive ones). Achieving universal coverage requires that individual and structural factors (D in Figure) are identified and resolved.

This conceptual framework reflects the key elements of the analysis (emerging from the literature review) that is undertaken in this study. It serves as a reference point for reviewing how the different elements of the analysis relate to each other.

Figure 3. 2: Conceptual framework: Equity in health care financing



Chapter Four: Methods

4.0 Introduction

The chapter outlines the detailed methodology including the data sources, measurement of households' ability to pay (socio-economic status) and health care payment variables. The chapter also highlights methods of data collection, analysis and how ethical issues were considered.

The study attempted to measure the relative progressivity of health care financing mechanisms and the catastrophic and impoverishment effect of health care payment drawing on secondary data in the form of the 2005/2006 national household survey (the Ghana Living Standard Survey). This was complemented by my own primary data collection (a household survey called the SHIELD survey, focus group discussions and indepth interviews) in six districts. The SHIELD survey data largely involved data collection on the NHI including factors influencing the incidence of this financing mechanism.

4.1: Data sources

4.1.1 The Ghana Living Standard Survey (GLSS)

The main data source for determining who bears what health care financing burden was the Ghana Living Standard Survey (GLSS).

The history of the Living Standard Survey (LSS)[26] can be traced back to family budget surveys. The first of these surveys were undertaken by Reverend David Davies in 1795 and Sir Frederick Morton Eden in 1797 in England (Deaton 1997). Davies and Morton were moved by the distress of the working classes at the time. Davies used his results to draw attention to the living conditions of the poor, and to argue in favour of a minimum wage. The spread of working class-socialism in Europe also led to the compilation of household budgets in the late 1940s in Europe (Deaton 1997). According to Deaton (1997), information on Belgian household budgets was used by Ernest Engel not only as

[26] Also known in the literature as Living Standard and Measurement Survey (LSMS)

basis for his observation that the fraction of the budget devoted to food is larger for poorer families, but to estimate aggregate consumption (Deaton 1997).

The current system of LSS was initiated by the World Bank in 1980 based on the need to improve data collection efforts in developing countries in order to understand better the extent of poverty and the determinants of living standards. The survey is designed to provide household level data for the evaluation of the effects of various government policies on the living conditions of the population. The main advantage of the LSS is that it is a multi-topic survey designed to allow for various kinds of analysis, including equity and financing incidence analyses. The Ghana LSS was first conducted in 1987/88 with follow-ups in 1991/92, 1998/99, 2000/2001 with the latest being in 2005/2006.

The secondary data used for the financing incidence calculations were the latest Ghana Living Standard Survey (GLSS) of 2005/2006 collected by the Ghana Statistical Service, a national body responsible for conducting all demographic, health and living standard surveys. This is the fifth time this survey has been conducted, hence its name of GLSS 5. The sample size for GLSS 5 was 8687 households, covering a total of 36, 488 individuals. The individuals represent 0.17% of the total population of Ghana. Data collected by a LSS relates to all aspects of household decision-making and well-being. The data contain information on household consumption of both durable and non-durable items. Data on the consumption of durable items were collected for the previous 12 months whilst those for non-durable or frequently purchased items were collected weekly for ten weeks using a weekly diary.

4.1.2 The SHIELD household survey

To complement the GLSS data, a primary household survey was conducted in a sample of six districts (see section 4.2.1) focusing on the NHI and other direct health care payments. The SHIELD survey collected data on household expenditure on health care, household SES, factors affecting health care payments and the impact of out-of-pocket payments on the ability of lower income subgroups to access prompt and equitable care for major health problems in the country. The SHIELD data was collected within four months (July to October) in 2008, with a total population of 14050.

The Ghana NHI is a recent phenomenon and NHI contributions were not fully captured in the 2005/2006 GLSS, which was used to analyze the incidence of the other health care

financing mechanism. Thus, information on NHI was gathered through the SHIELD survey and from the offices of SSNIT and the NHIS, which allows for a more accurate incidence analysis of health insurance contributions. The SHIELD survey also supplemented the incidence analyses of direct payments (OOP) for health care at the household level.

The key policy focus of the Ghana NHI implementation is the expansion of district health insurance (DHI). The challenge is its rapid expansion to cover those in the informal sector. So a key aspect of the SHIELD survey was to investigate in detail who contributes to these schemes, and to identify the obstacles to further expansion of the DHI scheme coverage. The instrument was developed based on the objectives of the study.

Household survey questionnaire interviews were conducted with heads of households (see Appendix A for questionnaire). Here, a wide range of data was collected including:

- *SES indicators*
- *MHI scheme membership status, and if they are members, when they joined*
- *The contribution rate and frequency of payment by members*
- *Whether or not they were exempted from contributions (if eligible for exemption, whether they received the exemptions or not)*
- *Perceptions of how the HI has changed access to and quality of health services*
- *Satisfaction with DHI*
- *Health service use in a specified recall period.*

Information on SES enables the analysis of the equity in health insurance contributions and other direct health care payments. Information was also collected on non-members of the scheme, and the reasons why they are not members.

4.1.3 Qualitative components

Qualitative data collection methods (focus group discussions[27], in-depth interviews) were undertaken in the survey study sites (sampled districts) as well as with key National Health Insurance Scheme (NHIS) staff.

The qualitative research explores issues affecting health care payment and the impact of this NHI on the ability of lower income subgroups to access prompt and equitable care

[27] A focus group discussion is usually made up of between eight to twelve participants. The main purpose of this interviewing technique is to solicit generalized information that provides the normative patterns of the beliefs and perceptions of the communities under study. Although guides are drawn up to cover the broad themes of the research, discussions do not necessarily have to follow the order of the guide; however, the most important issue to remember is to make sure that all themes are covered by the end of a session

for major health problems in the country. Generally, information gathered from the FGDs and IDIs included:

- *Current premium level*
- *Whether different people pay different premiums and the basis*
- *Whether the scheme is pro-poor*
- *Criterion for granting exemptions in the districts*
- *How premiums are collected (installment, in-kind)*
- *Whether exempt groups (identification of the poor) are issued with the same type of insurance cards*
- *Challenges with regards to the issuance of cards*
- *Waiting period between registration and issuance of insurance card*
- *Issues (length of time, processes) of reimbursement of providers' claims*
- *Funding of the DHI*
- *Benefit package and quality of services (issues of purchasing) to client*
- *Issues of sustainability of the scheme*
- *Community participation and support of the scheme*
- *General challenges of the of the scheme*

4.1.3.1 Focus Group Discussion (FGD)

The qualitative studies involved interaction with community members through FGDs in the six sampled districts (see Appendix B for FGD guide). The FGDs concentrated on the ways in which people perceive the scheme and how it impacts on their health care seeking. Discussions also explored community views on strategies for the expansion of the national health insurance scheme. Specific issues that were explored included contribution rates and frequency of payment, benefit package, exemption criteria and mechanisms, quality of care and general satisfaction with the scheme. On the training of staff for the data collection, six teams (made up of two experienced people per team and who understood the local language) were recruited and trained for a week. The FGD guide was piloted in areas outside the six study districts.

4.1.3.1 Indepth Interviews

At the DHIS offices, information was collected through indepth interviews from scheme managers on the benefit package and purchasing (type of services and providers covered, whether there is active service purchasing, and provider payment mechanisms), and the nature of the DHI (extent of community participation and accountability mechanisms). Information was also collected on the coverage (number of members disaggregated by contributors and those exempted) and general implementation challenges of the scheme (see Appendix C for data collection sheet). I (researcher) personally conducted the interviews with the district scheme managers. The eligibility for inclusion was based on

one's district being part of the overall SHIELD study. I interviewed the scheme managers in their offices and permission was sought to tape record these interviews.

In addition to interviewing the six district scheme managers, a key NHIS headquarter's - operation manager who represented the executive secretary of the NHIS (see Appendix D for indepth interview guide) was also interviewed by the PI.. The operation manager is the link person between the district schemes and the NHIS headquarters and so it was important that he was selected for the interview.

4.1.4 Training of field assistants

Thirty-five field assistants with tertiary education background were recruited and trained on the background, aims and objectives of the study, the role of the interviewer, community entry strategies and the household survey instrument for a period of three weeks. They were also trained on the administration of the various study instruments. Mock interviews were also conducted as part of the training. This was followed by supervised pretests in the field to assess the competences of the field assistants. Actual data collection commenced on the 11th July 2008 and ended on 30th October 2008 with periodic meetings of the field assistants to address issues from the field.

With the FGDs, six teams of two people each with relevant experience, were recruited and trained for two weeks on the objectives of the study, how to conduct qualitative research and all other techniques for carrying out FGDs. After the training, a supervised pilot test was undertaken. The FGDs were also undertaken within the same period as the household survey

4.2 Sampling

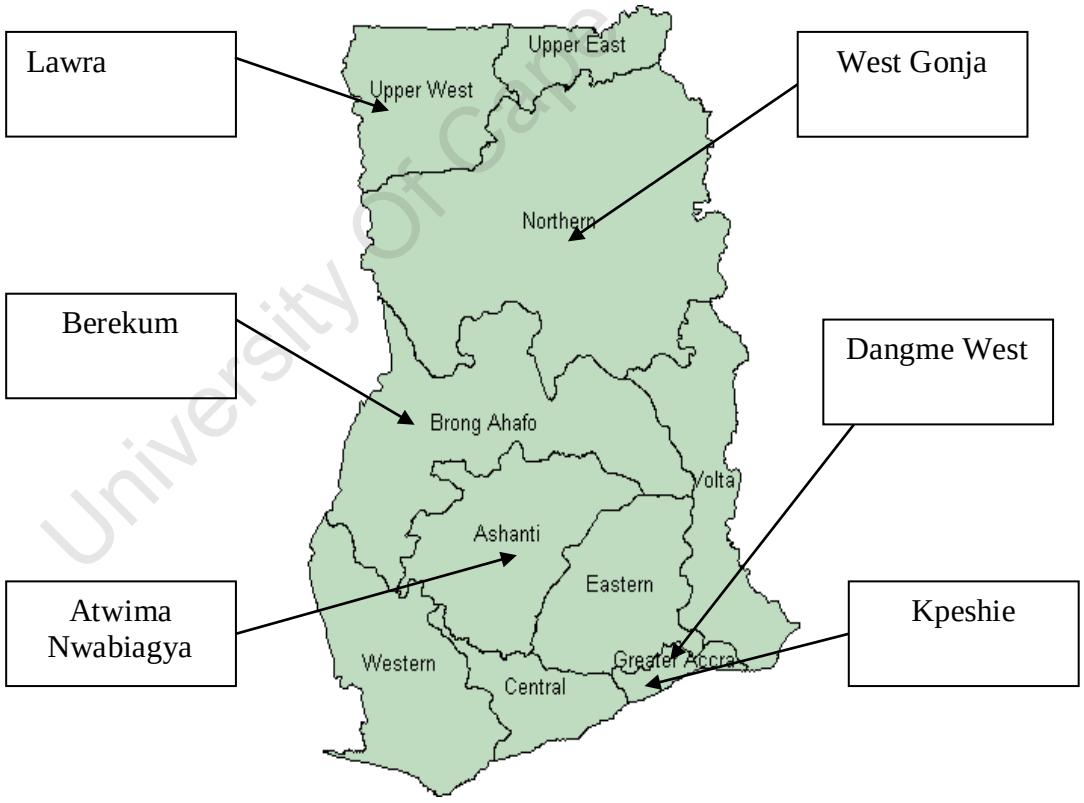
4.2.1 The six study districts for the SHIELD study

Since the country is distinctly and broadly zoned into three belts (southern, middle and northern sectors) the study has strategically undertaken a multi stage random sampling in each of the belts for the SHIELD survey (household survey, FGDs and IDIs) (see Figure 4.1). The key criterion was that a district had to have DHI scheme[28] operating at the time of initiating this study. Two districts and their schemes from the southern belt were

[28] There were a total of 145 district health insurance schemes in 2008

selected and these are *Kpeshie* Sub-Metro scheme (a new urban scheme which is operational and working in line with the NHIS) and the *Dangwe West* scheme (which is operational and has been working for over five years covering both out and inpatient care in line with NHIS). Two districts and their schemes from the middle belt have been selected, the *AtwimaNwabiagya* and *Berekum* schemes in *Ashanti* and *Brong Ahafo* regions respectively (functioning schemes, operating in line with the NHIS). Two schemes were also randomly selected from the relatively poor northern belt and these are the *Lawra* and *West Gonga* schemes which were also operating in line with the NHIS and have so far registered more indigents (who cannot pay their premiums and have to be fully subsidized by government) than the southern and middle belts of Ghana. A brief description of each district is provided below

Figure 4. 1: Map of Ghana showing the location of selected districts



4.2.1.1 Lawra

The Lawra district has an estimated population of 96,841. The population density is about 89 per square kilometre. About 83% of the population is engaged in subsistence agriculture (both crop and animal production). The soil here is poor and the weather conditions are unfavourable for good crop production. Food shortages are experienced

which lead most of the youth migrating to the southern part of the country in search of jobs. The district has two district hospitals and eight sub-district public health centres and two Reproductive and Child Health (RCH) centres. It has three functioning CHPS compounds. The district has one private maternity home and one private clinic. It has 213 trained Traditional Birth Attendants (TBA) and 13 chemical sellers, but most of these are located in the district capital.

4.2.1.2 West Gonja

The West Gonja district lies in the savannah zone of Ghana. The district is divided into six sub-districts. These are Damongo, Mole, Busunu, Daboya, Mankarigu.and Bawena. Just like the Lawra district, rainfall in the district is erratic and this irregular distribution of rainfall hinders agricultural activities and this leads to food shortages and hunger around the months of May/June. The district also experiences soil erosion and floods. About 60% of the population is engaged in agriculture, livestock farming and fishing. Quite a number of the inhabitants, mostly the youth, migrate to the southern part of the country in search of economic activities. With regard to health services, the only district hospital is located in Damongo (the district capital) and is owned and operated by the Catholic church. It serves as a referral centre for the health centres. At the sub-district level, there are four health centres, three (3) clinics and one CHPS compound.

4.2.1.3 Berekum

Berekum is one of the 19 districts in the Brong Ahafo Region (see Figure 4.1). The Berekum scheme has the highest number of NHI registered members in Ghana currently. More than half of the population is insured. With a population growth rate of 2.5%, the population is about 110,827 based on the 2000 population and housing census. The main economic activity in the region is farming and more than 70% of the population is engaged in farming. Unlike the northern districts, there is food sufficiency in this district. It is a major cocoa and timber producing area. It has three sub-districts. The Holy Family hospital is a mission health care facility that had served the district for over 50 years. It is the only referral point for 21 other facilities. The district has 11 public health facilities of which three are functional CHPS compounds. It has 10 privately owned health care facilities.

4.2.1.4 Atwima Nwabiagya

The district has two rainfall seasons each year and food is abundant. The district capital is Nkawie and has four sub districts: Abuakwa, Akropong, Barekese and Asuofua. The

district has a population of 185,074. With regards to health care, the district has one public district hospital and four health centres. It has also four private clinics and seven private maternity homes. The doctor-patient ratio is as high as 1:92,537 (GHS 2007).

4.2.1.5 Kpeshie

The Kpeshie district has one of the most vibrant urban health insurance schemes and was the first to be established in the Greater Accra Region in 2004 after the introduction of the NHIS. The Kpeshie district has a population of 387,013. The major economic activities in the district are fishing, carpentry and commercial transportation. There is a large group of formal and informal workers in the district. There are about 36 health facilities in the district and most of them are privately owned including ten private midwifery centres. The only hospital operating under the Ghana Health Service in the District is the La General Hospital**.** The doctor-patient ratio is 1:52,315 while the nurse-patient ratio is 1:1,982.

4.2.1.6 Dangme West

Dangme West district is one of the five administrative and political districts in the Greater Accra Region. It covers about 45% of the land surface of the Greater Accra Region. It has a completely rural setting. The population is estimated at nearly 100,000. Communities with the largest populations are Prampram, Dodowa and Old Ningo with slightly over 56,000 people. Most of the communities are small and widely scattered with less than 2,000 people. There is wide spread poverty among the people who are mostly subsistence farmers, fishermen and petty traders. A handful of artisans and civil servants are also found in Dodowa, Prampram and Asutsuare. The district has one of the oldest district health insurance schemes in the country. There are four health centres, three community clinics and three CHPS Zones for the public sector. These inadequate facilities are complemented by one mission facility, three private clinics and two maternity homes. There are three diagnostic laboratories, one each in the three largest communities. There is no hospital and referral cases are handled by neighbouring districts.

4.2.2 Sample size determination for the SHIELD household survey

According to the National Health Insurance (NHIC) 21% of the 21 million people of Ghana were insured with the NHIS in 2007 and are effectively protected from out-of-pocket fees (Agyepong and Adjei 2008). At the time of going to field for the survey in August 2008, the NHI coverage was expected to increase from the 21% in 2007 to approximately 38% and so assuming an absolute precision of $\pm$ 2.25% at the 95%

confidence level with an expected proportion of 38% NHIS coverage in 2008, we calculated a sample size based on the number of households in each of the six districts below. I further stratified the respondents according to the proportion of insured and uninsured population in 2007 (NHIC 2007). The proportion of rural/urban[29] and regional household sizes[30] as captured in the 2000 population and housing census report (GSS 2002) were also used to estimate the final sample population for the various districts.

According to Wayne W.D. (1987), sample size can be calculated through the following formula:

$$n = \frac{N\, z^2\, p\, (1-p)}{d^2\, (N-1) + z^2\, p\, (1-p)}$$

N: total population

Z: value (corresponding to the confidence level)

d: absolute precision

p: expected proportion in the population

n: number of households

This gives a sample size of 2980 households.

4.2.2.1 Sampling frame and units

The sampling frame was drawn from Enumeration Areas (E.A's) of the six districts according to the 2000 population and housing census frame of the Ghana Statistical Service (GSS). The Enumeration Areas (EAs) are small area units of a population size of about 750 and between 150-200 households on average. EAs have important properties such as well defined boundaries that are represented on maps and relatively small sizes of clusters. Specifically, the EAs constitute the primary sampling units (PSU), while households within EAs constitute secondary sampling units (SSU). The samplying method for the SHIELD survey reflected the way the GLSS sample was done.

[29] Urban proportion of district population (Atwima Nwabiagya 20.7%; Berekum- 54.7%; Dangme west 23.6% and Kpeshie 100% ; Lawra 13.8%; West Gonja 13.7%)

[30] Regional household sizes (Ashanti Region –Atwima Nwabiagya 5.3; Brong Ahafo-Berekum-5.3; Greater Accra-Dangme west and Kpeshie 4.6; Upper West-Lawra 6.4; Northern Region-West Gonja 7.4)

A two staged stratified random sampling design was adopted[31]. Initially a fixed number of 20 households per EA was considered and given our sample size of 2960 households, this yielded 148 EAs (i.e. =2980/20) in the first stage of sampling. The 148 EAs were then apportioned to each district based on the proportion of the population in that district. For instance Atwima Nwabiagya has a population of 158,989, which is 13.86% of the total population of the six districts and so the number of EAs that was sampled in the district was 21 (i.e. 13.85% of 149 EAs). Given that the urban population constituted 20.7% of the population in Atwima Nwabiagya, the distribution of EAs between rural and urban in that district was 17 and 4 respectively. To obtain the number of households that was surveyed in rural and urban areas, I multiplied the number of EAs in each location by the 20 households that was initially considered (Table 4.1).

Table 4. 1: Sample allocation and number of EAs

			Number of EA's selected			No. of HHs selected		
Districts	**Population***	**Proportion urban****	**Urban**	**Rural**	**Total*****	**Urban**	**Rural**	**Total**
Atwima Nwabiagya	158,989	20.7	4	17	21	80	340	420
Berekum	108,078	54.7	8	6	14	160	120	280
Dangme West	111,935	23.6	4	11	15	80	220	300
Lawra	101,119	13.8	2	11	13	40	220	260
Kpeshie	466613	100	60	0	60	1200	0	1200
West Gonja	200,374	13.7	4	22	26	80	440	520
TOTAL	**1,147,108**		**82**	**67**	**149**	**1640**	**1340**	**2980**

*2007 population from population projection estimates, Ghana Statistical Service
** Proportion urban population
*** assuming a fixed take of 20 HHs per EA

The EAs for each category (rural and urban) were selected using systematic sampling. For example, choosing four urban EAs from a total of 28 urban EAs in Atwima Nwabiagya was done by first randomly selecting an EA as a starting point; I divided the 28 EAs by the 4 EAs to obtain a required systematic pattern of selection (i.e. 7). All the EAs were numbered serially and in the case of Atwima Nwabiagya the third EA was initially randomly selected and so the next EA that I selected systematically was 10th, 17th and 24th. Maps for the selected EAs were then prepared by the Cartography division of the Ghana Statistical Service. Map description forms were prepared and attached to each map for easy interpretation of the maps. In the second stage, the 20 households were selected systematically (the same way as was carried out with the EAs) for each EA to produce a total of 2980 households, stratified into insured and uninsured by the

[31] The same method used in the GLSS 2005/2006

proportion insured and uninsured (Table 4.2). The target was then to interview a round figure of 3000 households but at the end of data processing, 2986 households were successfully interviewed and captured in the data base. The 14 remaining households had incomplete information that could not be captured in the data base To identify an insured or uninsured household for interview, data collectors initially went round all households in the sampled EAs and screened the households. Households in each domain (insured and uninsured) were selected systematically. Head of households or adult respondents were asked a screening question about whether the head of the household or the spouse or both were currently insured with the DHI and had a valid Identification card (ID). The Data collectors went further to inspect the ID. A household where the head or the spouse or both had a valid ID, that household was considered an insured household. On the other hand where neither the head nor the spouse is insured, that household is considered an uninsured household. This criterion was adopted because in the NHI, children under 18 are only covered if both parents (or one parent as the case may be) are insured.

Table 4. 2: Distribution of the population and households into insured and uninsured

Districts	Population	Insured pop	Uninsured pop	Number of HHs	Household Sample Size interviewed				
						Insured		Uninsured	
					Total	Rural	urban	Rural	urban
Atwima Nwabiagya	158,989	88,313	70,676	29,998	420	186	46	154	34
Berekum	108,078	65,413	42,665	20,392	280	75	94	45	66
Dangme West	111,935	51,257	60,678	24,334	300	98	39	122	41
Lawra	101,119	49,222	51,897	16,887	260	105	20	115	20
Kpeshie*	466613	137,363	329,250	101,438	1200	-	354	-	846
West Gonja	200,374	45,173	155,201	27,078	520	96	21	344	59
	1,147,108	436,741	710,367	220,126	**2,980**	560	574	780	1066

*Urban district

4.2.2.2 Sample size for the FGDs and IDIs

Eight FGDs were conducted in each district except Kpeshie, stratified into adult (over 18 years old) male and female, urban and rural and insured and uninsured Since Kpeshi is mainly an urban area, four stratifications were used (i.e. adult male and female, insured and uninsured). Each FGD was made up of 8 to 12 members. These were randomly selected or sampled from the communities. In all, 44 FGDs were successfully carried out and transcribed in the six districts of the study. Seven in-depth interviews involving the six district health insurance scheme managers and the operation manager at the NHIS headquarters were successfully conducted and transcribed. All instruments that were

administered at the community level were translated into the various local languages by experienced translators and back translated into English to ensure accuracy.

4.3 Data collection methods

Given the high illiteracy rates in the study areas, the study involved face-to-face interviews in the sampled areas. All interviews (except for the officials of the NHIS and the district scheme managers) were conducted in the respective local languages of the respondents. Fieldworkers were recruited and trained for approximately four weeks for the household survey and two weeks for the qualitative arm of the study. The training enabled the fieldworkers to understand and appreciate the concept of the study, how to 'enter' the community and how to ask questions appropriately and in a culturally acceptable manner.

A pilot test for the quantitative and qualitative studies was conducted before starting data collection. The pilot test was essential to identify various issues such as, the acceptability and reactions of the respondents to questions, length of time for interviews, logical sequence of questions, clarity of questions and need for more instructions on the questions. Pilot testing of both the quantitative and qualitative questions was carried out in areas and to people who were not part of the actual sample population.

Permission was sought to tape record all the qualitative interviews. Detailed notes of the discussions were taken. Interviews were then transcribed verbatim and translated into English for analysis and report writing.

4.3.1 Quality control

To ensure the quality of work in the quantitative (household survey) arm of the study, completed questionnaires were checked by the researcher for errors and inconsistencies to ensure that questionnaires were corrected before data entry. Data entry screens were designed with all the necessary checks in place. The piloted questionnaires were used to test the screens before actual data entry. Any query or inconsistencies in the questionnaires were returned to the fieldworker(s) for a re-interview with the respondent. The researcher conducted further checks by randomly selecting questionnaires that were completed by fieldworkers and the respondents revisited and interviewed to make sure

that fieldworkers actually conducted interviews in the study areas. In all about 3% of households were revisited and interviewed.

With the qualitative arm, the researcher ensured that information recorded was translated into English and transcribed verbatim (in the respondent's own words) to guarantee one does not lose the original meaning of the expressions. The tapes were labeled and securely kept for future reference. The importance of ensuring quality work was stressed in the training and during the pre-testing of the study instruments.

All the household survey questions were pre-coded and a database was constructed using the FoxPro (version 2.6) database management program by data managers. The questionnaires were put into batches and given form numbers to avoid any losses. The data was entered twice by trained data entry clerks. This was followed by a verification check by a data manager to ensure that the data were correctly entered.

4.4 Introduction to Data analysis

Analysis of financing incidence require two key variables, the ability to pay or socio-economic status and the amount paid towards health care health care payment mechanism. Each of them is examined in relation to how they were analyzed in this study. The two main data sets used for the analysis was the GLSS and SHIELD household survey. To ensure that the SHIELD household survey was also nationally representative as that of GLSS, the survey was weighted.

4.4.1 Weighting the SHIELD household survey

To generate the weights, I assume that for each of k individuals in the SHIELD sample survey, I have information on a set of J relevant variables of interest denoted as:

$$x_k = [x_{k,1}, \ldots, x_{k,J}]' \qquad (4.1)$$

These set of J variables I used to ensure that the generated weights replicate the population of those with the same variable. Basically, each of these variables is a dichotomous variable. I used the following variables: sex, insurance status, location (urban/rural).

Therefore, $\sum_{k=1}^{K} x_{k,male}$ is the total number of males in the SHIELD sample. The same can be obtained for the total number of females, insured individuals, those that live in urban areas and those that live in rural areas. Generally, $\sum_{k=1}^{K} x_{k,J}$ is the total number of individuals in the sample with a characteristic in the J^{th} variable. Because there was no initial sample weights provided, all individuals were assumed to be self-weighted. The re-weighting exercise here takes into account the variables that were used in the sampling process. The SHIELD sample was selected by taking into account insurance membership, region and location. The sex variable was included to ensure demographic balance in the weights.

My intention therefore is to generate the weight w_k for each individual such that:

$$T_x = \sum_{k=1}^{K} w_k x_k \quad \text{..... (4.2)}$$

is the total number of individuals with the specified characteristic of the variable x. For example, T_{male} will be the total number of males. The estimated sample equivalent is $\hat{T}_x$.

Because this will require series of permutations, one simple way to go about Equation 4.2, which I adopted here is to generate a dummy that encompasses the three relevant variables. This gives me eight (8) permutations. Therefore, Equation 4.2 simplifies to:

$$T_{Z_{g,M}} = \sum_{k=1}^{K} w_k Z_{k,m} \text{ for each } m \text{ ..... (4.3)}$$

Where $Z_{k,m}$ is the combination of the three dummy variables. Note that $Z_k = [Z_{k,1}, \mathrm{K}, Z_{k,M}]$ where $M = 8$. The equivalent sample representation is $\hat{T}_{Z_{g,M}}$ where $w_k = 1$ for all k.

Basically, the weight variable of interest w_k appropriate in Equation 4.3 to generate the population totals is given as:

$$w_k = \sum_{m=1}^{M} \left(T_{z,m} / \hat{T}_{z,m} \right) \text{..... (4.4)}$$

Where $T_{z,m}$ in this case, is the total number of people in the population of Ghana with the specified combination of characteristics m. For example $T_{z,1}$ may be the total number of Ghanaians who are females, insured and reside in the urban areas. This was obtained from the National Health Insurance Authority.

Specifically, the weighting scheme in Equation 4.4 was done across the three Ghanaian zones (coastal, northern, and middle zone). This was also possible as I obtained the population distribution of the variables under consideration across the zones.

4.5 Measurement of ability to pay or socio-economic status (SES) variable

The study related health care payments to SES within households to determine the incidence of health care payments. However, the problem arises as to how best to measure SES or living standards. The approaches available for measuring SES that are applicable to the evaluation of the incidence of health care payments are household income, household expenditure and household consumption. Sen (1999) has also proposed measuring individual welfare in terms of individual "capabilities". He argues that wellbeing should be assessed by the attainment of some basic capabilities such as avoiding hunger and illiteracy (Martinez-Vazquez 2004). According to Sen, while income and individual preferences matter, they should be seen to be influencing capabilities only along with other factors. Sen's argument simply adds to the uncertainty about how "best" to measure welfare or SES.

All the arguments in the literature notwithstanding, the most 'relevant' measure of SES must depend largely on the availability of the required data. As Filmer and Pritchett (1998) noted in their study in Nepal, there is no perfect measure of SES. Income, and consumption expenditure measures have been used in different studies (O'Donnell, van Doorslaer et al. 2008) . In the comparative study of 13 Asian countries, income was used as a measure of SES in Japan. Consumption expenditure was used in the case of less developed countries like Nepal (O'Donnell, van Doorslaer et al. 2008). Household assets are increasingly used as a practical approach in classifying SES in low-income country HH surveys. While asset-based wealth indexes are less likely to suffer from problems of recall bias and mis-measurement (of ownership of assets) by comparison with other measures in developing countries, they are not without their limitations such as focusing on ownership at the household level and thereby overlooking the fact that 'poor'

individuals may live in relatively wealthy households. Also, it is not always easy for households to convert assets into cash for the purposes of health care treatment. Reported income is often seen as a good measure of SES. The use of income as a measure of socio-economic status for example, allows one to examine income elasticity in health care payments. Income also measures the degree of household "command" over resources (which they could use if they so wish). Another advantage of income is that it generally costs only a fifth as much to collect income data compared to consumption expenditure data, so a larger sample for collecting of income data can be collected (World Bank 2005).

However, data on income have their drawbacks. First, the lack of an organized labour market particularly in SSA and income variability over time does not allow it to be a good estimate of SES especially in developing countries including Ghana. It is not clear what time period is appropriate for the measurement of income; should someone's income be looked at for a year? Five years? Or a lifetime? Many students for instance are poor now but have good lifetime prospects. Secondly, income could be underestimated in developing countries with a large informal sector population and subsistence agriculture activities. People forget, particularly when asked in a single interview about items they may have sold or money they have received up to a year before. People may even be reluctant to disclose the full extent of their income for fear of taxation. Others may be reluctant to report income earned illegally (e.g. smuggling, stealing, and prostitution). Income could therefore be underestimated. For instance in 1969/70 socio-economic survey in Sri-Lanka, wages were found to have been underestimated by 30% whilst rent, interest and dividends were underestimated by as much as 78% (World Bank 2005).

Due to the drawbacks with income measurement, household consumption expenditure is often preferred in this kind of analysis. It is important to note that consumption expenditure also has its drawbacks. For instance households tend to under-declare what they spend on luxuries (e.g. alcohol, cigarettes) or illicit items (e.g. drugs, prostitution). The amount that a household said they spent on alcohol according to the 1972/73 household budget survey in the US was just half of the amount that companies said they sold (World Bank 2005). Another drawback is that, consumption choices made by households may be misleading (e.g. for instance if a rich household chooses to live simply, that does not mean that household is poor). It is also difficult to measure some

components of consumption including durables goods and it is very time consuming to record consumption in HH surveys. Despite these drawbacks, consumption expenditure is a better measure than income particularly in developing countries with a large informal sector. In the first place consumption expenditure smoothes out irregularities and so reflects long term average well-being. Secondly, consumption expenditure is obviously less understated than income because expenditure is easier to recall. Thirdly households, from empirical evidence are more able and willing to recall and report what they spent rather than what they earned. Finally consumption expenditure is also more closely related to a household's wealth (or "permanent income") under standard economic theory (Younger 1996). A detailed explanation of how this measure was obtained from the GLSS is provided below.

4.5.1 Consumption expenditure

The construction of the socio-economic measure in this study is based on household's[32] reported expenditure and consumption of food, housing and other non-food items. The measure also takes into consideration consumption from sources other than purchases from the market. This implies that consumption of own production (normally agricultural), imputed rents from owner-occupied housing units, transfers received in kind from any source and wage payments, are all considered in measuring the household consumption expenditure.

In estimating the total consumption expenditure of households, information relating to household expenditure for a period of twelve months was collected using a GLSS questionnaire. Responses that related to frequent purchases were collected using shorter recall periods. Food purchases from the market, consumption of food items produced by the households themselves and non-food items that are frequently purchased such as soap, beverages and tobacco are those normally collected for shorter recall periods. The GLSS survey had recall periods of 1 day, two weeks, one month and one year, depending on the expenditure item being recorded. It is important to note that recall bias can arise if people can not easily recall certain events being interrogated. Recall of information depends entirely on memory which can often be unreliable. The literature notes that 20% of critical details of a recognized event are irretrievable after one year from the

[32] A household is generally defined as a group of persons who eat together or share the same budget for household consumption and expenditure. The household was chosen as the unit of analysis because the household rather than the individual generally operates as an economic unit

occurrence and 50% are irretrievable after five years. Given the complex non-dependable process of storing incidents, it has been concluded that the accuracy of recall in humans significantly depends on the time interval between the event and the time of its assessment (Bradburn, Rips et al. 1987; Grosh and Glewwe 2000). Sections in the GLSS that capture information (frequently purchased and less frequently purchased, food and non-food items) used for the computation of consumption expenditure (SES) include section 2, 4, 7A, 7B, 7C, 7D, 8H, 9A, 9B, 10D and 12B.

4.5.2 Unit of analysis for consumption expenditure

The unit of analysis in the comprehensive health care financing incidence analysis and cross sectional case studies is the individual. However the data was collected at the household and the individual levels. A household is generally defined as a group of persons who eat together or share the same budget for household consumption and expenditure (Leibrandt and Woolard 1999). Given that individuals are not the same in terms of age and sex, an adjustment to the household was made for size and age structure through the application of an equivalence scale to SES in order to get per adult equivalent estimates (EQUITAP 2005).

In the simplest case of obtaining per capita or individual level estimates, we can simply use the number of household members to convert household consumption or expenditure into individual consumption or expenditure. However, while per capita household consumption or expenditure is a convenient measure of living standards, it ignores household economies of scale which arise because some goods and services that are consumed by the household have public good characteristics as they generate benefits for other household members beside the primary consumer. There may even be age or gender specific differences in consumption and expenditure needs. In particular, it is necessary to reflect the consumption needs of children relative to adults.

Due to these concerns, equivalence scales can be constructed as a function of the household size and demographic composition. There have been some attempts to come up with empirically based estimates of equivalence scales based either on a behavioral or subjective approach, but the more common approach is to simply define the number of *adult equivalents (AE)* in the household as:

$$AE_i = \left(A_i + \alpha K\right)^{\theta},$$

where A is the number of adults in the household, K is the number of children (0-14) α is the "cost of children", and θ determines the degree of economies of scale. The challenge is determining the appropriate values for α and θ. This depends to some extent on where (e.g. developed or developing countries) the study is being undertaken. Deaton and Zaidi (2002) have proposed values of 0.3 -0.5 for α in developing countries (higher values in developed countries) and near unity for θ given the large proportion of subsistence food consumption in developing countries. Thus, the equivalent calculation applied in this study is given as:

$$AE = \left(A + 0.5K\right)^{0.75}$$

Both the per capita and per adult equivalent estimates are applied in this study to see if there are differences in the results.

4.6 Financing mechanisms-calculations

4.6.1 Taxes (direct and indirect) incidence

An analysis of tax incidence is required in this study and this is so because the Ghanaian health care system like many other developing countries is significantly financed by direct and indirect tax revenue. The estimation of tax incidence[33] involves an analysis of the transmission of each separate tax from the place of statutory incidence to the place of economic incidence (burden) (Younger 1996; Martinez-Vazquez 2004). Economic incidence of a tax refers to where the reduction in real purchasing power falls, while the statutory incidence refers to who is legally required to pay the tax. It is the economic incidence that is of interest in any analysis of how taxes affect poverty and inequality.

The question of who bears or is affected by what health care payment is critical because those whom the law requires to pay a tax are not necessarily those who suffer the decline in purchasing power associated with the transfer of resources to the government. Rather, households whose demand and supply for products and factors of production are relatively elastic will generally shift the burden of the tax onto those whose demand and supply are inelastic (Martinez-Vazquez 2004)

[33] The basic methodology behind conventional models of tax incidence is to allocate tax burdens to different income groups, ordered from the rich to poor by deciles or quintiles of the population on the basis of a series of assumptions about who bears the final burden of taxes (Martinez-Vasquez 2004).

Consequently certain assumptions[34] have to be made about the tax-shifting element. These shifting assumptions facilitate the allocation of the burden of each health care payment to different income groups (Martinez-Vazquez 2004). In this study, we assume that the incidence of direct tax (mainly personal income tax in Ghana) falls on the legal tax payer and indirect taxes (import, fuel levy, VAT) fall on the consumer. The only tax that has less agreement in the literature about its incidence assumption is corporate tax (CT). The taxes identified and measured in this study included direct taxes (income tax and corporate tax), indirect taxes (VAT, National health insurance levy-NHIL, Fuel levy, import duty). These taxes make up over 94% of the total taxes revenue collected in Ghana. In calculating the incidence of tax payments, each tax payment per household was estimated from relevant sections of the GLSS and triangulated with actual revenue of this tax from the tax collector or Ministry of Finance. This file was then combined with consumption expenditure to work out the percentage of expenditure contribution to that tax. A detailed description of how each tax was measured or calculated is presented below.

4.6.1.1 Direct tax

Personal Income Tax:

Due to the unreliability of reported income tax incidence analysts often use data obtained from tax authorities to estimate income tax incidence (Younger 1996; Younger, Sahn et al. 1999; Borghi, Ataguba et al. 2009). In this analysis however we used GLSS data (secondary data) to extract and estimate the incidence of Personal Income Tax (PIT). Questions relevant for the calculation of the incidence of personal income tax were found in section 4, part A (employment and time use). The specific questions of relevance included question 9 "*what is the amount (including any bonuses, commissions, allowances or tips) received*?" The answer to this question was to specify the amount and time[35] unit. Another question of relevance was question 12 "*what was the status of [NAME] in this job*?" and the third question was question 13 "*For whom did [NAME] work for*?" These questions were used to identify households who were earners of income in the formal sector and by law eligible for pay-as-you-earn (PAYE) or income tax payers. Their gross incomes were calculated taking into consideration the time (daily,

[34] Conventional tax incidence studies compute tax incidence on the basis of annual data for income sources and expenditure patterns and also on the basis of several assumptions concerning how the different taxes are shifted to households either because they are consumers, producers or owners of factors of production (land, labour, and capital). These assumptions are known in the literature under different interchangeable names: "shifting assumptions" or "incidence assumptions," or "sources and uses side effects".

[35] Either income was daily, weekly, fortnightly, monthly quarterly or yearly.

weekly, fortnightly, monthly or annually) element or frequency of the income received as reported in question 9. The number of individuals falling into this category was 1415 and this represented about 15% of the individuals who were eligible to work (age 18 to 60). It is important to note that the reported income was after income tax since personal income taxes are normally deducted at source. Therefore it was necessary to work backwards to factor in the tax that had already been deducted to obtain the income before tax. This was done by applying the appropriate tax rates depending on the reported income of the individual. It is important to note that workers contribute 5% of their income for retirement (Price WaterHouse Coopers 2009) and this amount is collected by a social security organisation called SSNIT. This was therefore factored into the calculation. It is also important to note that dividends received and accrued on deposits and earnings in kind were excluded in the calculation. The tax rates were then applied to extract the personal income tax.

As in many countries, income tax rates are progressive in Ghana. In 2005 (the year of interest because we are using the GLSS of 2005), the rates ranged from 0% for income less than ¢1.8million[36], to 28% for income exceeding ¢72 million. The income tax rate was applied to calculate estimated gross taxable income. It is important to note that though tax rebates exist, people have little knowledge about them and the very few who qualify for rebates often do not have the patience to go through the arduous process associated with securing them. Even tax officials have difficulty making accurate calculations of the rebates. Consequently, rebates were not considered in the calculations. The weights in the GLSS were applied to the estimated PIT to extrapolate to the population as a whole.

The total income tax revenue (¢2,285.89 billion) for 2005 was obtained from the Ministry of Finance and the difference between the estimated PIT from the GLSS and that obtained from the Ministry of Finance was about 25% and this was allocated according to each household's share of estimated PIT.

[36]Inter-bank exchange rate = ¢9,072.12 to US$1.00 in 2005: ¢= the local currency of Ghana called cedis. In July 2007, there was redenomination of the currency and ¢10,000 became equivalent to GH¢1 (i.e. 10,000 cedis (¢) became 1Ghana cedis (GH¢).

Corporate tax:

There is a lack of consensus as to how corporate tax should be calculated. Different authors have assumed the burden or incidence of corporate tax differently (Younger 1996; Martinez-Vazquez 2004). The key elements of the debate regarding this tax have been whether increases will result in lower wages, lower retail earnings or higher prices? Some writers assume an equal share (50%) of burden for consumers and shareholders (mainly foreign owned in Ghana) and others assume a 10% burden on consumers and 90% burden on shareholders of the companies (Younger 1996; Martinez-Vazquez 2004).

In this analysis, those households who reported dividends were identified in section 11 of the Ghana Living Standard Survey on "Income and Miscellaneous income and expenditures". The question on the receipt of dividends was however lumped in with donations from churches and Institutions. It then became important to try to isolate the dividends and interest payments by matching the dividend question with shares ownership in section 12 part B "Assets and durable consumer goods". Based on this information, about 1% of households in the sample owned shares. However, only 0.4% of the total households in the sample reported dividends (¢0 to ¢5,000,000). The file was then merged with the consumption expenditure file to measure the distribution of dividends received across SES groups. We would expect shareholders to lie in the highest wealth groups. In Ghana, 84% of dividends received were amongst those in the top quintile. The distribution of dividend receipts by SES groups was captured through the following STATA command *"tabstat dividentpay [aweight=weights], statistics (sum) by (qunintile_r) columns (variables)"*.

The next stage of this calculation was to identify all goods manufactured by the companies responsible for over 70% of overall corporate tax payments as a basis for the allocation of tax where the burden is shifted to consumers. These are categorised first into food and non food and then into frequently purchased and less frequently purchased items and captured in section 9 of GLSS. The frequently purchased items were annualised by multiplying the expenditure by the number of weeks in a year (52) and dividing by the 10 weeks of records (gen expfreqpuritem_corp= s9bq1+s9bq2+ s9bq3+ s9bq4+ s9bq5 +s9bq6 +s9bq7+ s9bq8+ s9bq9 + s9bq10) obtained in the GLSS survey (gen annlxpefreqitem_corp = expfreqpuritem_corp*52/10). The less frequently purchased items (which is in annual form) were obtained for the previous 12 months. The

expenditure on the annualised frequently purchased items was then added (gen ExpHHitems_corp=s9aq2+ annlxpefreqitem_corp) to the less frequently purchased items to give total expenditure on the goods of those producers which were subject to corporate tax. The total company tax revenue was obtained from the Ghana Ministry of Finance for 2006 and then allocated to households based on their relative share of dividends received as well as their relative share of consumption of items whose producers were subject to corporate tax, taking into consideration the population weights.

As indicated in the literature review, the balance of the burden of corporate tax on consumers and producers can be pictured in so many ways depending on inter alia the elasticity of the good in question. This study considered just two scenarios. The first is when corporate tax is shared equally (50/50) between consumers and shareholders and the other where corporate tax is totally (0/100) shifted to consumers, given assumptions about the elasticity of items manufactured locally and the lack of substitutes for them. Another scenario is when corporate tax is totally shifted to shareholders but in the Ghanaian situation where shareholders are very few (about 0.4% of households), that scenario is not realistic. Therefore I considered only the first two scenarios. Corporate tax as a percentage of household consumption expenditure by quintile was calculated.

4.6.1.2 Indirect taxes

VAT and NHIL:

Value Added Tax (VAT) is a tax applied on the value that is added to commodities at each stage of the production and distribution chain. It thus forms part of the price the consumer pays for goods and services. In Ghana, VAT was introduced to replace the sales and service taxes then administered by Custom, Excise and Preventive Service (CEPS) and the Internal Revenue Service (IRS). VAT was introduced in the late 1990s and brought the sales and service taxes under one umbrella with a single positive rate to replace the multiple indirect tax regime. The current total rate of VAT collected is 15%. This includes a main VAT component of 10% with two additional sector specific components of 2.5% each. The first 2.5% is directly earmarked and allocated to the Ghana Education Trust Fund (GETFund). The other 2.5%, which was introduced in 2004 by act of parliament and called the National Health Insurance Levy (NHIL), is collected separately but on the same goods and services that VAT is covering (Price Water House Coopers 2008). This means that two separate incidence calculations must be undertaken:

Firstly the 10% VAT that is placed in the general tax revenue pool and the second the NHIL which is directly and fully allocated to funding health care.

The key issue to note in the VAT calculation is that VAT is assumed to be shifted to consumers. Further and something not unique in Ghana was the fact that strong opposition greeted the introduction of VAT which led to its withdrawal and subsequent reintroduction. Because of this, a wide range of essential goods and services, mostly consumed or patronised by low income earners, are VAT exempt.

To measure the incidence of VAT, household expenditure on goods and services that are not VAT exempt was extracted from section 9 part A and B of the Ghana Living Standard Survey (GLSS) data. This section contains all the data on consumption expenditure on food and non-food (frequently purchased and less frequently purchased items). To obtain the actual VAT payment for each household, the VAT rate was applied to the sum of expenditures on goods and services where VAT is applicable (note that 162 out of 260 frequently purchased and 96 out of 243 less frequently purchased goods and services were dropped because they are VAT exempt). The frequently purchased items identified as VATABLE were annualised and added to the consumption expenditure of less frequently purchased items. The standard VAT rate of 10% was applied to extract VAT payments such that the sum of the expenditure on VAT applicable goods was multiplied by 0.0909 (=10/110). Since NHIL is collected on the same goods and services as that of VAT, the same calculation was applied, but at a rate of 2.5%. The difference between VAT and NHIL is clearly that the entire NHIL goes to health.

Information on the actual VAT (¢5,238.60 billion) and NHIL revenue amounts (¢352.43 billion) was obtained from the tax collector. These were both higher than those estimated from the GLSS. While this was to be expected due to some level of under-reporting in the GLSS data, the shortfall might also be attributed to the VAT and NHIL levied on intermediate goods and services that are not consumed directly by households and for that matter not reported by households. Therefore, the difference was allocated *pro rata* with each household's share of estimated VAT and NHIL.

Fuel levy

In 2005 the fuel levy was second only to VAT in its contribution to total tax revenue, contributing 17%. In computing the incidence of taxes and other health care financing mechanisms, the fuel levy is important and critical because fuel affects all sectors of the economy and an increase or decrease in the levy often has multiplier effects on many sectors of the economy. The incidence of the tax on fuel was calculated by first identifying the users of the various types of fuel, both for public and private purposes (e.g. private vehicles versus public transport), in the GLSS. The key fuel types in Ghana are petrol, diesel and kerosene.

The GLSS has questions on direct expenditure on the various types of fuels. Engine oil and lubricants are coded 145 and 146 respectively and are captured in section 9, part A (less frequently purchased items). Kerosene is coded 188 and is one of the frequently purchased items. Other frequently purchased items include petrol (coded 202) and diesel (coded 203) which are also contained in section 9, part B.

In calculating expenditure on private transport and on fuel for other household uses, expenditure was extracted on engine oils and lubricants. We also extracted expenditure on kerosene, petrol and diesel. Given the fact that these are frequently purchased, they were annualised and added to the expenditure on engine oils and lubricants to obtain the annual household private expenditure on fuel.

In terms of expenditure on public transport, four questions were identified in section 9, part B (frequently purchased items) that were relevant to the calculation and these include: passenger transport by railway (coded 211), passenger transport by road (coded 215 and 216), passenger transport by sea and inland waterway (coded 220) and other purchased transport services (coded 224 and 225). These were extracted and annualised by multiplying the ten weekly records by 52/10.

The two data files (private expenditure on fuel and expenditure on public transport) were merged with the consumption expenditure files to get a single file. Important elements in these calculations are the prices of the various fuel types which we obtained from the Customs and Preventive services of Ghana. We also obtained the tax components of the various fuels. In generating total fuel levy for private use, we summed the household

private expenditure on the various fuel types (kerosene, petrol and diesel) divided these by the price per litre for each fuel type and then multiplied these by the tax rate for each fuel type. With public transport, we obtained the average cost of public transport per kilometre in 2005 which was about ¢500. We also know that an average of 4 litres of fuel lasts for about 25 kilometres, so the rate of fuel use per kilometre is 0.16. In generating the total fuel levy paid by public users, we obtained the sum total of household expenditure on public transport divided by public transport costs per kilometre, multiplied by the rate of fuel use per kilometre and by the average tax rate of fuel. To get the total fuel levy paid, we added the total tax component on public expenditure and that of the private expenditure taking the weights into consideration and then calculated the household fuel levy as a percentage of household consumption expenditure per quintile. Further, the total fuel levy contribution as provided by the Ministry of Finance was ¢3,762.95 billion. The difference between that and the estimated fuel levy from the GLSS was allocated *pro rata* to each household with their share of estimated fuel levy.

Kerosene levy

The incidence of fuel levy is calculated alongside kerosene, but since kerosene is generally consumed by the poor, it is important to examine its burden or incidence separately. Kerosene is often consumed more by those who do not have access to electricity. In remote areas, the high cost of kerosene can consume much of a family's income. The question on kerosene in the GLSS was extracted. As stated above under fuel levy, kerosene (coded 188) is one of the frequently purchased items and is captured in section 9, part A of the GLSS. Given the fact that kerosene is a frequently purchased item, it was annualised. Key elements required for the calculation included the prices of kerosene per litre and the tax component of kerosene and these pieces of information were obtained from the Customs and Preventive services of Ghana. The estimated kerosene levy was triangulated as was done in the other taxes.

Import duty

It is often assumed that import duties passed on to consumers have the same incidence as VAT (Martinez-Vazquez 2004). Import is the third largest contributor of taxes after VAT and income tax in Ghana. To calculate the burden of import duty, a number of steps were taken. First, the expenditure on imported commodities by households were identified and extracted from section 9 part A and B of GLSS. Secondly we obtained the 2005 import

duty (itemised) from the Custom, Excise and Preventive Service (CEPS). CEPS is the government organisation responsible for collecting import duty. The itemised import duty was allocated to households according to their consumption of the identified import commodities.

4.6.2 Non–tax health care financing incidence analysis

Apart from tax, health care in Ghana is also financed by Health insurance contributions made up of premiums (through DHIS) from the informal sector and pay roll deductions[37] (by SSNIT) to the National health insurance scheme as well as OOP payments. Before allocating the above health care payments to income groups by quintiles of households, it will also be important to provide the incidence assumption as to who bears the burden of each of them since the allocation of these health care payments will depend on these assumptions. The incidence of SSNIT contributions falls on formal sector workers and that of the DHIS contributions fall on those who are in the informal sector who are insured. OOP payments are also assumed to directly affect the consumer of the service. Below is a detailed explanation of how OOP payments and health insurance contributions were measured and calculated.

4.6.2.1 OOP payments

Most previous estimates of the incidence of OOP payments in developing countries have relied on data from small-scale health surveys that are not nationally representative and often restricted to rural areas (Sauerborn, Adams et al. 1996; Ranson 2002). We analysed data from the GLSS which has comprehensive information on health care and household consumption expenditure and which allow us to estimate the magnitude of the incidence of OOP payments in Ghana.

The variables of interest for the estimation of OOP payments incidence are captured in section 9 part A and B of the GLSS survey data. In section 9 part A (less frequently purchased items), we identified expenditure on health care such as all kinds of medical products, medical services including traditional healers, dental services, paramedical services and hospital services (ranging from code 116 to 132 in the GLSS 5 questionnaire). These were captured annually so there may be a problem of recall bias. However, part B of section 9 (frequently purchased items) captures comprehensive eekly expenditures, using a weekly diary, continually for 10 weeks. In this section, information

[37] 2.5% of formal workers' salaries go to the NHIF as their premium contributions to the NHIS

was captured that is relevant to the estimation of OOP payments including expenditures on health products such as pain killers, antibiotics, anti-malaria medicines, traditional Ghanaian drugs and other medical and pharmaceutical products excluding condoms. These range from code 193 to code 198 in the GLSS 5 questionnaire.

Expenditure on the frequently purchased health items were annualised by multiplying by the number of weeks in a year (52) and dividing by the 10 weeks of records obtained in the GLSS survey. The less frequently purchased health items (section A in section 9) were obtained for the past 12 months (which is collected annually as stated earlier). The expenditure on the annualised frequently purchased health items was then added to the less frequently purchased items to give total OOP health expenditure. It should be noted that as in many countries, OOP spending is a significant proportion of health care financing in Ghana. The National Health Accounts (NHA) estimates in Ghana for 2006, using 2002 figures, revealed that Ghana's OOP spending was 24% of total health spending (GHS 2006), although other literature (Leive and Xu 2008) suggests an even higher rate (about 48%) for the same period. The key thing to note however is that OOP payments are generally a significant part of health care spending in Africa with Burkina Faso, Ethiopia and Zambia having OOP spending of 54%, 35% and 29% respectively (Leive and Xu 2008).

For triangulation, we obtained OOP estimates from the NHA (¢570,059,068,095) and compared these with the GLSS survey weighted estimates (¢1,556,220,276,450.20). The latter was 2.7 times the former. One explanation for the difference could be the fact that NHA figures were for 2002 and the GLSS figures for 2005. Another reason could be that the NHA underestimated the true value of OOP expenditure on health care. However, when we inflated the NHA figure using an average inflation rate of 15% over the four years, the two sets of estimates almost coincide. Using the GLSS estimate we obtained the share of each household's consumption expenditure per quintile.

4.6.2.2 Health insurance contribution

Comprehensive data on health insurance contributions including premium and registration payments largely by the informal sector, was collected through the SHIELD household survey. Information on issues such as amount of premium and registration fees paid, population covered by health insurance, reasons for not registering, types of health schemes, expected benefits from the scheme and the proportion of the population that

benefited from the scheme among others, were also collected through this survey from the six districts in 2008.

The premium component of the health insurance contributions paid by the informal sector directly to the District health insurance schemes is by law (Act 650) graduated. It ranges from ¢72,000 to ¢480,000 (US$8.00 to US$53.00) (MOH 2004; Ministry of Health 2006). The graduation was designed in such a way that the poor should pay the lowest rate and the higher rates should be paid by the rich. However, in reality it appears that the premium payment generally is flat which makes it all the more important to document the distribution of the burden of this payment mechanism across the population as a whole.

The health insurance contributions (premium and registration fees) were summed, weighted and saved as a file called "insurance_informal". To get the total national health insurance contributions, I needed to add the contribution from the formal sector. As mentioned earlier, 2.5% of the formal sector contribution to SSNIT is deducted for the national health insurance. The Social Security and National Insurance Trust (SSNIT) is the organization managing pensions in the country and so they have information on the value of formal workers deductions paid to the national insurance scheme per year. Therefore, I obtained the total amount that SSNIT paid to the NHIS on behalf of formal workers in 2008 and allocated this to individuals with formal sector workers within households based on their reported income. This was also saved as a file called "insurance_formal". The GLSS was used to predict the consumption expenditure variable (see Box 4.1) in the SHIELD household survey and saved as a file called "con_exp"

Box 4. 1: Predicting consumption expenditure variable in the SHIELD survey

Given that the GLSS was conducted about a year after the launch of the National Health Insurance scheme, the information collected on the status of the NHIS will have changed since that time. There is also the need to collect information on factors affecting enrolment in the NHIS. For these reasons there was a need to conduct the SHIELD survey. Since that survey did not capture very comprehensive consumption expenditure (certainly not as comprehensive as in the GLSS), this variable (which is a proxy measure of socio-economic status or ability to pay as required for the computation of financing incidence) must be linked from the GLSS to the SHIELD survey. In the SHIELD survey there were variables that sought information on frequent spending per month. These included expenditure on health care, clothing, utilities, transportation, fuel for cooking and household use, household utensils and other frequently purchased items. The assumption was made that these variables are analogous to the frequent spending variables in the GLSS data. The expenditures on frequently purchased items, age of the head of the household and location (rural/urban and region) of the household were identified and used to predict the total consumption expenditure through a log regression model [(reg link lfreqexp age1 age2 age3 reg1-reg3 urban [pw=weight]]. The correlation of the prediction was about 80%. The prediction [predict consexp1, xb] was based on the GLSS and coefficients obtained from this regression were used to predict the consumption expenditure in the SHIELD survey. The total household consumption expenditure variable was then generated by taking the exponential of the linear prediction plus the Duan Smear correction factor [gen consexpend= exp (consexp1+duan_smear)]. (The Duan Smear correction factor (Duan N 1983) is the exponential of the root mean square [sca duan_smear= (((`e(rmse)')^2)/2)].) The consumption expenditure so predicted in the SHIELD survey is what is used to calculate the incidence of health insurance contributions. These are then compared with the values from the GLSS

The two files (insurance_informal and insurance_formal) were merged with the household consumption expenditure file to obtain a single file which enabled the calculation of the incidence for health insurance contribution.

For all the financing mechanisms, Table 4.3 provides a summary of each type of financing mechanism and the quantification technique.

Table 4. 3: Financing incidence analysis estimation techniques

Component	Share in Total Health care financing	Incidence assumption	Source of Data	Rates[a]	Computation technique
Taxes	**47%**				
Personal Income Tax	5.2%	Legal tax payer	GLSS, 2005/2006	5%-20% depending on income level. 0% ¢1,800,000. Rebates is not a common practice in Ghana	Apply the appropriate tax rate and tax thresholds on the gross taxable income (salaries and wages received, income from business or professional practice/activities, part of dividends and interest received and/or accrued on deposits) of working age individuals within each household within the taxable range
Corporate Income Tax	7.1%	Shareholders and consumer	GLSS, 2005/2006	Rate is 28% and this is paid quarterly in the case of large companies.	Apportioning the total corporate tax receipts based on the Ministry of Finance data to households based on the tax shifting assumptions. Assumption of tax shifting includes certain percentage borne by shareholders (the GLSS collected information on those who receive dividends) and the rest by households through consumption. Two tax shifting scenarios range was assumed in this study. The first was equal (50:50) tax burden shared between consumers and shareholders/capital owners and the second was the assumption that the full (100%/ burden of falls on consumers.
Value Added Tax (VAT)	11.3%	consumer	GLSS, 2005/2006	15% on standard rate goods and services	The VAT rate is applied to expenditure of goods and services that are standard rated excluding the zero-rated and exempted goods (since 2.5% is specifically earmarked fund for education and 2.5% for health services, 10% was considered in the calculations)
National Health Insurance Levy	2.4%	consumer	GLSS, 2005/2006	2.5% on standard rated goods and services	The same distribution across households as VAT but at 2.5%. NHIL rate is applied to expenditure of goods and services that are standard rated excluding the zero-rated and exempted goods (the same goods and services as VAT).
Import Duty	8.0%	consumer	GLSS, 2005/2006	Varied depending on item	Comprehensive list of import duty and amount received on duty for each item was obtained from CEPS and these amounts were allocated to households based on reported consumption of these imported items from GLSS

Component	Share in Total Health care financing	Incidence assumption	Source of Data	Rates[a]	Computation technique
Fuel Levy	8.5%	consumer	GLSS, 2005/2006	¢716.72/litre for petrol ¢429.96/litre for Diesel ¢353.88/litre for kerosene	Since fuel is consumed by households (for both personal and public transport) as well as corporate users, estimation involved a process of generating the component attributable to public transport users, users of private transport and those attributable to users in businesses
Other	4.3%		GLSS, 2005/2006	Includes taxes on cigarette, drinks, stamps, airport departures, and unidentified levies.	Not calculated (small share of total revenue)
Insurance	**5%**				
National Health Insurance Scheme	5%	payer	SHIELD household survey 2008[b]		Total national health insurance contributions is made of premiums contributions of the informal sector and pay roll deduction of formal sector workers
Out-of-pocket payment	**48%**	**payer**			
OOP payments	48%		GLSS, 2005/2006		Comprehensive household expenditure on medicines, consultations, preventive and curative treatments, procedures excluding transportation were summed up

[a] This applies to the taxes and are based on the 2005/2006 assessment year

[b] This was my own survey that was collected to complement the GLSS data and to answer key questions on the NHIS

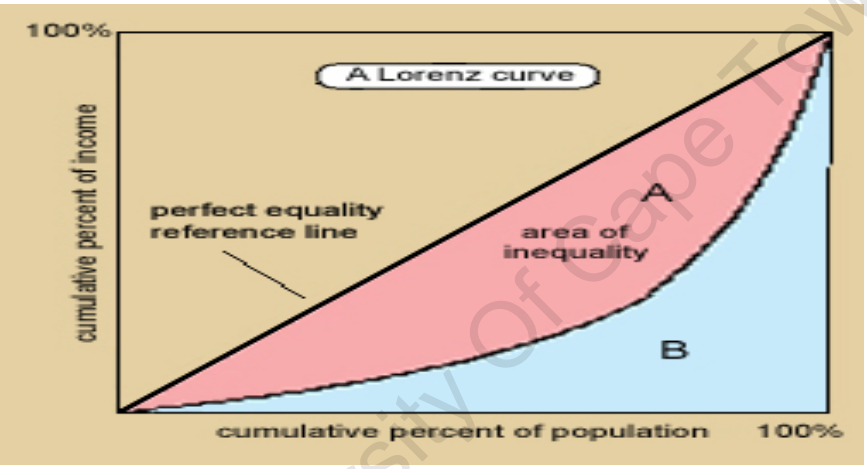
NB: GLSS-Ghana Living Standard Survey

*Inter-bank exchange rate = ¢9,072.12 to US$1.00 in 2005

4.7 The Kakwani index for measuring progressivity of health care financing

In addition to estimating contributions to each financing mechanism as a percentage of consumption expenditure in each quintile, it was necessary to calculate the incidence of financing using the concentration index and the Kakwani index to establish whether a health care financing mechanism is progressive, regressive or proportional relative to ability to pay (ATP) or SES. The Kakwani index used in this study enables an illustration of the degree of relative progressivity of each health care financing mechanism and the overall health care financing incidence (Kakwani 1977). The Kakwani index is defined as twice the area between the Lorenz curve[38] for gross income $L_{X(p)}$ (Figure 4.2),

Figure 4. 2: Lorenz curve



and the concentration curve for health care payments, $L_{T(p)}$ (the p in parentheses here indicates the person's or household's rank in the gross income distribution) (Kakwani 1977; Cissé et al. 2006). $L_{X(p)}$ shows the relationship between the cumulative percentage of income and the cumulative population, where the individuals (or households) are ranked according to their income or consumption (expenditure), whilst $L_{T(p)}$ is formed by plotting the cumulative proportion of the population (ranked by income or consumption) against the cumulative share of health care payments (Kakwani 1977). Thus, we have:

[38] The Lorenz curve is a graphical device used to demonstrate the equity of distribution of a given variable such as income, asset ownership or wealth.

$$\pi_K = 2\int_0^1 [L_{X(P)} - L_{T(P)}]dp$$

$$\pi_K = 2\int_0^1 [-L_{T(P)}]dp - 2\int_0^1 [p - L_{X(P)}]dpe$$

$$\pi_K = C_T - G_T$$

The degree of progressivity of the health care financing system can be assessed by calculating the difference between the concentration coefficient of health care payments, C_T and the Gini[39] coefficient of gross income, G_T. The value of π_k ranges from -2 to 1 (Kakwani 1977). A positive Kakwani index ($\pi_k > 0$) indicates the health care financing system is progressive, so that the Lorenz curve of income lies above the concentration curve of payments, and vice versa if it is regressive ($\pi_k < 0$). A Kakwani index of zero ($\pi_k = 0$) indicates proportionality of health care payments and thus the Lorenz and concentration payments curves would coincide (Wagstaff and van Doorslaer 1993; Cissé et al. 2006). The statistical significance of the Kakwani index was also calculated. In other words the significance of the difference between the concentration index and the Gini coefficient was calculated and presented in a summary table (Table 5.15).

In addition, the Kakwani index for total health care payments was calculated as the weighted average of the indices for the individual components of finance. That is,

$$\pi_K = \sum_{K=1}^{K} w_K \pi_K$$

Where π_k is the Kakwani index for finance source $_k$ and the weight w_K is the proportion of total expenditure on health care accounted for by that source (EQUITAP 2005).

4.8 Estimating catastrophic health care payments

According to the World Health Organisation, one conception of fairness in health care financing is whether or not households and individuals are protected from catastrophic health care expenditure (World Health Organization 2005). Indeed there is considerable worldwide interest in fairness in health care financing (World Health Organization 2000;

[39] The Gini index measures the extent to which the distribution of income among individuals or households deviates from a perfectly equal distribution. A Gini index of zero measures perfect equality while an index of 100 implies perfect inequality

Limwattananon, Tangcharoensathien et al. 2005; McIntyre, Garshong et al. 2008; O'Donnell, van Doorslaer et al. 2008; Yip and Hsiao 2008; Mooney 2009; Yates 2009). Households without comprehensive health insurance or tax financing cover such in China and the USA face the risk of incurring large expenditure when a household member falls ill and that is catastrophic if health care expenditure is too large relative to the available resources to the household (O'Donnell, van Doorslaer et al. 2008; Yip and Hsiao 2008). It should be noted however that large health expenditure to a household does not actually mean that the household is making catastrophic health care payment. It is only catastrophic when the health care expenses *disrupt* the household living standards with regards to the purchase of other essential non-medical goods and services (Xu, Evans et al. 2003; O'Donnell, van Doorslaer et al. 2008). According to O'Donnell and others the best way to measure catastrophic health expenditure is by the use of longitudinal data which will allow for observation over time and how living standards of households have been disrupted through health shocks (O'Donnell, van Doorslaer et al. 2008). However, in the absence of such longitudinal data, cross sectional data (usually for a year) is used in which case some approximation of the disruptive effect of health care expenditure on material living standards must then be made (Xu, Evans et al. 2003; Wagstaff 2006; O'Donnell, van Doorslaer et al. 2008).

A more popular approach, which is applied in this study, is to define medical spending as catastrophic if it exceeds some fraction or threshold of household income or total expenditure in a given period of time (which is usually one year). This can be assessed using cross sectional data. However, there is no consensus in the literature on the threshold proportion of household expenditure (Xu, Evans et al. 2003). However, thresholds of 10% and 40% (for total expenditure and non-food expenditure respectively) are most often cited as representing the points at which the absorption of household resources by spending on health care is considered to impose a severe disruption to living standards (O'Donnell, van Doorslaer et al. 2008). A major limitation of these thresholds is that they are arbitrary and is obviously a matter of judgement. It is therefore best to present results for a range of values for the thresholds (e.g. 5%, 10%, 15%, 20%, 25%, 30% 35%, 40%) and readers can choose where they prefer to give more weight.

The assumption in this study (and which is supported by the literature) is that households have total gross expenditure of x and expenditure on food as $f(x)$. Catastrophic threshold

is defined to be z_{cat} where z_{cat} is y% of *x*. Wagstaff and van Doorslaer (2003) have proposed the following indices in their studies. These indices are used in this study to measure and explain both catastrophic health care payment and the impoverishment effect of health care payment (O'Donnell, van Doorslaer E et al. 2008).

4.8.1 Catastrophic Payment Headcount Index: H_{cat}.

This is defined as the percentage of individuals in the sample population whose healthcare expenditures as a proportion of their income exceed the threshold $z_{cat.}$ Let T_i be the healthcare payment of the i^{th} household, *x* the total household expenditure and *x-f(x)* is household non-food expenditure(O'Donnell, van Doorslaer et al. 2008). Catastrophic payment is incurred if $E = 1\left(\frac{T}{x} > z_{cat}\right)$ or $E = 1\left(\frac{T}{x - f(x)} > z_{cat}\right)$ where *T* is the OOP payments, *x* total household expenditure; *f(x)* is household food expenditure and z_{cat} is some threshold. The value of z_{cat} is subjective and it should vary depending on if *x* or *x-f(x)* is the denominator.

Then the incidence of catastrophic or catastrophic payment headcount index is defined as:

$$H_{cat} = \frac{1}{N}\sum_{i=1}^{N} E_i = u_E \quad \text{---------- (4.5)}$$

Where: N = sample size

The difficulty with this measure is that it fails to capture the height above which individuals exceeding the threshold actually exceed it.

4.8.2 Catastrophic payment gap index, G_{cat}:

This measure captures the average degree by which health care payments (as a proportion of income) exceed the threshold $z_{cat.}$ In other words it is defined as the amount of expenditure by which (given $E_i > 0$) E_i actually exceeds the threshold divided by the sample size. Formally then, the catastrophic payment gap may be specified as:

$$G_{cat} = \frac{1}{N}\sum_{i=1}^{N} O_i = u_O \quad (\text{For } O_i > 0) \text{---------- (4.6)}$$

$$O_i = T_i / x_i - z_{cat}$$

Where u_O = the mean of O_i. The mean positive gap (MPG_{cat}) is given as

$$MPG_{cat} = \sum_{i=1}^{N} O_i / \sum_{i=1}^{N} E_i = u_O / u_E \text{ ---------- (4.7)}$$

Equation 4.7 can be expressed as

$$u_O = u_E * MPG_{cat}$$

Thus, the overall mean catastrophic 'gap' equals the fraction with a positive gap times the mean positive gap.

According to Wagstaff and van Doorslaer (2003) the difficulty with the approaches outlined above is that they are blind as to whether it is the poor or the better-off individuals who exceed the threshold (Wagstaff and van Doorslaer 2003; O'Donnell, van Doorslaer et al. 2008). Most societies in the world including Ghana will care more if it is an individual in the lowest quintile whose health care spending (as a share of income) exceeds the threshold than if it is a rich individual. One way of getting around this issue is to see how the proportions of those exceeding the threshold vary across the income distribution. This can be done formally using the concentration index for E_i, which can be defined as C_E (see earlier discussion on the calculation of concentration indices). A negative value of this indicates a greater tendency for the poor to exceed the payment threshold, whilst a positive value indicates a tendency for the better-of to exceed the threshold (Xu, Evans et al. 2003).

Again a difficult arises. As Wagstaff and van Doorslaer (2003) noted, the headcount (u_E) and the concentration index (C_E) could move in different direction over time (Wagstaff and van Doorslaer 2003). The u_E may be higher among the poor than in among the rich in one region of country but the C_E could be lower among the poor than the rich in another region. In such circumstances, it will be useful to have an index trading off the two dimensions (Wagstaff and van Doorslaer 2003; Xu, Evans et al. 2003; Ekman 2007; Limwattananon, Tangcharoensathien et al. 2007; van Doorslaer, O'Donnell et al. 2007; O'Donnell, van Doorslaer et al. 2008). This can be done by constructing a weighted version of the headcount that takes into consideration whether it is the better-off or mostly the poor people who exceed the threshold.

4.8.3 Weighted Catastrophic Payment Head Count Index, W^{E}_{cat}.

W^{E}_{cat} weights the variable indicating whether a person has exceeded the threshold, E_i by the individual's rank in the income distribution. If $W^{E}_{cat} > H_{cat,,}$ then it is the poor who mostly exceed the threshold but if $W^{E}_{cat} < H_{cat,}$ then the incidence of catastrophic spending is concentrated on the rich (Wagstaff and van Doorslaer 2001; Xu, Evans et al. 2003). To obtain an index for weighted catastrophic payment head count, define:

$$w_i = 2\left[\frac{N+1-r_i}{N}\right]$$

Where w_i (weight) is equal to 2 for the most disadvantaged person and this declines to 2/N for each person step up through the income distribution, and reaches 2/N for the least disadvantaged person. $r_i = \text{i}^{\text{th}}$ household's absolute rank in the income distribution for $1 \le r_i \le N$. Where $r_1 < r_2 < r_3 < ... < r_N$ reflects the fact that households are ranked in ascending order of income. Weighting the E_i by $w_{i,}$, I obtain

$$W^{E}_{cat} = \frac{1}{N}\sum w_i E_i \text{----------} \quad (4.8)$$

Given the weighting used in (4), the index W^{E}_{cat} can be written as

$$W^{E}_{cat} = u_E * (1 - C_E) \text{----------} \quad (4.9)$$

Equation 4.9 is simply the catastrophic payment headcount multiplied by the concentration index. If those who exceed the threshold tend to be poor, the concentration index C_E will be negative and this will raise W^{E}_{cat} above $u_{E.}$ Thus, the catastrophic payment problem is more complex than simply looking at the fraction of the population exceeding the threshold, since it overlooks the fact that it tends to be the poor who exceed the threshold and visa versa when C_E is positive (Xu, Evans et al. 2003; Limwattananon, Tangcharoensathien et al. 2007).

4.8.4 Weighted Catastrophic Payment Gap Index, $W^{G}_{cat.}$

This measures the tendency of large excesses (overshoot) of catastrophic payments to be concentrated among the worst-off. If $W^{G}_{cat} > G_{cat,}$ then large excesses tend to be concentrated among the poor. If $W^{G}_{cat} < G_{cat,}$ large excesses tend to be concentrated among the well-off. The index for measuring the extent of large excesses that are concentrated among the poor is the weighted gap index (O'Donnell, van Doorslaer E et al. 2008). It is defined as:

$$W_{cat}^{G} = \frac{I}{N}\sum w_i O_i \quad \text{---------- (4.10)}$$

Given the weighting used in (6), the index W^{G}_{cat} can be written as

$$W_{cat}^{G} = u_O * (1 - C_O) \quad \text{---------- (4.11)}$$

Where the C_O is the concentration index of the overshoot or excesses in catastrophic payment gap. A negative C_O means a tendency for large excesses to be concentrated among poorer individuals. Equation 4.11 has the same logic as Equation 4.9. Below is a summary of the different techniques of catastrophic payments.

Table 4. 4: Summary of different techniques of catastrophic payments

	Types of measures	Techniques of measurements	Limitation
1	Catastrophic Payment Headcount Index: H_{cat}	-Healthcare expenditures as a proportion of their income exceed the threshold z_{cat}	it fails to capture the height above which individuals exceeding the threshold actually exceed it
2	Catastrophic payment gap index, $G_{cat:}$	-Measure captures the average degree by which health care payments (as a proportion of income) exceed the threshold z_{cat} .	-Blind to whether it is the poor or the better-off individuals who exceed the threshold
3	Weighted Catastrophic Payment Head Count Index, W^{E}_{cat}.	-Weighted version of the headcount that takes into consideration whether it is the better-off or mostly the poor people who exceed the threshold.	-Catastrophic payment problem is more complex than simply looking at the fraction of the population exceeding the threshold,
4	Weighted Catastrophic Payment Gap Index, $W^{G}_{cat.}$	-Measures the tendency of large excesses (overshoot) of catastrophic payments to be concentrated among the worst-off	-Blind as to how far catastrophic payment causes hardship to individuals or households

4.9 Estimating the Poverty Impact of Healthcare payments

The difficulty that still remains with catastrophic payment is that the approach is blind as to how far catastrophic payment causes hardship to individuals or households. An alternative perspective is that of the impoverishment effect measure (O'Donnell, van Doorslaer et al. 2008). The main focus of this approach is that no one ought to be pushed into poverty or deeper into poverty because of health care expenses. Impoverishment can result from incurring medical expenditure as this can be at the expense of meeting basic needs such as food, clothing and shelter. However these forms of impoverishment are not normally captured by the standard approach to the measurement of poverty, which compares total household expenditure with a poverty line that is not sensitive to highly variable health care need.

4.9.1 Poverty line

Measuring the impoverishing effects of health care costs requires the establishment of a poverty line. Two absolute poverty lines developed and used by the World Bank-(international) $456.25 (¢1,697,519.19) and $912.50 (¢3,395,038.38) per capita per year at 2005 purchasing power parities (PPP) or $1.25 and $2.50 per capita per day were applied. These are a revised version of the 1993 purchasing power parities of $1.08 and $2.15. The $1.25 (lower poverty line) is the median of the ten lowest poverty lines operational in a sample of low-income countries. This represents a very low living standard that is often referred to as extreme poverty. Individuals whose total expenditure falls below this line are considered to be in extreme poverty, since even if they allocated their entire budgets to food, they would not be able to meet their basic food requirements. The implication is that, a Ghanaian is considered extremely poor if he/she spent less than ¢4,650.74 a day. This does not make explicit allowance for health care needs. The higher or upper poverty line is simply twice the lower one and is intended to roughly correspond to the threshold at which someone would be considered poor in middle–income countries. However it is still used for low-income countries since it still represents a very low living standard that is unlikely to be sufficient to cover health care needs. Since health care needs are not explicitly reflected in these low absolute poverty thresholds, it is consistent to compare them with household resources net of out-of-pocket payments.

4.9.2 Poverty headcount index

This measures the proportion of population that is poor. For the purpose of this study it is divided into two: the pre-payment and post-payment poverty indices. Let x_i be individual *i's* pre-payment income. Then define $P_i^{pre} = 1$ if $x_i < z_{pov}^{pre}$ (Wagstaff and van Doorslaer 2003; Xu, Evans et al. 2003). The pre-payment poverty headcount is equal to

$$H_{pov}^{pre} = \frac{1}{N}\sum_{i=1}^{N} P_i^{pre} = u_{p^{pre}} \text{ ---------- (4.12)}$$

Where N is the sample size

4.9.3 Poverty gap index

This index indicates the percentage of the poverty line necessary to raise an individual who is below the poverty line up to that line. It gives the depth to which individuals who fall below the poverty line are actually below it. Denote g_i^{pre} the pre-payment poverty gap. This is equal to $x_i - z_{pov}^{pre}$ if $x_i < z_{pov}^{pre}$, and zero otherwise (Xu, Evans et al. 2003; O'Donnell, van Doorslaer et al. 2008). The average pre-payment poverty gap is defined as

$$G_{pov}^{pre} = \frac{1}{N}\sum_{i=1}^{N} g_i^{pre} = u_{g^{pre}} \text{ ---------- (4.13)}$$

4.9.4 Normalized poverty gap index

This index measures the severity of poverty among the extremely poor. It is the weighted sum of the poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. This index gives more weight to observations that fall well below the poverty line. The normalized pre-payment poverty gap is defined as

$$NG_{pov}^{pre} = \frac{G_{pov}^{pre}}{z_{pov}^{pre}} \text{ ---------- (4.14)}$$

4.9.5 Normalized mean positive gap

$$MPG_{pov}^{pre} = \sum_{i=1}^{N} g_i^{pre} / \sum_{i=1}^{N} P_i^{pre} = u_{g^{pre}} / u_{p^{pre}} \text{ ---------- (4.15)}$$

From Equation 4.15 we have

$$u_{g}^{pre} = u_{p}^{pre} * MPG_{pov}^{pre}$$

This means the average (pre-payment) poverty gap equals the fraction with a positive gap multiplied by the mean positive gap (O'Donnell, van Doorslaer et al. 2008).

Note that to get the indices for post-payment which is analogous to the pre-payment indices, we replace the pre-payment poverty line z_{pov}^{pre}, by post-payment poverty line z_{pov}^{post} and all other superscripts 'pre' by the superscript 'post'

The difference between the relevant prepayment and post-payment indices are taken as the measures of poverty impact of out-of-pocket payments and these are:

1. *Headcount:* $PI^{H} = H_{pov}^{Post} - H_{pov}^{pre}$
2. *Poverty gap:* $PI^{G} = G_{pov}^{Post} - G_{pov}^{pre}$
3. *Normalize poverty gap:* $PI^{NG} = NG_{pov}^{Post} - NG_{pov}^{pre}$

4.10 Analysis of Factors affecting FIA (insurance)

Analysis of the qualitative data, focused on emerging themes such as strategies for the expansion of the NHI scheme. This was done after all the transcribed interviews were reviewed. Analysis was done manually using appropriate codes and also on sub-themes such as

- Contribution rates and frequency of payment
- Perception of the benefit package
- Exemption criteria and mechanisms,
- Perception of quality of care,
- The general satisfaction with the NHI
- Challenges of the NHI.

These were the key issues that emerged as factors affecting the people's willingness to enroll or renew their membership with the NHIS (see conceptual framework). The unit of

analysis for the qualitative arm of the study was the individual or group's view based on these emerging themes and sub-themes.

4.11 Ethical considerations

The study adhered to the Helsinki Declaration and so the protocol of the study was reviewed and approved by the Ethics committees of the Faculty of Health Science of the University of Cape Town and the Ghana Health Service before commencement of the study.

4.11.1 Human use

The main human involvement stems from the household survey and qualitative studies which involved interviews of household heads, community members and officials of the NHI at the district and at the headquarters.

4.11.2 Consent procedures

Permission (through community entry) was sought from the chiefs and elders of the study areas for the household surveys. Individual written consent (see Appendix E) was sought in the case of the household level interviews (household heads), FGDs (community members) and in-depth interviews (district and headquarters officials of NHI). Interviewees were informed of the purpose of the study, and that they were free to participate or not to participate in the study. They were also informed that they were free to withdraw from the study at any stage. The consent forms were available in the language of the interviewee.

4.11.3 Risks and benefits to the participants

No physical or mental risks were posed in the course of conducting the study except for the 'invasion' of privacy as a result of disclosure of information such as consumption expenditure, household asset ownership and other socio-economic and demographic variables. Participants were reminded that the data was going to be aggregated in the analysis and there was not going to be disclosure of an individual's identity in the data to a third party.

The benefits of being part of the study were that information gathered through this study will contribute to an appropriate and equitable universal health care financing system for the people of Ghana.

4.11.4 Confidentiality

Data collected from each study participant was kept in a binder and data forms containing personal identifiers were kept in locked cabinets and accessible only to the researcher. With the secondary or electronic data, apart from signing an agreement with the Ghana Statistical Service to use the data only for the purpose for which it was obtained, names and other identifiers of individuals or households were removed from the data before analysis.

4.11.5 Plan for utilization of results

Apart from submitting the thesis to the University of Cape Town, brief copies of the report will be made available to the other stakeholders (e.g. Ghana Health Service and WHO) involved in the study and the results will be published in peer reviewed journals. The results of the study will also be disseminated at the community, district, and the national levels.

Chapter Five: Progressivity of health care financing

5.0 Introduction

This chapter provides critical, in-depth estimations of the incidence of the various health care financing mechanisms in Ghana. These are based on living standard measures of per capita and adult equivalent household consumption expenditure. Detailed calculation of all direct taxes (personal income tax and corporate tax), indirect taxes (VAT, fuel levy and import duty) and out-of-pocket payments using the GLSS survey data (conducted in 2005/2006 with a sample of 8687 households) are presented. With respect to National Health Insurance (NHI) however, the SHIELD[40] household survey conducted in 2008 is used because, at the time the GLSS was conducted, the level of NHI coverage was low (less than 9%).

5.1 Taxes (direct and indirect)

The primary aim of taxation is to raise revenue for the government to meet its spending requirements on, for example, health and education. This is the case in both economically advanced economies like the USA and Japan and developing countries such as Ghana. In addition to generating revenue, taxation provides a means for promoting economic and social policies. The government uses taxation to exercise control over the economy as a whole. By adjusting taxes and tax rates, the government is able to influence consumption, savings and investment in the economy.

According to Adam Smith[41], an excellent system of government can be created based on certain principles that are not only established in the country but adhered to. To him, such principles should be used as a guideline for creating systems of taxation as well. He identified four principles of taxation and these are what is popularly known as the "canons of taxation". These include equity, certainty, economy and convenience. Equity in taxation warrants that people's taxes should reflect their ability to pay and hence that the amount of tax paid should be higher the higher the income. With regard to certainty, the tax which each individual is bound to pay ought to be certain and not arbitrary. According to Adam Smith, the time and manner of payment as well as the quantity to be

[40] SHIELD: Strategies for health insurance for equity in less developed countries. http://web.uct.ac.za/depts/heu/SHIELD/about/about.htm

[41] http://www.bized.co.uk/virtual/economy/policy/tools/income/inctaxth1.htm, accessed on 17/11/2009

paid ought to be clear to the contributor and to every other person. The economics of taxation also requires that every tax ought to be designed so as both to take out and to keep out of the pockets of the people as little as possible relative to what it brings into the public treasury. In other words, the collection of tax should involve as little expense as possible. Finally, a tax needs to be convenient. This principle denotes that every tax, whether a direct or indirect tax, ought to be levied at the time or in a manner, in which it is most likely to be convenient for the contributor to pay. In Ghana, as in other countries, taxes are classified into two main types, direct and indirect.

5.1.1 Direct taxes

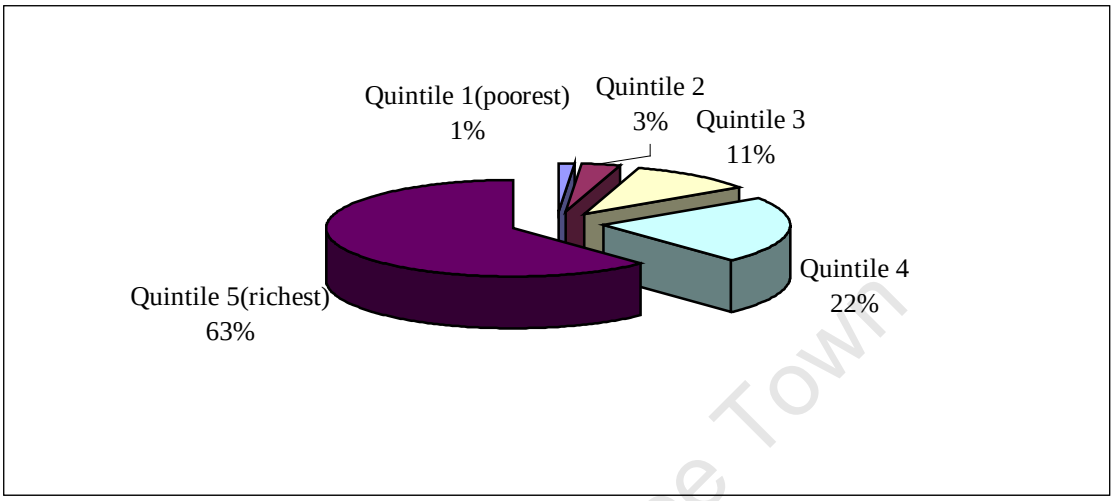
Direct taxes are those paid directly to the revenue authorities. The main direct taxes in Ghana are Personal Income Tax (PIT) and Corporate Tax (CT). In Ghana, as is the case in many other developing countries, direct taxes represent between 28% and 32% of total tax revenue. However, in most developed countries (e.g. the United Kingdom, United States of America, Japan and Germany), direct taxes contribute over 70% of the total tax revenue (Institute of Statistical Social and Economic Research 2008; O'Donnell, van Doorslaer et al. 2008). The reasons for this difference between developing and developed countries are not hard to find. Ghana generally has low formal employment level and as a result a narrow tax base. There is a lack of large scale private companies and also a large informal sector, including subsistence agriculture and petty traders with no proper record keeping on incomes. Also important is the widespread tax evasion in Ghana and other developing countries. A key question that this chapter addresses is "what is the burden of these taxes on individuals and households and especially on the poor?" The results of the estimates of the burden or incidence of these two direct taxes are outlined below. CT, as indicated, is a direct tax on companies and corporations. However, several assumptions about tax shifting (see methods chapter) have been adopted which then mean that it appears as a form of indirect tax on the economic agents who in the final analysis bear the burden of that tax.

5.1.1.1 Personal income tax (PIT)

Figure 5.1 shows the percentage share of PIT payments across the different SES groups. As expected, personal income tax payments are concerntrated among the rich (i.e. in quintiles 4 and 5) who contribute over 80% of total personal income tax. This is due to the tax schedule. Tax rates for the 2005/2006 year are graduated such that the higher the income the higher the personal income tax rate. People with an annual income of less

than ¢1.8[42] million were exempted from paying income tax. With an income of between ¢1.8 million and ¢4.8 million cedis, the tax rate was 5%; between ¢4.8million and ¢27.6 million 10%; ¢27.6 million and ¢36 million cedis it was 15%; between ¢36 million cedis and ¢72 million cedis, 20%; and above ¢72 million cedis 28%.

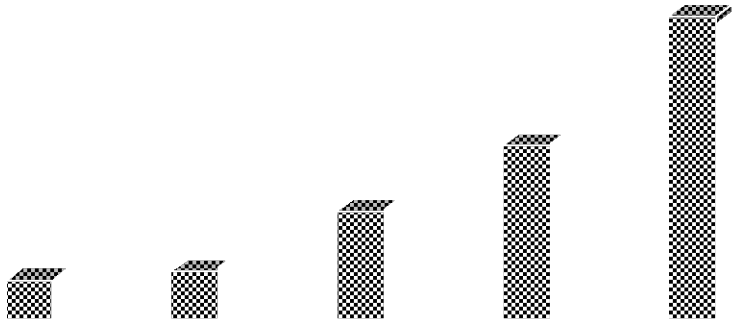
Figure 5. 1: Percentage share of PIT by consumption expenditure quintile



Personal income tax as a proportion of household consumption expenditure was calculated using both per capita and per adult equivalent measures of household consumption expenditure. Both these measures are extensively used in the literature (Wagstaff and Van Doorslaer 1992; Van Doorslaer and Wagstaff 1993; Wagstaff and van Doorslaer 2000; EQUITAP 2005; Ping, Whynes et al. 2008). Here I have used both measures to enable a comparison of whether relative progressivity differs between the two measures. Figure 5.2 depicts the payment of PIT as a proportion of household consumption expenditure. The results show that PIT is clearly progressive for household consumption expenditure on both a per capita and per adult equivalent basis. The main reason for the strong progressivity of personal income tax is the highly skewed tax rates in favour of low income earners in the formal sector. This is justified under the principle of equity in health care financing such that those who have more should pay more. Adjusting for adult equivalence in household consumption expenditure makes a negligible difference to the relative progressivity of PIT.

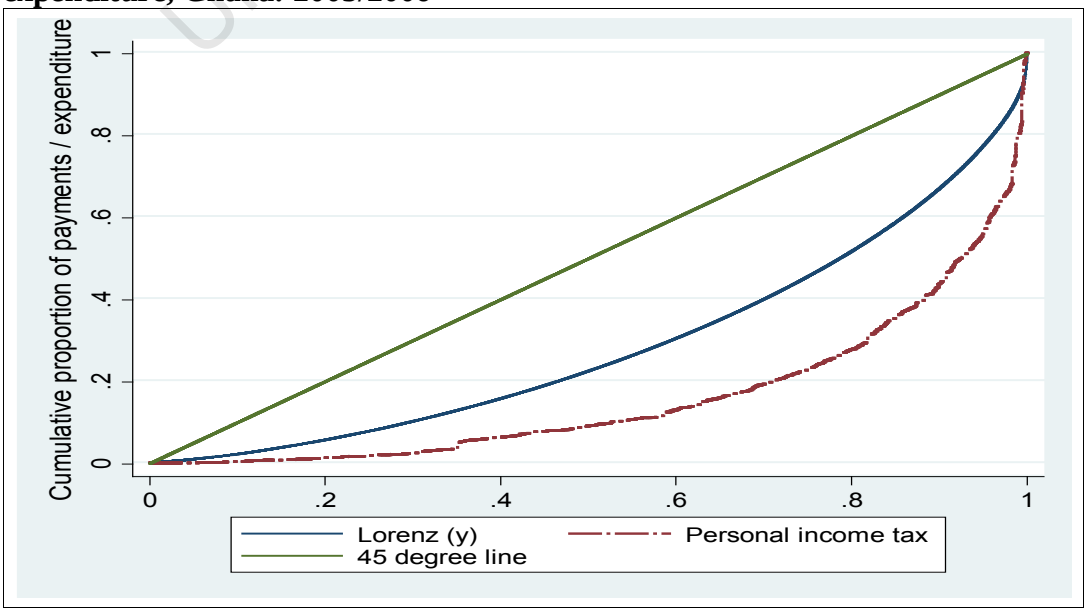
[42] The inter-bank exchange rate =¢9,072.1 to US$1.00 in 2005

Figure 5. 2: PIT as a proportion of household consumption expenditure



The concentration curve for personal income tax payments was constructed as well as the Lorenz curve (as shown in Figure 5.3). According to Wagstaff and others, when the concentration curve for health care payments lies completely outside the Lorenz curve of ability to pay (which in this case is based on household consumption expenditure), the health payment is progressive (Wagstaff and van Doorslaer 1992). Proportionality (as explained in chapter four) is attained when the two curves conincide. In this case, the concentration curve of personal income payments lies outside the Lorenz curve of consumption expenditure (or ability to pay). Thus as Figure 5.3 shows, the Lorenz curve dominates the concentration curve of personal income tax payments at all points further confirming the progressivity of personal income tax in Ghana.

Figure 5. 3: Concentration curve of PIT payments and Lorenz curve of household expenditure, Ghana: 2005/2006



To determine the extent of progressivity and confirm the dominance of the Lorenz curve over the concentration curve of personal income tax payments, the Gini coefficient of consumption expenditure was calculated and subtracted from the concentration index of the personal income tax to obtain the Kakwani index. This index, as explained in the previous chapter, measures the extent to which a tax system departs from proportionality. To do this it measures the size of the area between the Lorenz curve of consumption expenditure and the concentration curve of personal income tax payments (see Table 5.1). Here the Kakwani index shows that personal income tax payments are very progressive and thus the burden of this payment is heavily borne by the rich in Ghana.

Table 5. 1: Kakwani index of Personal income tax (PIT)

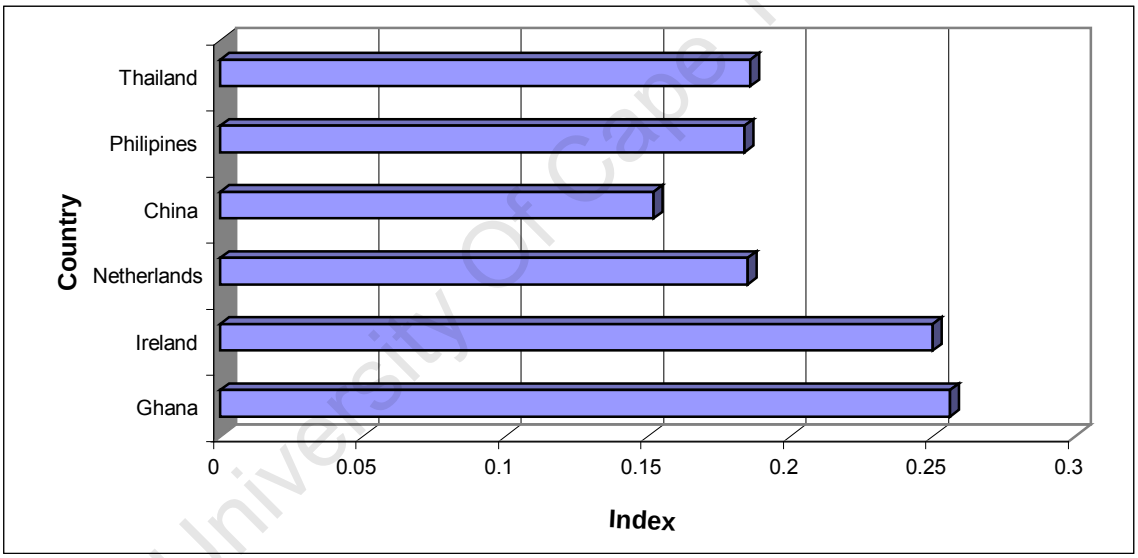
	Index
Concentration Index	0.680
Gini coefficient	0.424
Kakwani index	0.256

These results are not only consistent with findings of an earlier tax incidence study in Ghana, but with similar studies in other countries. In a study in the late 1980s, Younger (1996) used the income tax information from the first Ghana living standard survey (1988) and the 1988 income tax schedule to measure the progressivity of income tax. He ordered households by per capita expenditures and then plotted their cumulative expenditures and cumulative tax payments against the cumulative proportion of households-so called Lorenz curves. Although he did not explicitly calculate a Kakwani index for PIT, the concentration curve for income tax payments lay everywhere below the Lorenz curve of household expenditure, thereby indicating that income tax was progressive (Younger 1996).

Many countries have progressive PIT for instance Tanzania and South Africa (the two other countries in the larger SHIELD project). Using the income and expenditure survey data of 2005/2006, South Africa obtained a Kakwani index for personal income tax of 0.2194, which is very progressive (Ataguba and McIntyre 2009). The finding for Tanzania (using the household budget survey) was similar being again over 0.20 (Akazili, Ataguba et al. 2009). These countries also have similar tax rate structures to that of Ghana. Indeed, personal income tax and direct taxes in general tend to be progressive everywhere. Earlier studies by Wagstaff and van Doorslaer (1999) in a range of OECD

countries and recent studies by the EQUITAP team in Asia found direct taxes to be generally progressive (Wagstaff, van Doorslaer et al. 1999; O'Donnell, van Doorslaer et al. 2008). Younger and others (1999) in a study in Madagascar on tax incidence, using the Madagascan household income and expenditure survey data from 1999, found that personal income tax was very progressive. This was illustrated graphically using the concentration and Lorenz curves. The concentration curve of personal income tax lay entirely outside the Lorenz curve of household expenditure, thus confirming the progressivity of personal income tax in Madagascar. Figure 5.4 depicts the Kakwani indices of personal income tax or direct tax from some selected countries and where Ghana stands in relation to the other countries. It is clear from the figure that there is a consistent pattern with personal income taxes being generally progressive.

Figure 5. 4: Kakwani indices of personal income tax/direct tax of some selected of countries and Ghana



Source: Wagstaff, van Doorslaer et al. 1999; O'Donnell, van Doorslaer et al. 2008): Authors own calculation

The question that then arises is what is the implication of such progressivity for health care funding in Ghana? Personal income tax in Ghana accounted for about 11% of the total tax revenue in 2005 and, since unsurprisingly this tax was found to be progressive, it could continue to be an important contributor to providing financial protection for the poor and vulnerable. Using personal income tax as a source could be a way of ensuring equity in health care financing in the country since those who have a higher ability to pay will be contributing to funding the health needs of those less well placed. However, any increase in personal income tax without some compensating increase in wages and salaries could have negative consequences for labour productivity and weaken incentives

to work. Sustained growth of the GDP of the country and a resultant increase in its 'fiscal space' is ideally what is required to allow personal income tax revenue to be increased. With the current GDP growth rate of about 6% in Ghana (Institute of Statistical Social and Economic Research 2008), there are then limits on what can be achieved through income tax. As a result there is a need to look at other financing mechanisms in terms of their incidence or burden. The other direct tax is corporate tax.

5.1.1.2 Corporate tax

Corporate tax refers to a direct tax levied by various jurisdictions on the profits made by companies or associations and often includes a tax on the capital gains of a company. Earnings are generally considered to be gross revenue minus expenses. In 2005 in Ghana, corporate tax was 15% of total tax revenue. The rate of corporate tax has seen substantial reductions over the years, from 36% in 1996 to 28% in 2005 and to 25% in 2006. These reductions in the corporate tax rate are meant to promote the growth of companies in Ghana. Most of the large companies in Ghana self assess their tax liabilities and submit financial statements to the internal revenue services.

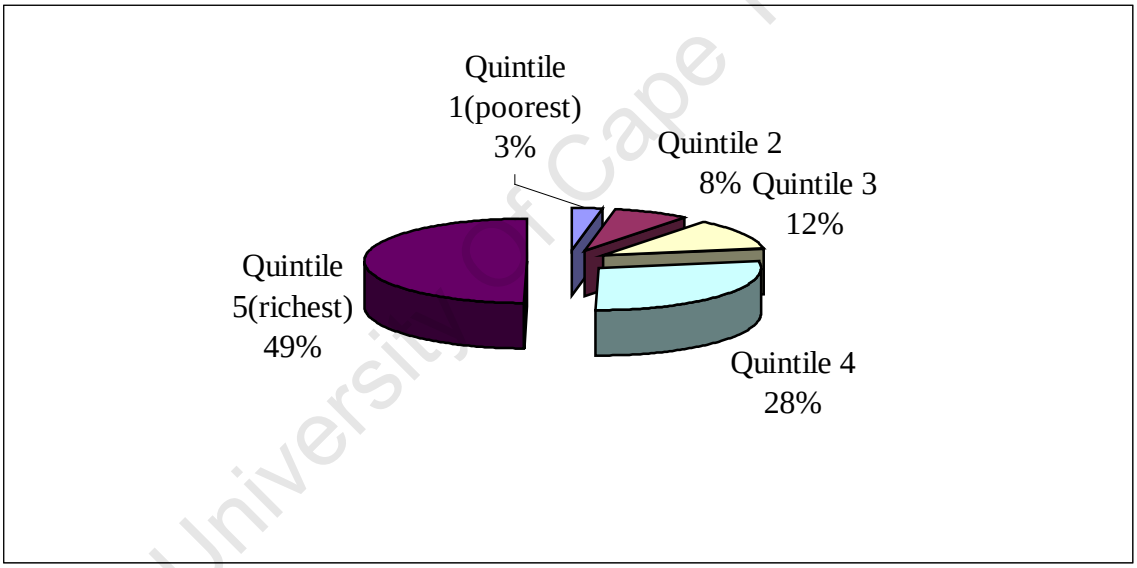
A key question to consider in the incidence analysis of corporate tax is "who bears the burden of the corporate tax?" This is a difficult question over which economists disagree, but one thing is certain: it is people who pay all taxes. When the government levies a tax on a corporation, the corporation is more like a tax collector than a taxpayer. The burden of the tax ultimately falls on people (the owners, customers, or workers of the corporation). However corporate income tax is sometimes popular, in part because it appears to be paid by rich corporations. Yet those who bear the ultimate burden of the tax are often mere households and consumers and employees of corporations. Because of the lack of agreement as to who exactly pays corporate income tax, a number of scenarios need to be assumed in calculating the incidence of corporate tax. The assumptions based on the various scenarios are important because these will enable us to see the different incidences of corporate tax depending on which assumption is used.

Unlike personal income tax which is clearly known to be paid by formal sector workers, there is less clarity regarding who pays corporate tax. In this study the incidence of corporate tax is calculated based on two assumptions the first, as mentioned in the methods chapter, is that there is an equal share of corporate tax payments between

shareholders and consumers, and the second is what the nature of corporate tax incidence is if we assume that consumers bear 100% (shifted completely) of corporate tax.

I begin with the assumption that corporate tax is shared equally (50/50) between shareholders or capital owners and consumers of corporate goods and services. Figure 5.5 illustrates the percentage share of corporate tax across consumption expenditure quintiles. Close to 80% of corporate tax is contributed by those in quintiles 4 and 5 so that the burden of corporate tax appears to be on the rich, based on this assumption of equal shares of corporate tax payments between consumers and shareholders. In a similar study in South Africa, the richest quintile share of corporate tax (with an assumption of equal shares of corporate tax) was found to be over 80% (Ataguba and McIntyre 2009).

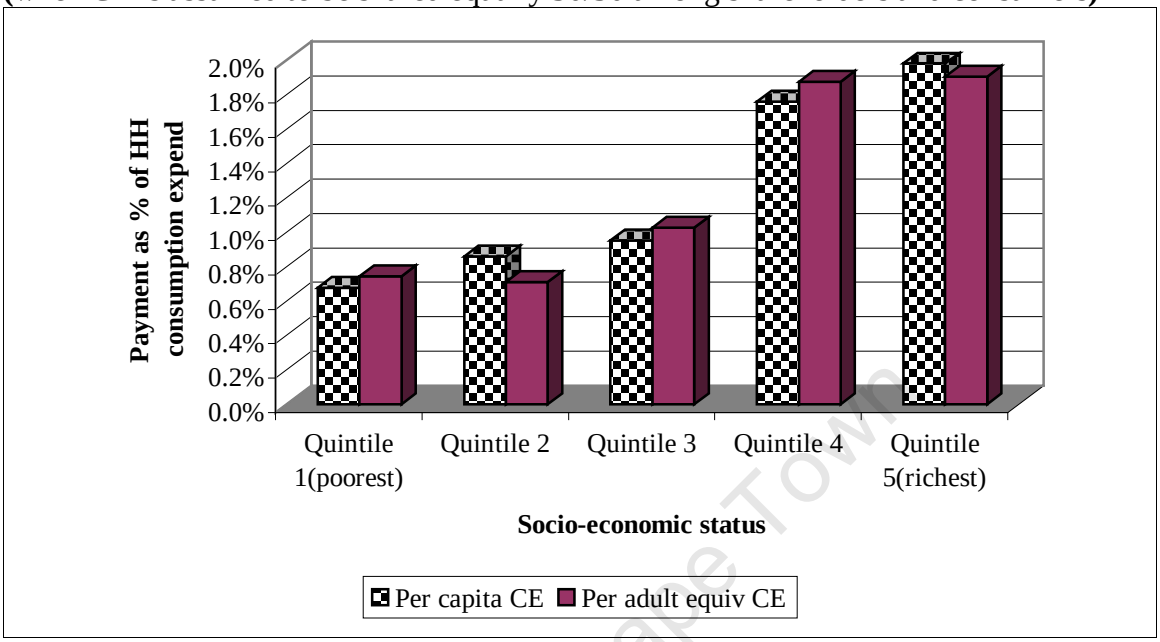
Figure 5. 5: Percentage share of CT by consumption expenditure quintile (when CT is assumed to be shared equally-50/50 between shareholders and consumers)



The results in Figure 5.6 again show that the burden of corporate tax (assuming that the tax is shared equally between consumers and shareholders) falls on the rich. It can be observed that corporate tax appears progressive whether the per capita or adult equivalent household consumption expenditure measure is used. Whilst the poorest group (indicated by quintile 1) pays 0.68% in corporate tax as a proportion of their consumption expenditure (based on per capita expenditure measure), the richest group (quintile 5) contributes almost 2% as a proportion of their consumption expenditure. The situation is replicated when we use the per adult household consumption expenditure measure. The payment of corporate tax as a proportion of household consumption expenditure using a

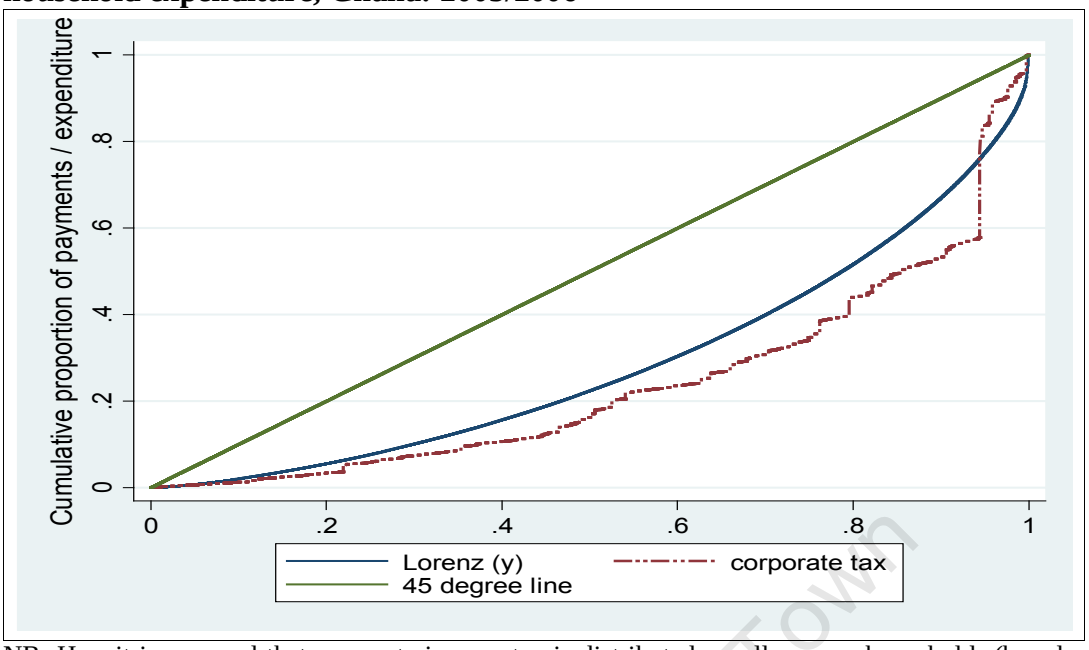
per adult equivalent measure is slightly higher for quintiles 1, 3 and 4. In South Africa, the trend is similar and again corporate tax was found to be progressive.

Figure 5. 6: CT as a proportion of household consumption expenditure by quintile (when CT is assumed to be shared equally 50/50 among shareholders and consumers**)**



To test the progressivity of the corporate tax payments based on the assumption that corporate tax income is distributed equally across households and shareholders, the Lorenz curve of household consumption expenditure and the concentration curve of corporate tax payments were constructed (Figure 5.7). Here it can be observed that the Lorenz curve dominates the concentration curve of corporate tax payments up to the last decile of the consumption expenditure distribution, but thereafter the concentration curve crosses the Lorenz curve. This is because shareholders are heavily concentrated in the top decile of the population. In this case there is thus no overall dominance of the Lorenz curve over the concentration curve (Figure 5.7).

Figure 5. 7: Concentration curve of corporate tax payment and Lorenz curve of household expenditure, Ghana: 2005/2006



NB: Here it is assumed that corporate income tax is distributed equally across households (based on their reported consumption expenditure on manufactured goods) and shareholders (based on receipts of dividends)

Further confirmation of the progressivity of corporate tax emerges when the Kakwani index is calculated as presented in Table 5.2. The positive concentration index shows that those who are better off bear the greatest burden of corporate tax, again confirmed by the positive Kakwani index of 0.099. The results also suggest that the poor consume fewer manufactured goods than the rich. Indeed many of these goods may be out of reach of the poor and so it is not surprising that corporate tax (with the equal share assumption) is progressive.

Table 5. 2: Kakwani index of corporate tax (assumption of equal share)

	Assumption that corporate income tax is distributed equally between consumers and shareholders
Concentration Index	0.522
Gini coefficient	0.424
Kakwani index	0.099

Moving to the assumption that corporate tax is completely shifted to the consumers of corporate goods and services, the results show that higher income groups (quintile 4 and 5) bear a higher proportion of corporate tax, rather similar in fact to what was found for the previous distribution of corporate tax assumption. There is however a small difference. Whilst the proportion of corporate tax share for quintile 4 and 5 combined is 76% (under the assumption of an equal share of corporate tax for consumers and

shareholders), the proportional share under the assumption of total burden on consumers was 72% (Figure 5.8). The generally higher proportional share of corporate tax shows that again in Ghana the rich bear a higher burden of this tax.

Figure 5. 8: Percentage share of CT by consumption expenditure quintile (when CT is assumed to be wholly shifted to consumers)

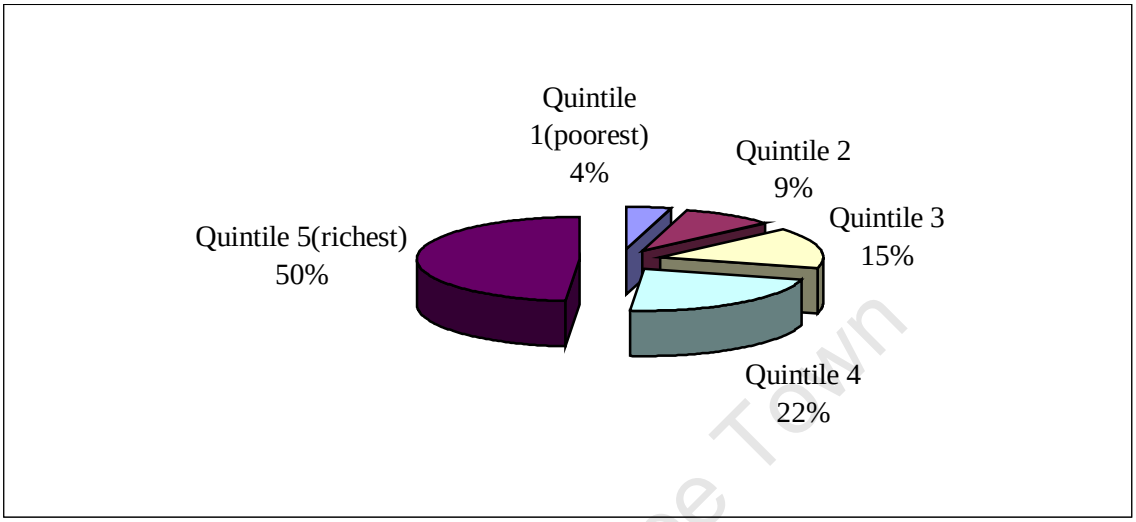
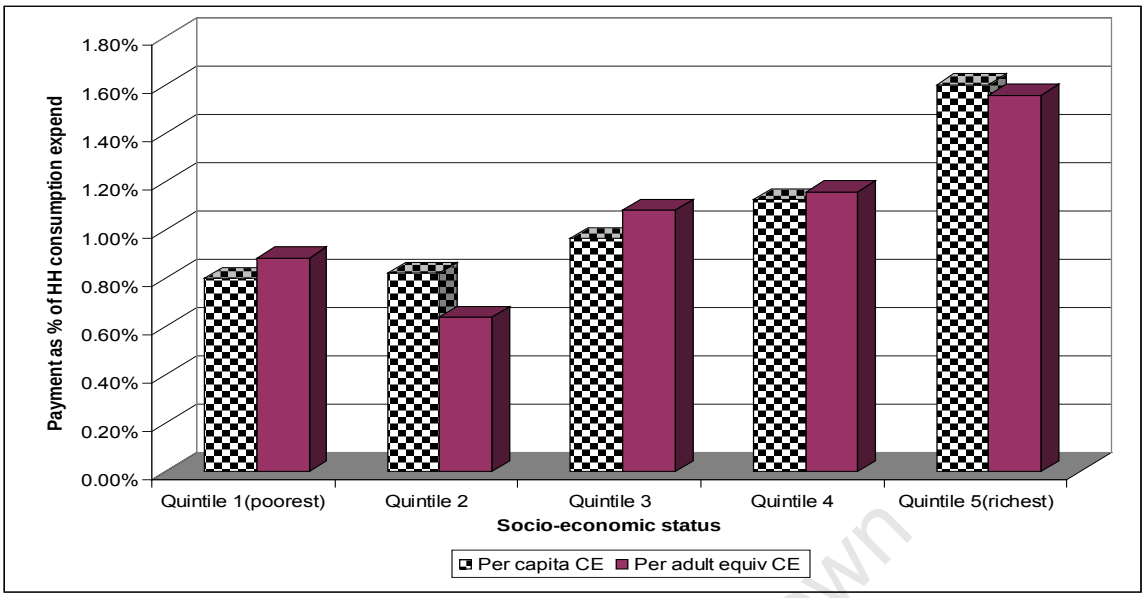


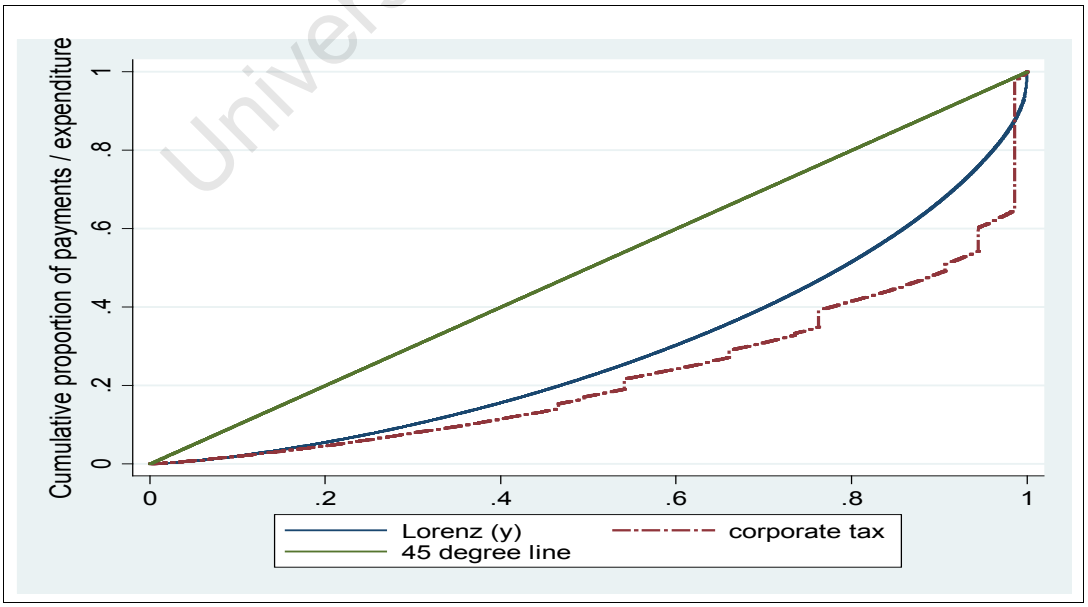
Figure 5.9 depicts the corporate tax payments as a proportion of consumption expenditure using the assumption that corporate tax is completely shifted to consumers of corporate goods and services. Corporate tax under this assumption is still progressive. In South Africa, corporate tax became regressive under the assumption of a complete shift of corporate tax to consumers (Ataguba and McIntyre 2009). The results are again presented using both the per capita and per adult equivalent household consumption expenditure measures and these reveal that corporate tax is progressive under both assumptions. As indicated earlier, the reason for the corporate tax remaining progressive is that Ghana has a large subsistence, rural sector and many lower income people simply do not consume many manufactured goods and services.

Figure 5. 9: CT as a proportion of household consumption expenditure by quintile (when CT is assumed to be completely shifted to consumers)



To provide further evidence of progressivity, the Lorenz and concentration curves were constructed. As can be seen the concentration curve is outside the Lorenz curve of consumption expenditure for the major part of the curve, thus again confirming the progressivity of corporate tax (Figure 5.10).

Figure 5. 10: Concentration curve of corporate tax payment and Lorenz curve of household expenditure, Ghana: 2005/2006



NB: Here it is assumed that corporate income tax is completely shifted onto consumers or distribution across households based on reported consumption expenditure of manufactured goods

When the Lorenz and concentrations curves cross, and depending on how they cross, it is difficult to judge whether a payment mechanism is progressive or not. In this particular care and judging from the *shape of the curve in Figure 5.10 the Kakwani index is going to be positive. But verifying this further*, I calculated the Kakwani index, the concentration index and the Gini coefficient as illustrated in Table 5.3. Just like the incidence of corporate tax under the earlier assumption, the concentration index is positive meaning that the better-off bear the largest burden of corporate tax. The positive Kakwani index confirms the progressivity of this tax, due to the rich consuming more manufactured goods and services than the poor.

Table 5. 3: Kakwani indices of corporate tax (assumption of complete shift to consumers)

	Assumption that corporate income tax is shifted completely to consumers
Concentration Index	0.564
Gini coefficient	0.424
Kakwani index	0.121

5.1.2 Indirect taxes

Indirect taxes are taxes on goods and services collected from importers, manufacturers and other intermediaries, who as far as possible pass the burden on to the final consumer by including the tax in the selling price of the commodity. In Ghana, indirect taxes contribute over 70% of the total tax revenue every year (Institute of Statistical Social and Economic Research 2008). In advanced countries, however, they contribute less than 30%. The reasons for indirect tax contributing a higher percentage of total tax revenue in developing countries like Ghana is the ease and convenience involved in collection as well as the difficulty in evading this type of tax. Its cost of collection is also relatively low. The main indirect taxes (that make up over 95%) in Ghana are Value added tax (VAT), the National Health Insurance Levy (NHIL), the fuel levy and the import duty. These are the indirect taxes considered in this study. The percentage contribution of each of these to the total tax revenue in 2005 was quite significant[43]. The results of these, beginning with VAT, in terms of their incidence are presented below.

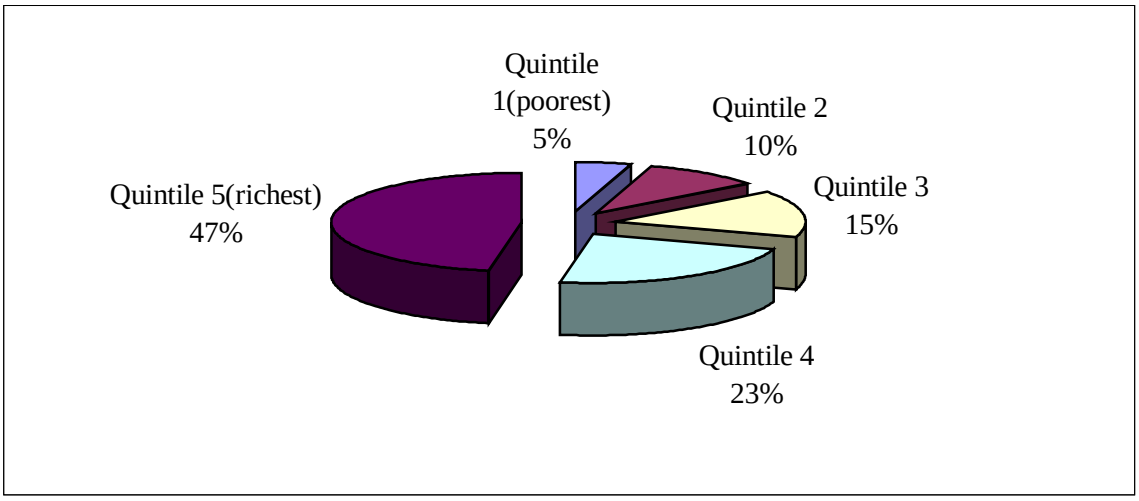
[43] VAT- 25.5%, NHIL -5%, Fuel levy-18%, Import duty-16.5%

5.1.2.1 Value added tax (VAT)

It is important to emphasise that VAT is a tax on the expenses incurred by consumers when they pay for goods or services. In Ghana VAT was reintroduced in 1998 after initial resistance to it and its subsequent withdrawal in 1995 to replace other taxes on expenditure including a sales and services taxes. Thus VAT is a general consumption tax. With a percentage share of total tax revenue of 25.5%, VAT was (and still remains) the single largest contributor to total tax revenue. As stated in chapter four, the rate of VAT is 15% which consists of 10% plus 2.5% for a specific educational fund and 2.5% NHIL. This analysis uses only the 10% that goes to the government consolidated fund for disbursement. Given that VAT is the single largest tax component in Ghana, it is an important source of funding for health care in the country. It is thus important to know and document the incidence of this tax on the general population. Policy makers who have the welfare of the people at heart will however generally frown on relying on a tax that is regressive.

This analysis of the incidence of VAT starts with the calculation of the percentage share of VAT by consumption expenditure quintile. As can be seen in Figure 5.11, the greatest share of the burden of VAT is in the higher quintiles i.e. the rich are bearing a more than proportionate share of the burden of VAT. Whilst quintiles 1 and 2 combined account for 15% of VAT, quintiles 4 and 5 combined account for 70% (Figure 5.11). This reflects the large exemptions that characterised the implementation of VAT in Ghana. As mentioned previously, the initial introduction of VAT in 1995 was met with massive resistance in the form of strikes and demonstrations by the general public. The subsequent withdrawal of the tax and further consultations resulted in a wide range of exemptions of goods largely consumed by the poor. Another reason for this VAT distribution pattern is the fact that the Ghanaian economy is not 'formalised' like middle-income and developed countries where groceries and other goods and services consumed by lower socio-economic groups are sold in the shops and supermarkets that can easily attract VAT. The percentage share of VAT in the higher quintiles is similar to that in South Africa (Ataguba and McIntyre 2009).

Figure 5. 11: Percentage share of VAT by consumption expenditure quintile

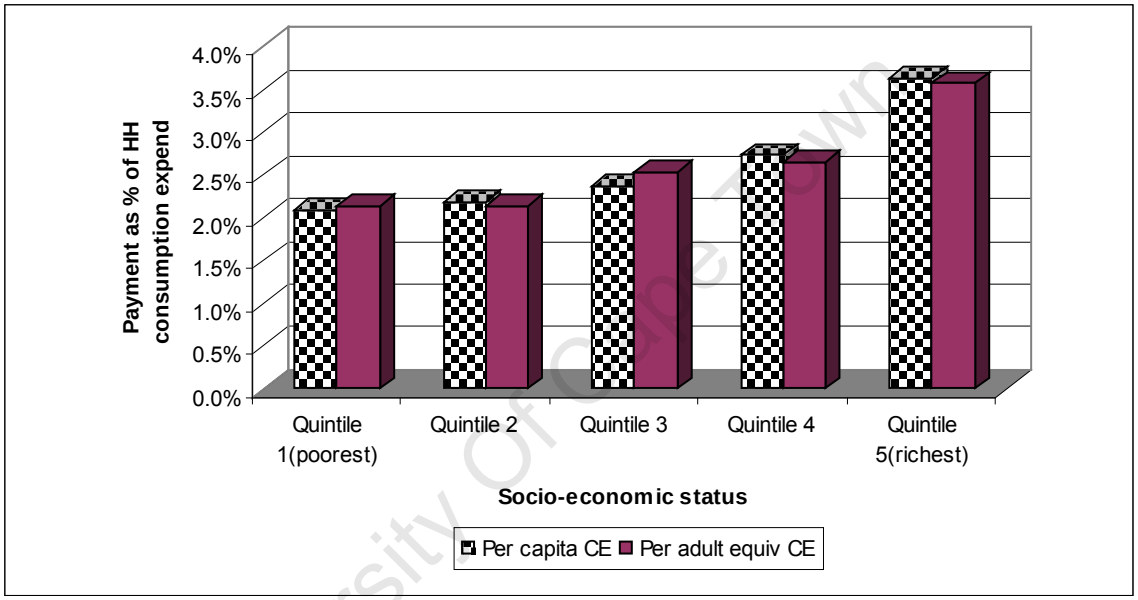


VAT payments as a percentage of household consumption expenditure applying both the per capita and per adult equivalent measures were estimated. As can be observed in Figure 5.12, the rich pay a higher proportion of their consumption expenditure on VAT as compared to the poor. Using per capita consumption expenditure, one can observe that whilst VAT payment is 2.09% of the poorest quintile consumption expenditure, it is 3.63% for the richest. The result is little different when we use the per adult equivalent measure, with VAT being 2.14% of the consumption expenditure of the poorest 20% of households and 3.58% for the richest quintile (Figure 5.12). The results thus show that VAT is a progressive financing mechanism in Ghana.

The results also are consistent with findings in other lower income countries. For instance in Tanzania (which also has a large informal sector) the richest quintile pays a higher proportion of their consumption expenditure as VAT. Whilst the poorest 20% contributed 4.1% of their consumption expenditure as VAT, the richest 20% contributed 8.4% (double) of their consumption expenditure (Akazili, Ataguba et al. 2009). Tanzania, just like Ghana, has exempted from VAT a wide range of goods that are consumed mostly by the poor. Goods such as agricultural products (crops, livestock and fish) are VAT exempt. The South African economy, which is more formalised than Ghana and Tanzania, has a different story to tell. There the poorest quintile pay more (10.4%) as a proportion of their consumption expenditure than the richest quintile (8.8%) (Ataguba and McIntyre 2009). Though some goods and services are exempted in South Africa, the extent of exemption is not as great as in Ghana and Tanzania. South Africa is also more formalised which

means that many of the goods and services that do not get taxed in say Ghana and Tanzania are easily taxed in South Africa where they are found in the shops and supermarkets. A tax incidence study in Malaysia and Madagascar found VAT to be progressive (Younger, Sahn et al. 1999; Yu, Whynes et al. 2008). In these countries, goods and services mostly consumed by the poor were exempted from VAT as in Ghana and Tanzania and that at least in part explains the progressivity of VAT in these countries.

Figure 5. 12: VAT as a proportion of household consumption expenditure by quintile



The Lorenz and concentration curve for VAT are illustrated in Figure 5.13. As in the case of personal income tax and corporate tax, the concentration curve of VAT lies outside of the Lorenz curve of consumption expenditure. However the gap between the concentration curve and the Lorenz curve is smaller compared to the direct taxes. The closeness of the two curves suggests that VAT is verging on being proportional, proportionality, occurs when the two curves (the Lorenz and concentration curves) coincide.

In passing, it is important to note that Younger's study on tax incidence in Ghana using the 1988 GLSS did not capture VAT as it had not at that time been introduced but it did cover the sales tax that was in existence at the time. This sales tax was found to be proportional. This was surprising to Younger in a country like Ghana where agriculture, which was not affected by the sales tax, accounted for nearly half of GDP (Younger

1996). Younger's study recommended that "…the government's project to establish a value added tax (VAT) is welcome; a VAT's incidence should be similar to the sale tax….." (Younger 1996).

Figure 5. 13: Concentration curve of VAT payment and Lorenz curve of household expenditure, Ghana: 2005/2006

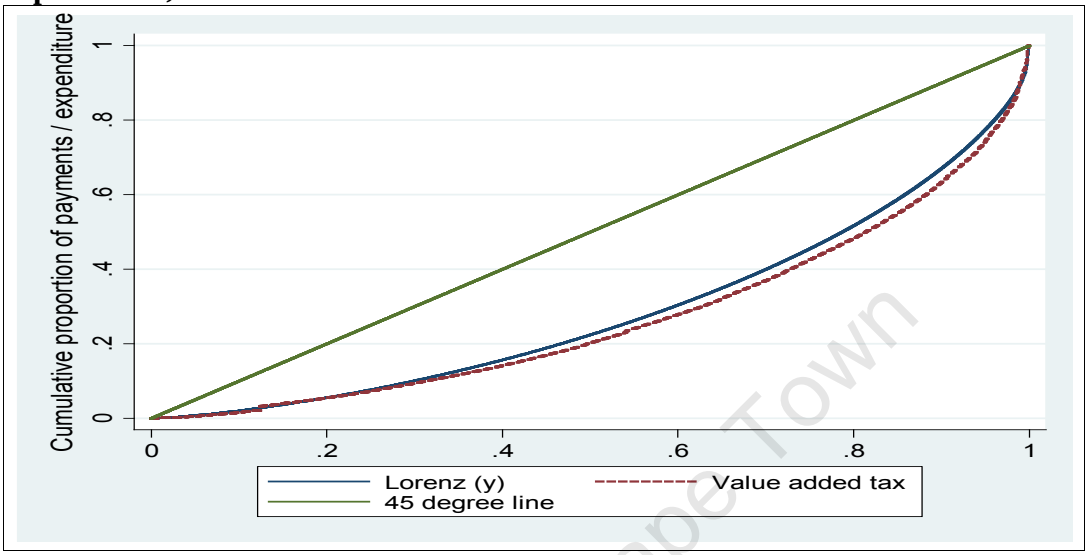


Table 5.4 provides the results of the concentration index of VAT, the Gini coefficient of consumption expenditure and the Kakwani index. The Kwakwani index is positive confirming progressivity but this is less than for personal income tax and corporate tax. The findings are different from those in South Africa. The Kakwani index for VAT in South Africa is negative and hence the payment mechanism is regressive. Tanzania registered a much higher Kwakwani index than Ghana, which probably means Tanzania exempted a wider range of goods and services used predominantly by the poor.

Policy makers might then be quick to jump at the idea of advocating for increasing health sector resources through VAT. However care must be taken as VAT could easily move to be regressive if the economy were to become more formalised as has happened in South Africa and other developed countries.

Table 5. 4: Kakwani index of VAT

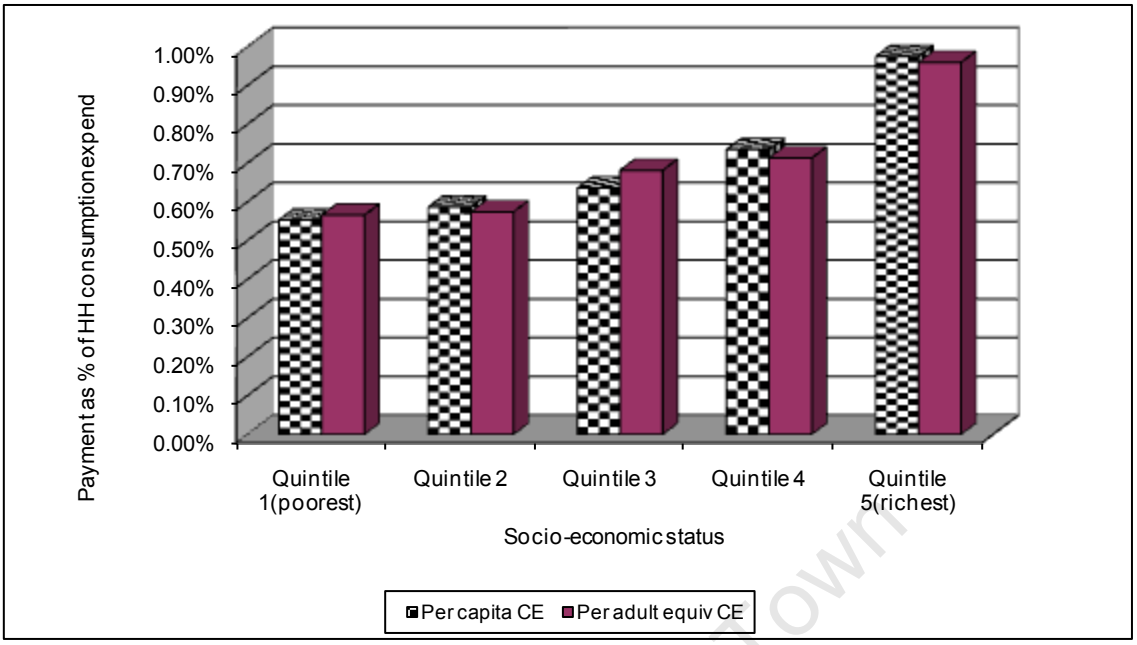
	VAT
Concentration Index	0.473
Gini coefficient	0.424
Kakwani index	0.049

5.1.2.2 National Health Insurance Levy (NHIL)

Following the implementation of the national health insurance scheme in Ghana in 2003/2004, there was a need to provide funding to support its operation and so a 'National Health Insurance Levy' was introduced to be a key source of funding for the NHI and it now covers about 60% of the funds for the NHIS. The levy is supposed to be used to subsidize the health care needs of subscribers to the NHIS, especially those in the informal sector who generally pay a flat annual premium of ¢72,000 (US$8) and to fully cover the premiums of the poor. Formally the NHIL is a levy imposed by section 86 (1) of the National Health Insurance Act 2003 (Act 650) on goods and services supplied in or imported into Ghana.

It is important to note that this NHIL is levied on the same goods and services as VAT. The levy is collected by the VAT secretariat and the proceeds from it are paid into a fund which is administered by the National Health Insurance Council. NHIL is the only earmarked tax for health care in Ghana. In 2005, NHIL contributed about 5% to the total tax revenue in the country. It is therefore important and policy relevant to determine the burden of this levy on the Ghanaian population. Since NHIL is imposed on the same goods and services as VAT, its progressivity follows the same pattern as that of VAT. As with the 10% general VAT component, the NHIL is progressive, with a concentration index of 0.473 and a Kakwani index of 0.049. However, given that the NHIL has a rate of 2.5% compared to the general VAT rate of 10%, NHIL payments as a proportion of household consumption expenditure (by per capita and per adult equivalent measures) is lower than for general VAT (see Figure 5.14).

Figure 5. 14: NHIL as a proportion of household consumption expenditure by quintile



5.1.2.3 Fuel levy

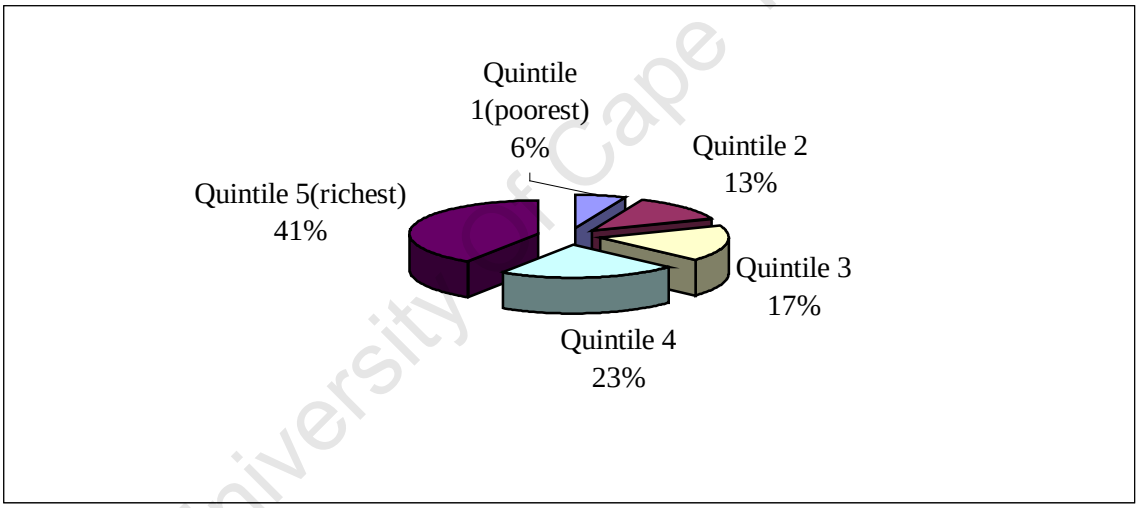
Fuel levies are perhaps the most controversial tax in Ghana, as politicians often use it as a campaign tool or strategy to garner votes. They promise to reduce the price of fuel by reducing the levies on fuel when they get into power. Then when they do gain power, they are faced with the realities of rising international fuel prices and cannot fulfill the promises. This is then capitalized on by the opposition in the next election and a circular process ensues. As mentioned in Chapter 4, fuel prices and levies affect every part of the economy and fuel levies contributed about 17% to the total tax revenue in 2005. As the fuel levy will continue to be an important tax in Ghana, it is important to know and document the incidence of these taxes. Fuels in Ghana consist of petrol, diesel, kerosene, engine oil and other lubricants. I began by examining the incidence of all fuel combined. thereafter, I examine the incidence of all fuel levies excluding kerosene and finally I examine the incidence of the levy on kerosene.

Why these separations? While one needs to assess the incidence of the total fuel levy in the country, the poor are known to use kerosene extensively and it is important to assess the burden of this tax on different income groups. The kerosene levy is estimated to be 16.5% of the total fuel levy, which is quite substantial. Knowing these burdens separately

allows the information to be more policy relevant than having a single estimate for all fuels combined as has been the case in other studies (Younger, Sahn et al. 1999).

Figure 5.15 depicts the percentage share of the general fuel levy by quintile. This includes taxes on all known fuels including engine oil, diesel, petrol, kerosene and others. It can be observed from Figure 5.15 that the share of this levy paid by the top income quintile is over 40%, while that of the bottom quintile is less than 10%. The share of quintiles 1 and 2 combined account for almost 20% of the percentage share of fuel levy which is quite substantial. The figures make intuitive sense as higher income households are likely to consume more fuel particularly through the use of private cars. The low but substantial share of fuel levy for lower income households is a reflection of their use of public transport and kerosene.

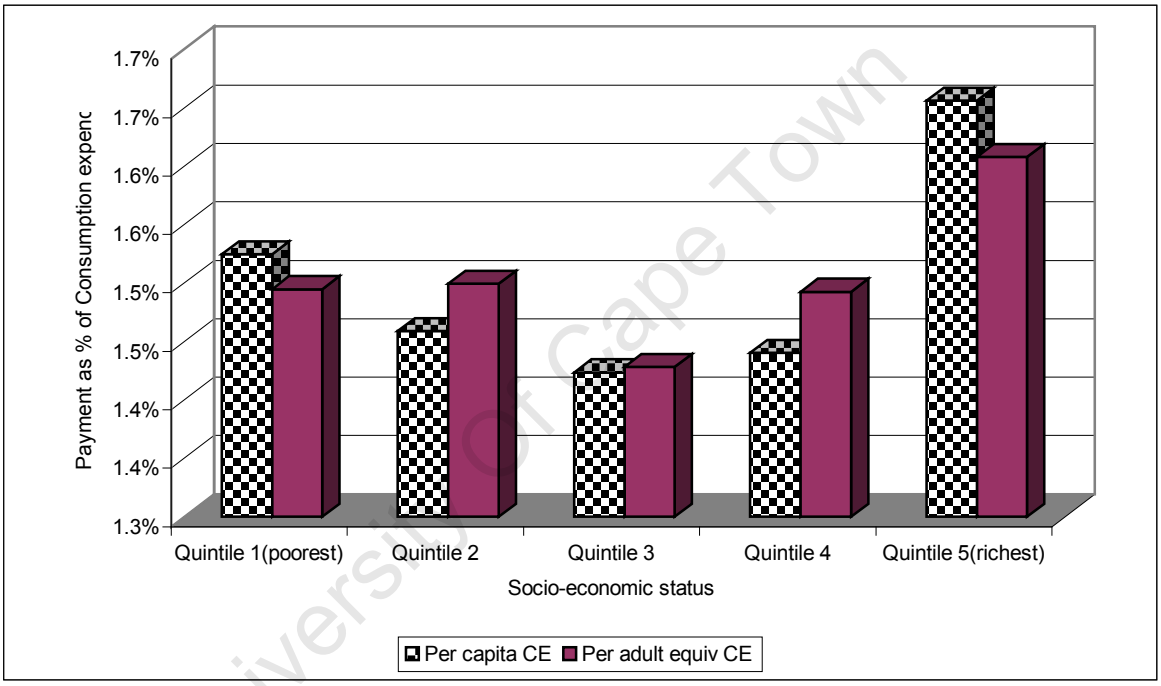
Figure 5. 15: Percentage share of fuel levy by consumption expenditure quintile



The incidence of the fuel levy was then calculated as a proportion of consumption expenditure, using both the per capita and per adult equivalent consumption measures. At a first glance at Figure 5.16, one may be tempted to say that the fuel levy is progressive given that the richest quintile is contributing more as a proportion of consumption expenditure than other quintiles. However, when the incidence of the fuel levy is examined further, beginning with the per capita consumption expenditure measure, one can see that, whilst quintile 1 is contributing 1.52% as a proportion of consumption expenditure to fuel levy, quintile 4 is contributing 1.44%. The contribution to fuel levies relative to consumption expenditure of the second quintile is higher than quintile 3 or 4. Turning to the per adult equivalent measure, there is an equal contribution between quintiles 1 and 4. Quintile 1's contribution is even higher than quintile 3, and quintile 2's

fuel levy contributions as a proportion of consumption expenditure is higher than quintile 3 or 4. It is important to stress that the rather higher than proportional contribution of fuel levy among the poorest 20% of the population could be attributed to their use of public transport which is factored into this analysis, but which is often not considered in other studies (Younger 1996). Also the poor are more likely to consume more kerosene than the rich. The higher contribution among the richest quintile (quintile 5) could be attributable to a higher rate of private car use among this group of the population.

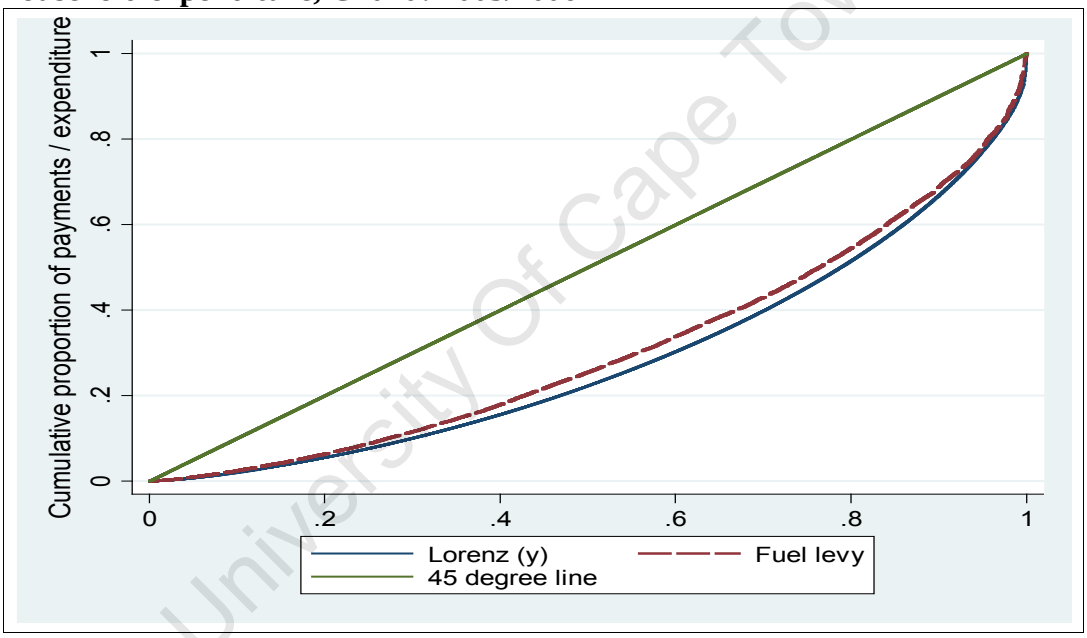
Figure 5. 16: Fuel levy as a proportion of household consumption expenditure by quintile



Given the unclear pattern in Figure 5.16, I proceeded to construct the Lorenz curve of consumption expenditure and the concentration curve of fuel levy payments. Figure 5.17 depicts the results and this clearly shows that fuel tax is regressive. This finding is contrary to the progressive result that Younger found in his tax incidence study in Ghana using the 1988 GLSS data. The reasons for this probably lie partly in the fact that the 1988 GLSS survey data used by Younger lack detailed questions to capture household expenditure on fuel such as kerosene. Additionally, he captured the impact of petroleum tax on the public transit sector by assuming that 20% of the cost of transport was for fuel. This 20% came from some input-output tables in Niger, Cameroon and Madagascar. The 2005/2006 GLSS survey (which this study used) had a diary system that provides detailed information on frequently purchased items, such as kerosene and other fuels. A study in

Madagascar in the late 1990s also by Younger (Younger, Sahn et al. 1999) found the fuel levy to be progressive. My results are however consistent with those of a study in South Africa (Ataguba and McIntyre 2009) where the fuel levy was found to be regressive. In the South Africa study (as with this study), detailed information on the fuel levy component of public transport was derived from calculating the fuel consumption rates by taxis and other methods of public transport, the cost of fuel per kilometre and transport fares by type of transport (as explained in Chapter four). These were all factored into the calculation to obtain the incidence of fuel levy payments. As is shown in Figure 5.17, the concentration curve of fuel levy payments dominates the Lorenz curve of the consumption expenditure variable, suggesting that the fuel levy is regressive.

Figure 5. 17 : Concentration curve of fuel levy payment and Lorenz curve of household expenditure, Ghana: 2005/2006



The Kakwani index for the fuel levy was -0.041 (see Table 5.5) and the negative value confirms that indeed the fuel levy in Ghana is regressive. This is consistent with findings elsewhere. In South Africa, the Kakwani index for the fuel levy using the 2005/2006 income and expenditure survey was -0.0294. As mentioned earlier, my finding suggests that while poor households do not own private cars and so do not spend directly on fuel, poor households in fact bear a heavy burden of the fuel levy because of their use of public transport (which is not usually factored into many tax incidence studies) and also consume more kerosene than the rich.

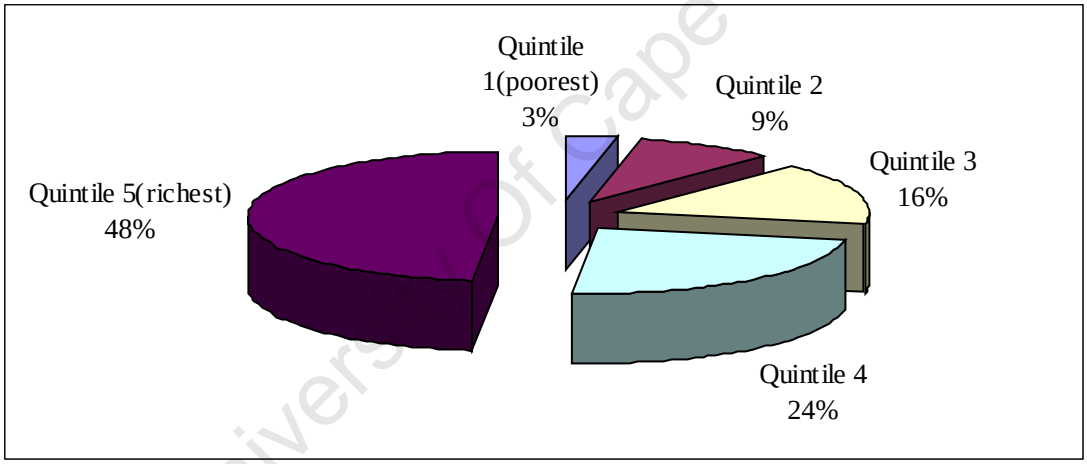
Table 5. 5: Kakwani index for fuel levy

	fuel
Concentration Index	0.383
Gini coefficient	0.424
Kakwani index	-0.041

5.1.2.4 Fuel (excluding Kerosene) levy

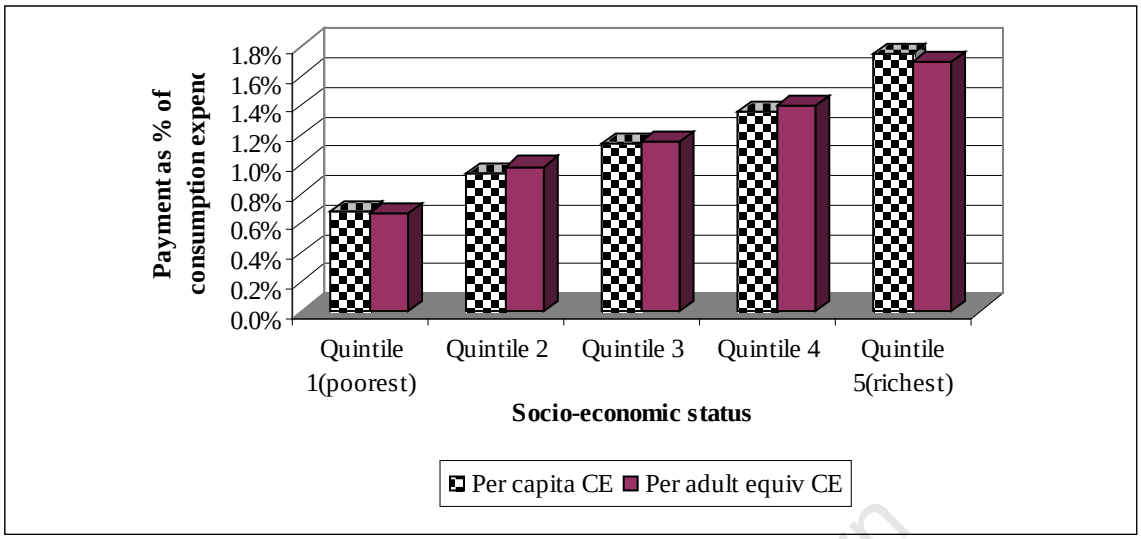
Since kerosene is used largely by the poor, it was important to isolate it from the calculation of the general incidence of fuel tax payments. Figure 5.18 shows that, the richest quintile accounts for more than 48% of the total use of non-kerosene fuel. This is higher than that found in Figure 5.15, which means that excluding kerosene means that the richest quintile have a yet higher percentage share of the rest of the fuel levy. This makes intuitive sense as the rich tend to use more of other fuels than the poor.

Figure 5. 18: Percentage share of fuel(excluding kerosene) payment by consumption expenditure quintile



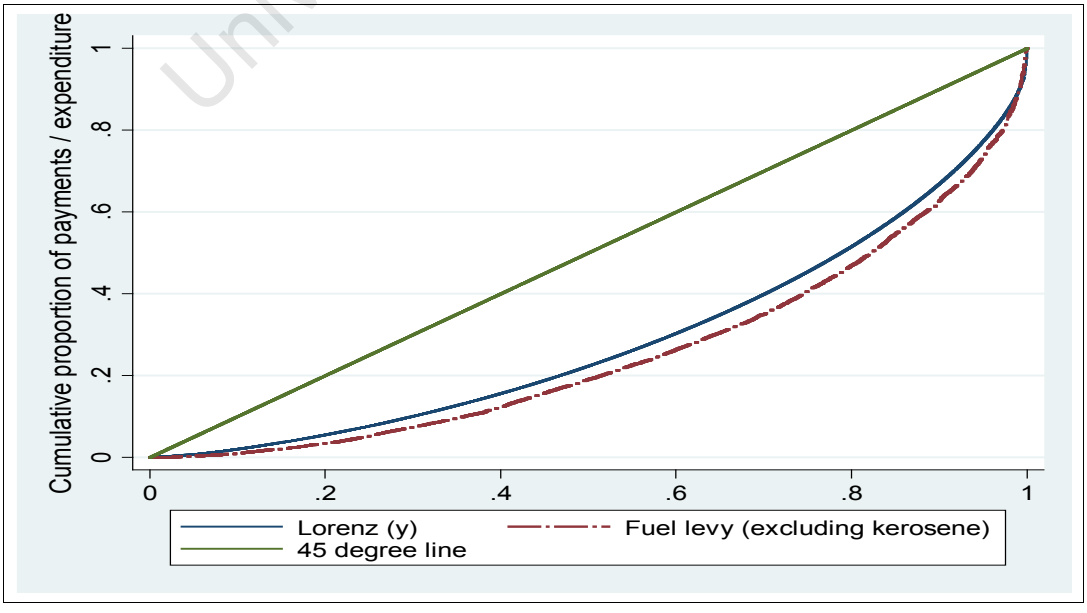
When the kerosene levy is excluded and we calculate the rest of the fuel tax payments as a proportion of consumption expenditure, the results (Figure 5.19) are quite different from Figure 5.16. The patterns (whether the per capita or per adult equivalent consumption expenditure measure is used) clearly show that the incidence of the fuel (excluding kerosene) levy payments is progressive. Whilst the poorest quintile contributes 0.68% and 0.66% respectively as a proportion of consumption expenditure, the richest quintile contributes 1.75% and 1.68% respectively as a proportion of their consumption expenditure. In other words the rich bear the burden of the fuel levy (excluding kerosene). These results are consistent with Younger's tax incidence studies in Madagascar (Younger, Sahn et al. 1999).

Figure 5. 19: Fuel (without kerosene) payment as a proportion of household consumption expenditure by quintile



The concentration curve confirms the progressivity of the fuel levy (excluding kerosene) (Figure 5.20) as it lies outside the Lorenz curve everywhere. This dominance of the Lorenz curve over the concentration curve shows clearly that the burden of the fuel levy other than kerosene in Ghana is on the rich. If the Government or policy makers are considering raising more tax funds (including for health care), the good news from an equity perspective is that the levies on fuels other than kerosene represent an attractive option.

Figure 5. 20: Concentration curve of fuel (excluding kerosene) levy payment and Lorenz curve of household expenditure, Ghana: 2005/2006



The Kakwani index is positive (Table 5.6), which confirms the progressivity of the fuel levy excluding kerosene. It can thus be argued that the major cause of the regressivity of the total fuel levy is the levy on kerosene.

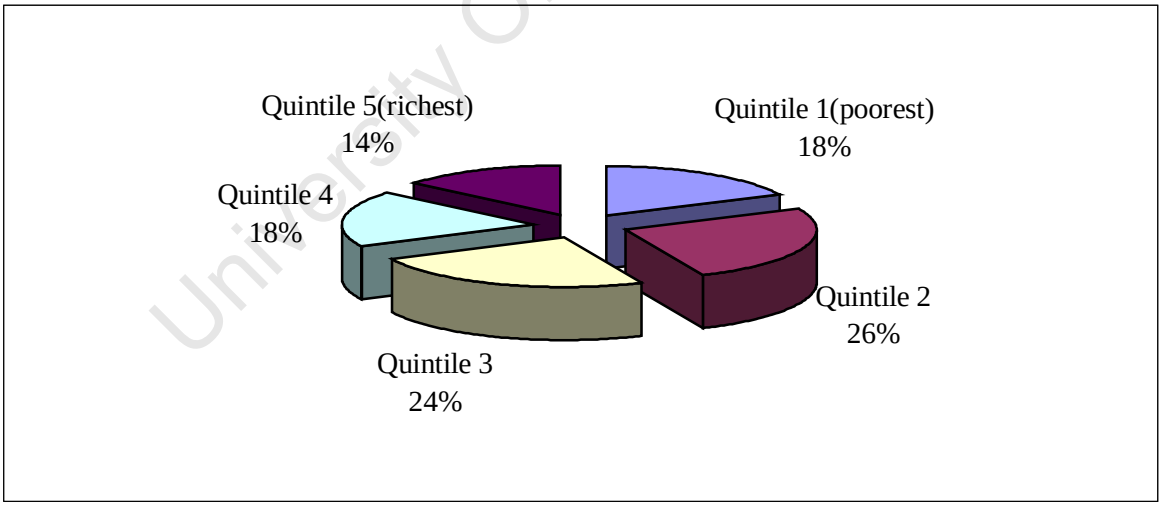
Table 5. 6: Kakwani index of fuel (excluding kerosene) levy

	Fuel (excluding kerosene)
Concentration Index	0.481
Gini coefficient	0.424
Kakwani index	0.061

5.1.2.5 Kerosene levy

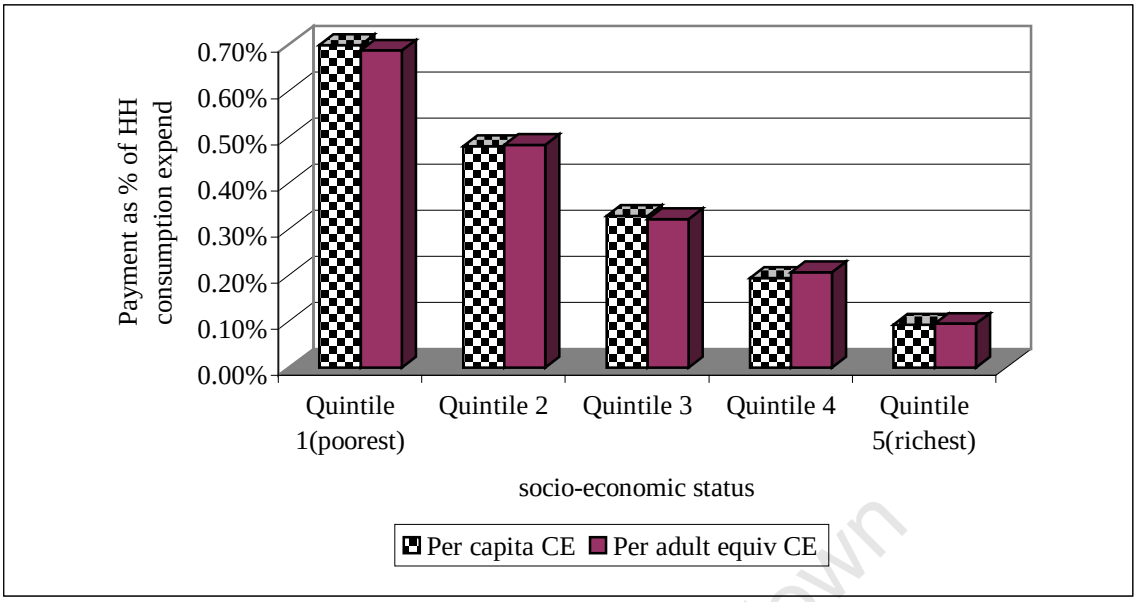
Given that kerosene is largely used by the poor and that the kerosene levy makes up about 17% of the total levy on fuel, it is important to know the burden of this tax. Figure 5.21 shows the percentage share of the kerosene levy by consumption expenditure quintile. It can be seen that the poorest 20% of the population pay 18% of the total kerosene levy; the second poorest pay 26%; and the richest 20% pay less than 15% of the share of total kerosene levy.

Figure 5. 21: Percentage share of kerosene levy payment by consumption expenditure quintile



Kerosene levy payments as a proportion of household consumption expenditure, applying both the per capita and adult equivalent measures (Figure 5.22) show that the poor are bearing the brunt of the kerosene levy. Thus, for example, whilst the poorest 20% of households are paying 0.70% or 0.69% (per capita or adult equivalent measure respectively) as a proportion of their consumption expenditure, the richest quintile is contributing only 0.09%.

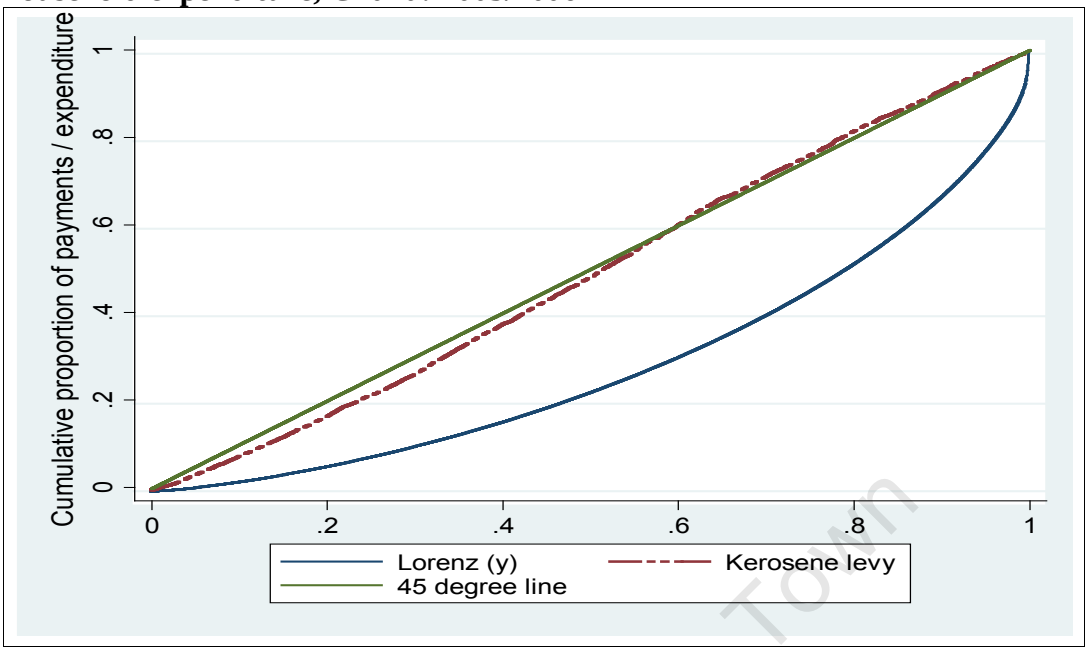
Figure 5. 22: Kerosene levy payment as a proportion of household consumption expenditure by quintile



The Lorenz curve for consumption expenditure and the concentration curve for kerosene levy payments are presented in Figure 5.23. The concentration curve completely dominates the Lorenz curve. The concentration curve even crosses the 45 degree line which show that the kerosene levy is indeed very regressive. The results are consistent with earlier findings by Younger (Younger 1996). Although, as indicated above, the 1988 GLSS data used in Younger's analysis did not give detailed information on kerosene purchases, his results still show that kerosene levy was very regressive (Younger 1996). A tax incidence study of kerosene in Madagascar also found the levy there to be very regressive (Younger, Sahn et al. 1999).

One of the problems of some studies in the field is that they may fail to calculate the incidence of various levies separately (Yu, Whynes et al. 2008). This can mean that their results are rather broadly based such as claiming that indirect tax is regressive, proportional or progressive without revealing which elements are responsible for making the tax in question regressive, proportional or progressive (Yu, Whynes et al. 2008). For example, a study in Malaysia concluded that indirect tax was the most regressive tax (Yu, Whynes et al. 2008) but did not drill down to analyse which components were responsible for this finding.

Figure 5. 23: Concentration curve of kerosene levy payment and Lorenz curve of household expenditure, Ghana: 2005/2006



If policy makers seek to alleviate the burden of tax on the poor, they will need to consider either reviewing the levies on kerosene or removing them altogether. Certainly such actions on their own will reduce Government revenues but this could be compensated for by increasing the levies on other fuels like petrol and diesel which are progressive. The nature of the concentration curve as captured in Figure 5.23 shows that in Ghana at least, the kerosene levy is perhaps the most regressive tax of all.

Looking further at the regressivity of the kerosene levy, the Kakwani index was calculated. As can be seen in Table 5.7, the Gini coefficient far exceeds the concentration index and the Kakwani index is very negative at -0.407, thus confirming the regressivity of the kerosene tax in Ghana.

Table 5. 7: Kakwani index of kerosene levy

	Kerosene
Concentration Index	0.016
Gini coefficient	0.424
Kakwani index	-0.407

5.1.2.6 Import duty

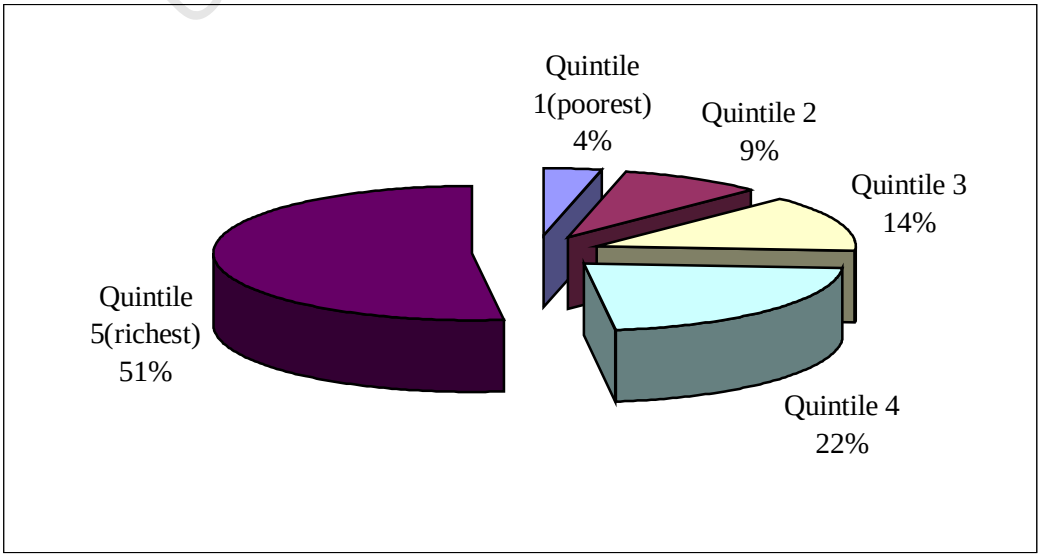
Apart from a few items which are exempted from the payment of customs duties, all imports attract import duties into Ghana. This duty was the third biggest contributor to

total tax revenue after VAT and the fuel levy in 2005, being 16.5% of total tax revenue. The key question here is who is paying this import duty? The immediate answer is those who import goods and services but a more reflective answer would seek to understand the burden or incidence of import duty on different segments of the population. One possible answer to this is provided by Martinez-Vazquez (2004) who argues that import duties passed on to consumers have the same incidence as VAT (Martinez-Vazquez 2004).

One of the difficulties usually associated with measuring the progressivity of import duty is differentiating the consumption across households of locally produced goods and imported goods. Ghana however has very few manufacturing companies and most of the manufactured goods consumed are imported. The incidence was therefore calculated as stated in chapter four by identifying the expenditure by households on imported commodities. Based on the list of imported items and their import duty for 2005 from the Custom, Excise and Preventive Service (CEPS), allocation was then made to households according to their consumption of the identified imported goods.

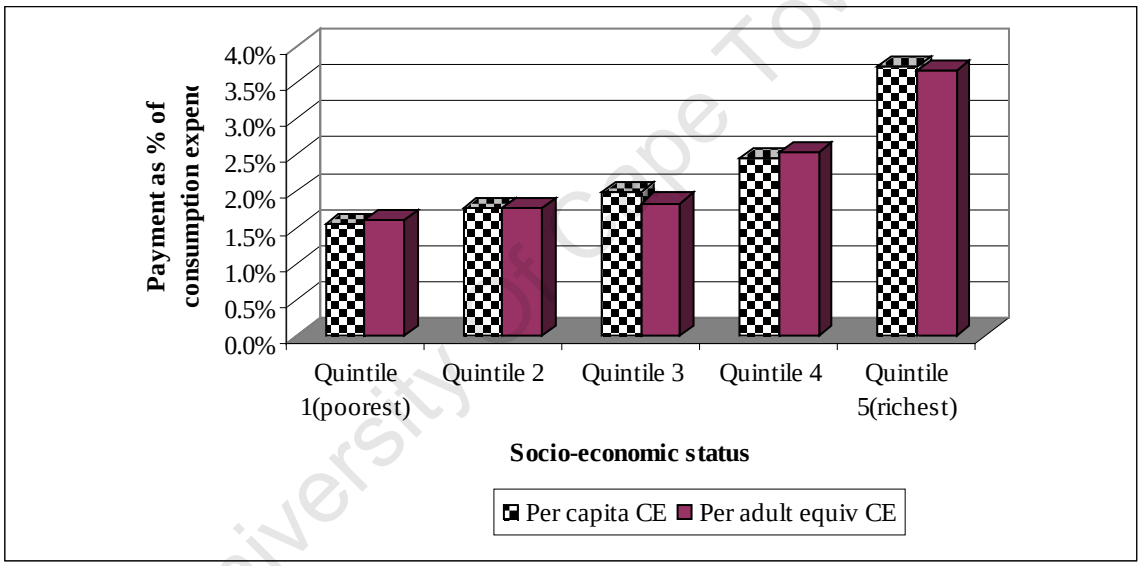
Figure 5.24 depicts the percentage share of import duty by consumption expenditure quintile. The richest quintiles (quintile 4 and 5) combined have a percentage share of over 70% of import duty compared to less than 14% for the poorer quintiles (quintile 1 and 2). This shows that the rich, by virtue of their higher consumption of imported goods, have a higher share of the import duty.

Figure 5. 24: Percentage share of import duty payment by consumption expenditure quintile



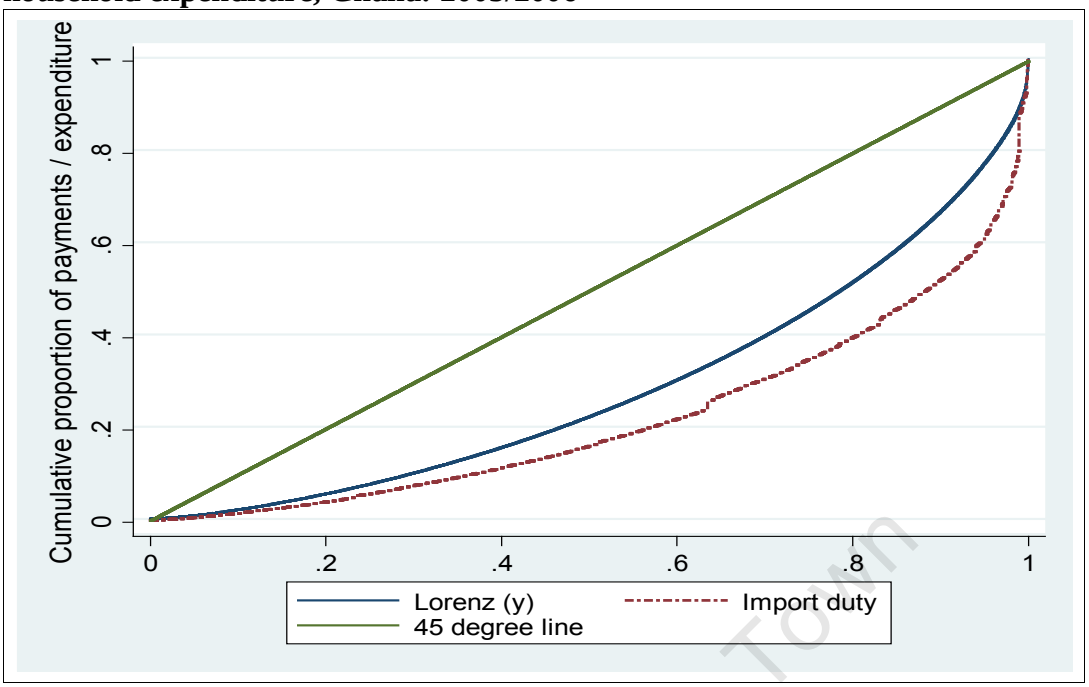
The incidence analysis of import duty shows that the payment mechanism is progressive just like VAT. As can be seen in Figure 5.25, there is little difference in the results between the per capita and per adult equivalent measures. The results show that whilst the poorest quintile is paying 1.55% or 1.61% respectively of their consumption expenditure in import duty through the consumption of imported goods and services, the richest quintile is paying more than double - 3.71% or 3.68% respectively (Figure 5.25). For policy makers concerned with equity, this is good news as the import levy could be a source of increased funding without burdening the poor provided consideration is given to identifying and exempting imported goods and services consumed by the poor.

Figure 5. 25: Import duty payment as a proportion of household consumption expenditure by quintile



The Lorenz curve of consumption expenditure and the concentration curve of import duty are displayed in Figure 5.26. The concentration curve is completely dominated by the Lorenz curve, further confirming the progressivity of the import duty in Ghana and that the rich are bearing more of the burden of import duty.

Figure 5. 26: Concentration curve of import duty payment and Lorenz curve of household expenditure, Ghana: 2005/2006



To obtain the magnitude of the progressivity of import duty, the Kakwani index was calculated and with a value of 0.129, shows that import duty is progressive (Table 5.8), in fact its progressivity is second only to personal income tax. This suggests that the poor are either consuming imported goods that are import duty exempt or they are consuming just a small amount of imported goods compared to the rich.

Table 5. 8: Kakwani index of import duty

	Kerosene
Concentration Index	0.552
Gini coefficient	0.424
Kakwani index	0.129

The results are consistent with findings from Tanzania. Using the household budget survey data of 2000/2001 (and inflating this to 2005 prices) the incidence of import duty was calculated in a similar way to this study. The results revealed that import duty in Tanzania was progressive (Akazili, Ataguba et al. 2009). A study in Madagascar however found the opposite (Younger, Sahn et al. 1999) with import duty being regressive. There were problems with that study however because it proved difficult to identify which households consumed imported goods. That study then assumed that import duties increased the price of *all* goods, whether imported or not, so that buyers of those goods bear the import duty incidence (Younger, Sahn et al. 1999).

5.1.3 Total tax

Pooling all the components of general tax together (direct and indirect) excluding the NHIL and education earmarked tax, the incidence of tax overall was calculated. Direct taxes included personal income tax and corporate tax (with the assumption of an equal share of corporate tax between consumers and shareholders) and indirect taxes included VAT, the fuel levy and import duty. Figure 5.27 shows that taxation overall is progressive. Given that tax revenues are very crucial funding sources not only for the health sector but other sectors as well, the finding that taxation overall is progressive is welcome news for policy makers interested in equity.

The results are consistent with findings from Asia (O'Donnell, van Doorslaer et al. 2008), South Africa (Ataguba and McIntyre 2009) and Tanzania (Akazili, Ataguba et al. 2009). They are also in line with findings from Malaysia where, even though indirect taxes were regressive, overall tax was progressive (Yu, Whynes et al. 2008). Results from Madagascar are also similar to the findings from Ghana (Younger, Sahn et al. 1999). Wagstaff and others also found tax funding in Europe and the USA to either be proportional or mildly progressive (Wagstaff, van Doorslaer et al. 1999).

Figure 5. 27: General tax payment as a proportion of household consumption expenditure by quintile

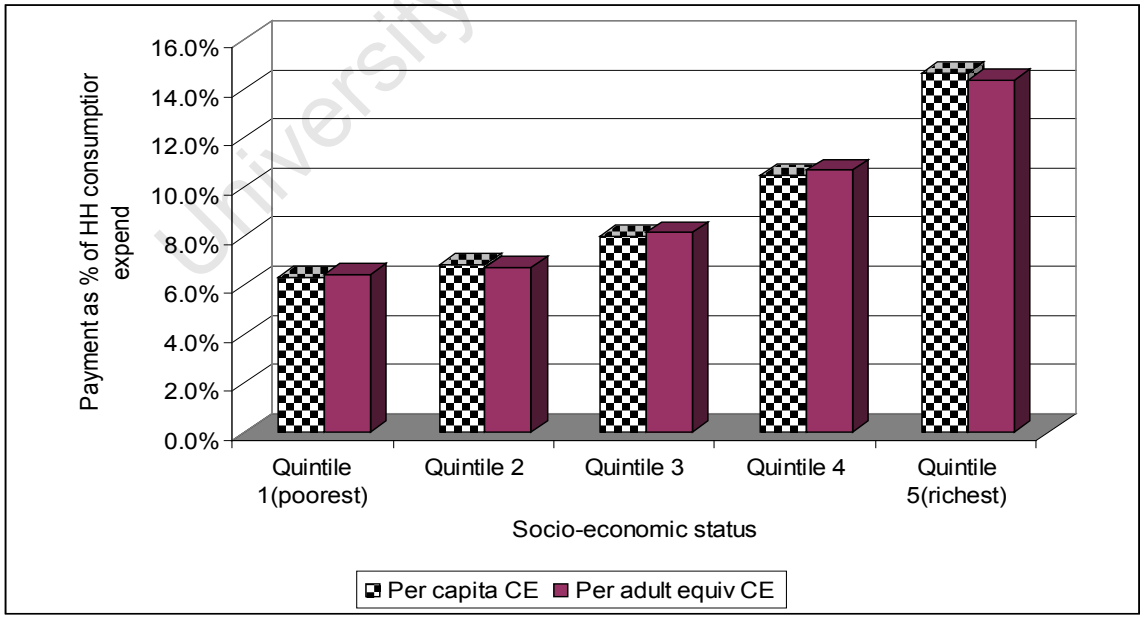


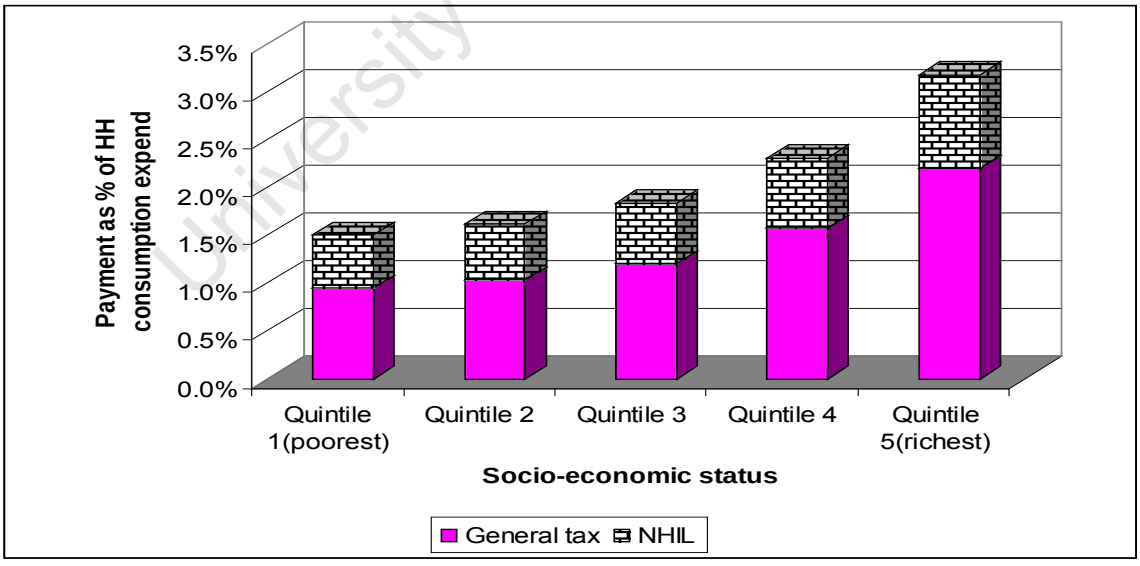
Figure 5.28 and Table 5.9 show the incidence of that *portion* of general taxes that goes to health as well as the National Health Insurance Levy (NHIL). As stated in Chapter Two, government allocated 15% of tax revenue to the health sector in 2005/2006. The only tax

to which the 15% figure was not applied was the NHIL as this is an earmarked tax that goes in total to the health sector. Table 5.9 and Figure 5.28 show that everybody (whether poor or rich) pays health tax[44] either directly and/or indirectly by virtue of their consumption of goods and services. Even though tax overall is progressive, one needs to recognize that the poorest 20% are still paying 1.5% of their meager consumption expenditure towards health through tax. This could have implications for their ability to consume other important health related goods and services.

Table 5. 9: General tax (i.e. 15% of tax that goes to health) and NHIL payments as a proportion of consumption expenditure quintile (per capita and adult equivalent)

Socio-economic status	Per capita consumption exp.			Per adult equiv. consumption exp.		
	General tax	NHIL	Total	General tax	NHIL	Total
Quintile 1(poorest)	0.95%	0.55%	1.50%	0.97%	0.57%	1.54%
Quintile 2	1.03%	0.59%	1.62%	1.01%	0.57%	1.58%
Quintile 3	1.20%	0.64%	1.84%	1.22%	0.68%	1.90%
Quintile 4	1.57%	0.73%	2.30%	1.60%	0.71%	2.31%
Quintile 5(richest)	2.20%	0.98%	3.18%	2.15%	0.96%	3.11%

Figure 5. 28: Pictorial depiction of general tax (i.e. the 15% that goes to health) and NHIL payment as a proportion of household consumption expenditure by quintile (based on per capita)

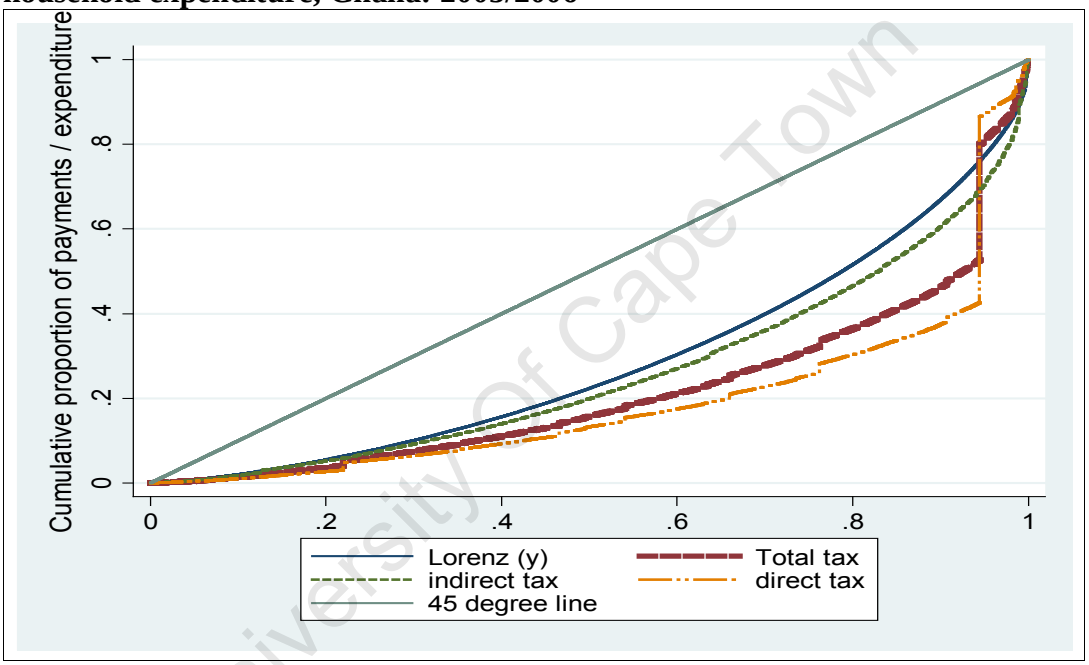


The concentration curves for direct, indirect (excluding NHIL and dedicated education tax) and overall taxes are compared with the Lorenz curve of consumption expenditure. Direct tax is the most progressive as is revealed by the magnitude of the dominance of the

[44] The component of tax that goes to the sector health

Lorenz curve over the concentration curve. The concentration curve for direct tax lies well outside the Lorenz curve (Figure 5.29). The cause of the high progressivity of direct tax lies in the extent of the progressivity of personal income tax. Indeed most studies on equity in health care financing have consistently found direct tax to be progressive (Wagstaff, van Doorslaer et al. 1999; Younger, Sahn et al. 1999; Wagstaff and van Doorslaer 2000; Limwattananon, Tangcharoensathien et al. 2005; Cissé, Luchinia et al. 2007; O'Donnell, van Doorslaer et al. 2008; Yu, Whynes et al. 2008; Leung, Tin et al. 2009).

Figure 5. 29: Concentration curves of Total tax payments and Lorenz curve of household expenditure, Ghana: 2005/2006



According to Leung and others in their recent study of Hong Kong , the main driver of overall progressivity of health care financing there is direct tax (Leung, Tin et al. 2009). They also found the burden of direct tax to be heavily concentrated on the better-off both in absolute terms and relative to ability to pay. In Bangladesh, Sri Lanka and Thailand, the poorest 20% of households make virtually no contribution to direct taxes while the richest fifth contribute more than 90% of tax revenues (O'Donnell, van Doorslaer et al. 2008). In general in most studies the progressivity of direct tax is largely influenced by personal income tax.

Indirect taxes on the other hand, although found to be progressive in Ghana, are only mildly progressive compared to the direct tax. In a study by Wagtsaff and others on equity in health care financing in Denmark, France, Ireland, Italy, the Netherlands. Portugal, Sapin, Switzerland, UK and the USA, they found that indirect taxes were regressive in most of the countries, particularly so in Ireland and the US (Wagstaff, van Doorslaer et al. 1999). The finding in Ghana was consistent with their results from Italy, Portugal and Spain. The progressivity of indirect taxes in these countries was due to higher VAT rates being levied on luxury goods. In Ghana the progressivity of indirect taxes is also influenced by the wide range of VAT exemptions on goods (especially agricultural goods) largely consumed by the poor and the progressivity of import duties.

The results on the progressivity of indirect tax in Ghana are also consistent with findings from Asia where O'Donnell and others (2008) also found the burden of indirect taxes to be concentrated on the better off but to a much lesser extent than direct taxes in all countries except in Japan. Japan was the only country in the Asian study in which the share of indirect taxes contributed by the least well off is greater than their respective share of total ability to pay (ATP) (O'Donnell, van Doorslaer et al. 2008). The progressivity of indirect taxes in Thailand, Hong Kong, Nepal and Bangladesh is explained by the exemption of food from taxation in Thailand and Bangladesh and the propensity of poor rural households in Bangladesh and Nepal to consume local products that are not subject to taxation (O'Donnell, van Doorslaer et al. 2008) just as is the case in Ghana. In Sri Lanka, by contrast, only some food items are tax-exempt and so indirect tax is only mildly progressive and verging towards proportionality (O'Donnell, van Doorslaer et al. 2008).

In the EQUITAP study in Asia, only the incidence of broad categories of financing mechanisms (direct tax, indirect tax, insurance and OOP) are revealed. Indirect tax in which import duty is a part was found to be progressive in most of the countries including Bangaldesh, Nepal, Thailand, South Korea, Sri-Lanka Taiwan and China (O'Donnell, van Doorslaer et al. 2008).

Pooling the direct and indirect taxes together, the results for total tax are also progressive. The progressivity of overall tax in Ghana is driven largely by the progressivity of direct taxes as is the case in Hong Kong and many Asia countries in the EQUITAP study

(O'Donnell, van Doorslaer et al. 2008). The progressivity of the total tax payment in Malaysia and Madagascar was also driven largely by the strong progressivity of direct tax (Younger, Sahn et al. 1999; Yu, Whynes et al. 2008). Given a Kakwani index of 0.098 this confirms that Ghana's tax system is indeed progressive.

5.2 Non-tax

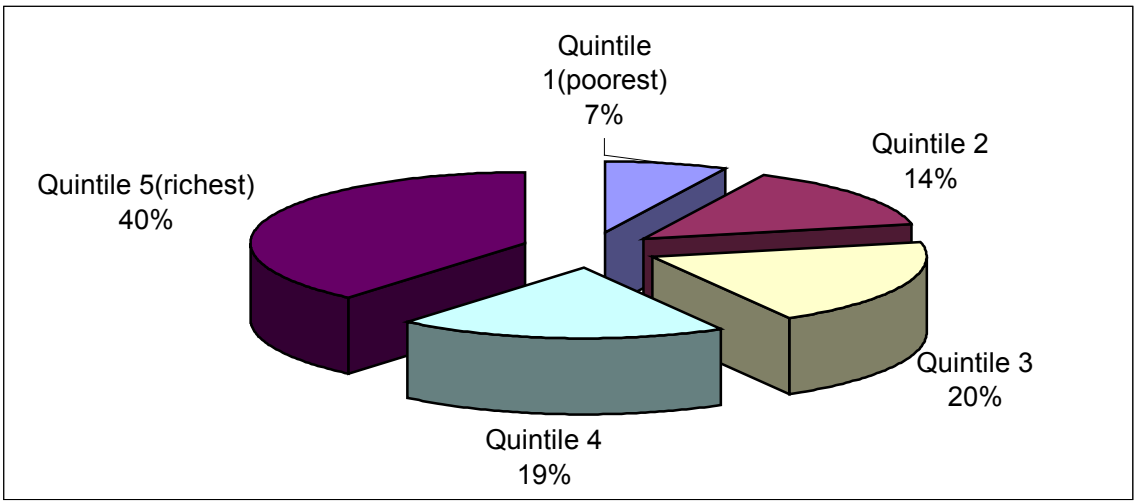
Apart from tax revenue and donor support, health care in Ghana is also significantly financed by non-tax financing mechanisms. These include out-of-pocket payments and national health insurance (NHI) contributions. This section provides the results of the financing incidence of OOP payments and NHI contributions.

5.2.1 Out-of-pocket (OOP) payments

Direct payment is quite significant in Ghana and accounts for over 40% of health care expenditure (Ramachandra and Hsiao 2007). This figure may well reduce as the NHI introduced in 2004 expands to provide financial protection to more people. It is important to note that OOP payments include payments for private care (including traditional or herbal) and medicines, co-payments for those privately insured (which are not common in Ghana) and user charges for public health care. Given the significance of OOP payments, it is important to know the distribution of its burden on the population.

Figure 5.30 depicts the percentage share of OOP payments across socio-economic groups. Although the rich (i.e. quintile five) pay a higher percentage share of OOP payments, the poorest 40% of households also pay a substantial share (over 20%) of these.

Figure 5. 30: Percentage share of OOP payment by consumption expenditure quintile



To obtain the burden of OOP payments across socio-economic groups, we calculated OOP payments as a proportion of household consumption expenditure using both the per capita and per adult equivalent measures. As Table 5.10 depicts, there is not much difference in the results across the two measures. The findings also show that poorer households are bearing more of the burden of OOP payments than richer households. Whilst the poorest 20% of households are contributing about 3% as a proportion of their consumption expenditure, the richest 20% are paying 2.7%. This is not surprising as the poor are more likely to get ill and will need to spend more of their meagre resources to seek health care as most OOP payments are flat amounts that are not differentiated according to income. The results are again consistent with findings elsewhere. In South Africa for instance, whilst 20% of poorer households paid almost 1.8% as a proportion of their consumption expenditure as OOP, the richest 20% contributed 1.6% (Ataguba and McIntyre 2009).

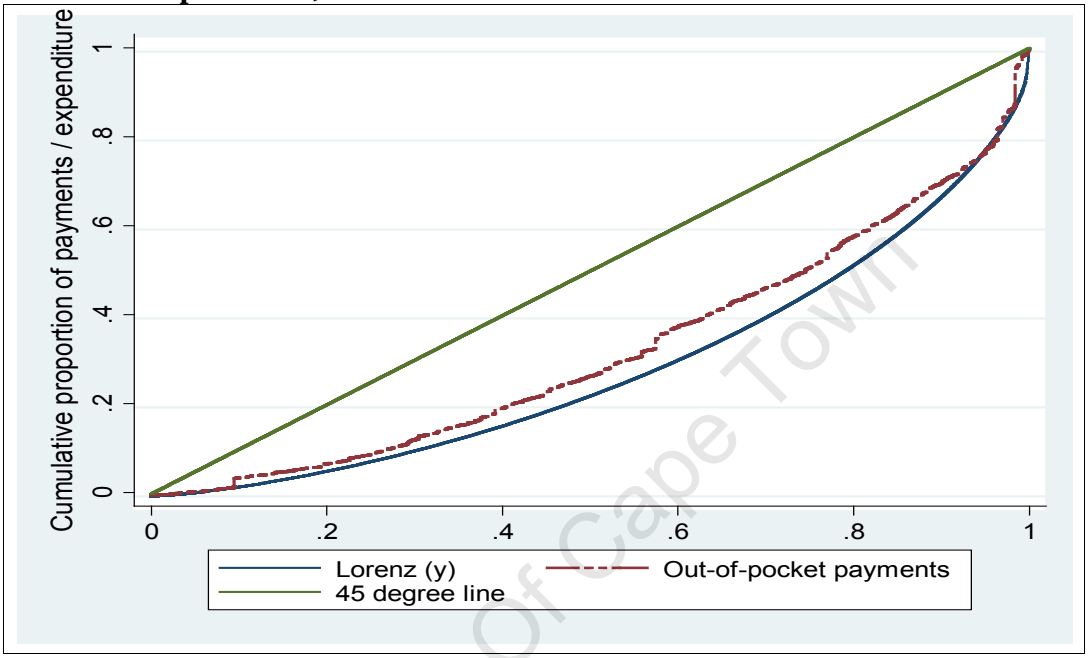
Table 5. 10: Out-of-pocket payment as percentage of consumption expenditure quintile by per capita and per adult equivalent measure rounded to nearest 1000 or even million

SES measure	Consumption expenditure (CE)	OOP payment	OOP payment as % of CE
Per capita consumption expenditure measure			
Quintile 1	8,105,764,266,916	242,368,093,685	2.99%
Quintile 2	16,583,595,884,539	479,040,682,954	2.89%
Quintile 3	23,400,461,937,488	670,560,105,672	2.87%
Quintile 4	29,874,259,995,433	641,800,915,552	2.15%
Quintile 5	47,035,271,455,110	1,296,229,009,815	2.76%
Total	124,999,353,539,490	3,329,998,807,678	2.66%
Per adult equivalent consumption expenditure measure			
Quintile 1	8,028,723,732,010	232,949,993,774	2.90%
Quintile 2	16,592,305,217,657	458,721,074,868	2.76%
Quintile 3	23,176,209,034,541	690,131,969,081	2.98%
Quintile 4	28,719,103,171,063	626,298,576,337	2.18%
Quintile 5	48,483,012,384,215	1,321,897,193,618	2.73%
Total	124,999,353,539,490	3,329,998,807,678	2.66%

Exploring the regressivity of OOP further, the concentration curve for OOP payments and the Lorenz curve for consumption expenditure are constructed (see Figure 5.31). This shows that OOP payments are regressive. This is because the concentration curve of OOP

payments dominates the Lorenz curve throughout the distribution except for the last section (top right corner) where the two curves (Lorenz and concentration) appear to coincide. The regressivity of OOP payments shows that the poor in Ghana are bearing the largest burden of OOP payments.

Figure 5. 31: Concentration curves of OOP payments and Lorenz curve of household expenditure, Ghana: 2005/2006



OOP payments [though not statistically significant (P-value =0.463)] are regressive as indicated by the negative value for the Kakwani index (-0.070) in Table 5.11. User fees, which are a major component of OOP payments, play a significant role in the regressivity of OOP payments in Ghana. Ghana has been noted for fully complying with and implementing the World Bank and IMF policies of cost-sharing in health care financing to the point that the country at one stage managed to achieve a 15% cost recovery level at public health facilities (Garshong, Ansah et al. 2002). The exemptions or waiver policy for the poor, which were brought in alongside the introduction of user charges and which aimed to relieve the burden on the poor were poorly implemented. This weakened the intended cushioning effect on the poor of high user fees (Arhin-Tenkorang 2001; Garshong, Ansah et al. 2002; Arhin-Tenkorang 2004). In addition to user fees, people, especially the poor, also make substantial direct payments at private health institutions including traditional and spiritual healers. These payments are often not captured in formal health expenditure data but were collected in the 2005/2006 GLSS survey which enabled a comprehensive and accurate analysis of the incidence of OOP.

Table 5. 11: OOP Payment indices

	index
Concentration index	0.354
Gini coefficient	0.424
Kakwani index	-0.070

The regressivity of OOP payments in Ghana is consistent with findings from South Africa, Tanzania and elsewhere. OOP payments are regressive in South Africa because the exemptions or waivers in place may not be far reaching enough to provide financial protection for the poor and vulnerable. Similar reasons as in Ghana account for the regressivity of OOP payments in Tanzania. A study in Bangladesh revealed that OOP payments were regressive with a Kakwani index of -0.10 and this was due to lack of a socio-economic gradient in the choice of providers as poor people were as likely to use private providers as rich people (Rannan-Eliya, Pande et al. 2001).

OOP payments also emerged as being regressive in earlier studies by Wagstaff and others in Europe and the US. OOP payments were regressive in all the countries that were studied except Spain but the extent of regressivity of OOP payments varied across the countries. The Netherlands (-0.059) and Italy (-0.004) had mild regressivity whilst Switzerland (-0.263) and the USA (-0.296) were very regressive. That OOP payments were only mildly regressive in Italy and the Netherlands, stems from the fact that private insurance cover taken up by people in the higher income groups was not comprehensive enough and included co-payments (Wagstaff, van Doorslaer et al. 1999). In the Netherlands for instance, many of the expenditures associated with OOP payments were incurred by the privately insured in the upper half of the income distribution who had insurance policies with substantial deductibles or which excluded primary care. That OOP payments were found to be regressive in Switzerland and the USA was due to the fact that - with the exception of Medicaid members and some privately insured in the US for instance - all are making co-payments irrespective of income. The two countries also have predominantly private financing systems (Wagstaff and van Doorslaer 1992).

However, similar studies elsewhere have found OOP payments to be progressive. For instance, in Sri- Lanka, OOP payments were judged to be very progressive, in fact more progressive (Kakwani index of 0.548) than tax payments. The reason for this is a general reliance by the poor on subsidised and mostly free care provision by the government and the switch to unsubsidised use of private providers by those with higher incomes. OOP

payments were also progressive (Kakwani index = 0.3952) in Malaysia. In that country it was the third most progressive health care payment mechanism after direct tax and private health insurance. The reasons for this progressivity were similar to what pertained in Sri Lanka, the main one being that there was a switch to the use of private health services by the rich but the poor predominantly relied on subsidised public health services.

The EQUITAP study in Asia also found OOP payments to be progressive or mildly progressive in all the countries in the study except for the most developed country, namely Japan. The argument put forward in the study to explain the progressivity of OOP payments is that the lack of insurance cover in developing countries means that the better-off must pay OOP to secure quality health care, typically from the private sector. Also there is a constraint on the ability of poor households to pay for health care to such an extent that the poorest of the poor simply cannot afford health care. The study further argued that studies that come out with a regressive OOP payments for developing countries probably did not use nationally representative expenditure surveys but relied on data restricted to small rural areas (O'Donnell, van Doorslaer et al. 2008). Though this argument may have an element of truth to it, it fails to recognise that poor households seek health care at many different places including traditional and spiritual healers and often have to make substantial and catastrophic payments because they go only when their illness is severe. Further, payment in kind can be substantial. In addition, high user fees could be less prevalent in some Asian countries than in African countries, including Ghana.

5.2.2 Health insurance contributions

Unlike the incidence calculations for tax and OOP payments, both the data sets of the GLSS survey and the SHIELD survey were used to examine National Health Insurance contributions[45]. As stated in chapter four, the SHIELD survey was conducted primarily to unearth factors affecting the uptake of health insurance by households. Even though information on the NHI was captured in the GLSS study, this survey was conducted just a year into the implementation of the NHI and at the time (2005) the total coverage was just

[45] SHIELD survey data was used to calculate informal NHI contributions and GLSS survey in addition to SSNIT data were used to calculate the formal NHI contributions.

about 8%. It is important to state that formal sector workers[46] were included immediately after the implementation of the NHIS; thereafter there was a gradual extension to the informal sector. The SHIELD survey of 2008 offers the opportunity to obtain information on a later situation (in which the NHI now covers above 40% of the population) with regard to its incidence. The results for the incidence of formal sector contributions, the informal sector premium contributions and the combined incidence of the national health insurance are presented below (Table 5.12). Box 4.1 (see methods chapter) outlines how the consumption expenditure variable was predicted in the SHIELD survey to ensure comparability between the two surveys.

Table 5.12 depicts the distribution of consumption expenditure and contributions to the NHI across per capita household consumption expenditure quintiles. The incidence of NHI contributions is in two forms, the formal sector workers' contributions for 2008 and the informal sector premium contributions also in 2008. The third column in the table shows the incidence of the combined formal and informal sector premium contributions i.e total NHI contributions. It can be observed from Table 5.13 that the formal sector contribution is progressive. This is not surprising as the formal sector workers contributions are based on 2.5% salary deductions and the denominator used in this analysis is household consumption expenditure.

Four years into the roll-out of the NHI, and with coverage now above 40% (see Chapter Two) largely because of a higher coverage of the informal sector, the SHIELD survey offered the opportunity to calculate the incidence of the premiums paid by the informal sector. This holds the key to equitable health care financing and the expansion of coverage to move towards universal cover. The results in Table 5.12 show that informal sector NHI contributions are regressive. The reason is that everybody from the informal sector pays a flat premium. Though the NHI act stipulates a graduated premium payment based on the income of individuals, the difficulty of establishing who is in which income group, makes its implementation impossible.

[46] Though formal sector workers were immediately included, individuals had to register and get a card to qualify as a cardholding member.

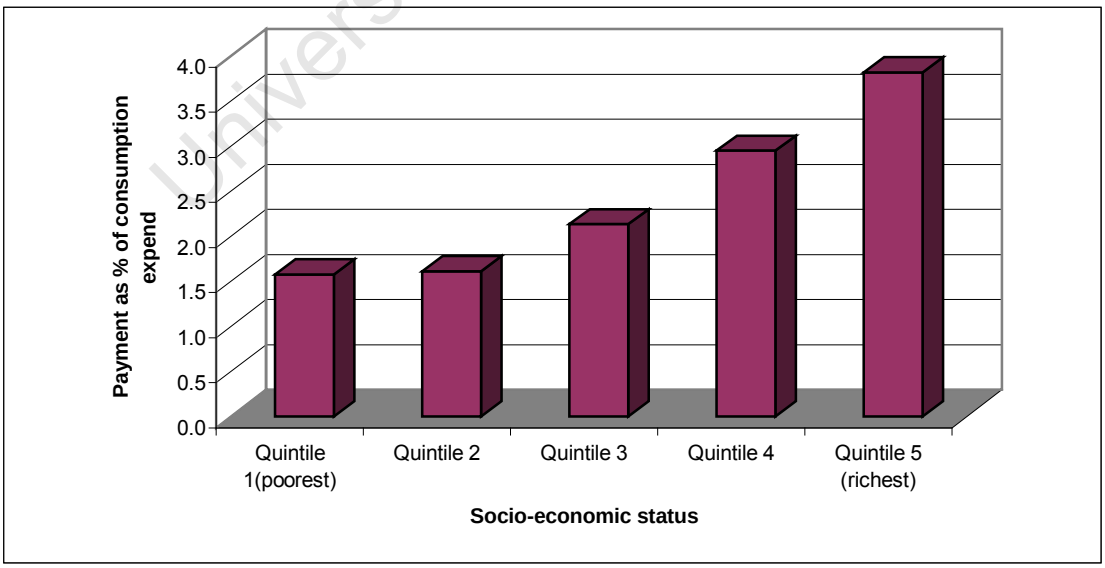
Table 5. 12: NHI contribution across consumption expenditure quintile

SES	Formal sector NHI contribution as proportion of consumption expend*	Informal sector NHI contribution as a proportion of consumption expend**	Total NHI contribution as a proportion of consumption expend
Quintile 1	1.10	3.85	1.58
Quintile 2	1.32	2.54	1.61
Quintile 3	2.26	1.88	2.13
Quintile 4	3.44	0.96	2.95
Quintile 5	4.49	0.27	3.82

*Using GLSS and SSNIT data, **Using SHIELD survey data

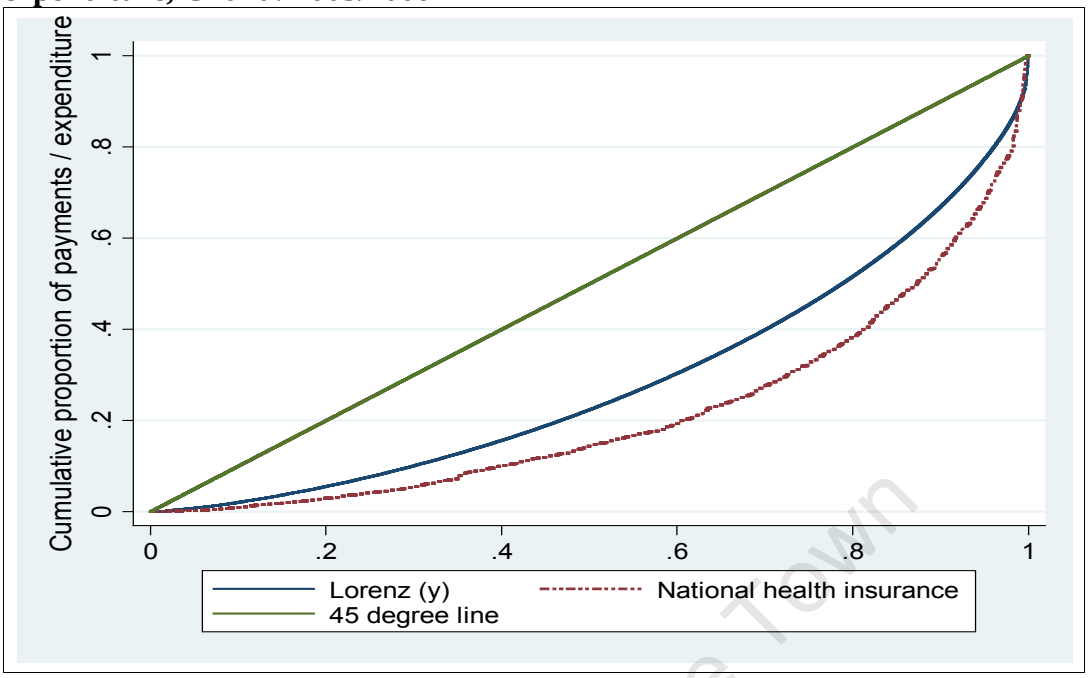
The incidence of the total NHI contributions is progressive as can be seen in Table 5.12. This is because the formal sector workers' contributions are more than five times those of the informal sector with the result that the incidence of the total NHI contribution is progressive (Figure 5.32). Whilst the poorest 20% of households are paying 1.58% of consumption expenditure, the richest 20% contributes 3.82%. This suggests that the NHI is progressive and its progressivity is strongly influenced by the progressivity of the formal sector contributions. It is important to note that the informal sector premium contribution is just 5% of the total national health insurance fund.

Figure 5. 32: Health insurance contribution as a proportion of household consumption expenditure by quintile



The concentration curve of total NHI contributions confirms again the progressivity of the total NHI contributions (Figure 5.33). The concentration curve lies completely outside the Lorenz curve.

Figure 5. 33: Concentration curves of NHI payments and Lorenz curve of household expenditure, Ghana: 2005/2006



Further confirmation of the progressivity of the total NHI contribution is shown in Table 5.13. That the Kakwani index is positive (0.144) confirms that the NHI contribution is progressive. Again this revelation is good news for policy makers and government to further strengthen the NHIS in the country. The NHIS is a fast growing financing scheme and its contribution to the health sector funding has risen from 5% in 2005 to over 20% in 2008. The coverage also rose from around 8% in 2005 to over 40% in 2008. This fast growth is unprecedented in the history of social health insurance. It needs to be sustained to provide effective financial protection and universal coverage to all people in Ghana. Given that the NHI has been found to be progressive, it places a responsibility on policy makers, stakeholders and government to ensure that the scheme is sustained. However, NHI contributions could be regressive if the informal sector contributions begin to account for a significant proportion of the total NHI contribution. This could happen if more people in the informal sector enrol and/or there are increases in premium payments.

Table 5. 13: NHI Payment indices

	NHI contribution
Concentration index	0.567
Gini coefficient	0.424
Kakwani index	0.144

The finding of the progressivity of NHI payments in Ghana is consistent with results elsewhere. Social health insurance was found to be progressive in Malaysia (Yu, Whynes et al. 2008). The Malaysian social health insurance is an amalgamation of contributions to EPF (employment provident fund) and SOSCO (social security organization). The EFP was progressive but conversely the imposition of an upper earning limit for SOSCO contributions and the ineligibility of the affluent as members made SOSCO contributions regressive. However the combined effect makes the social health insurance contribution progressive in Malaysia (Yu, Whynes et al. 2008).

In most developing countries, where typically only formal sector workers are covered (China, Indonesia, the Philippines), the poor make little contribution to social insurance revenues simply because they do not belong to the system. However, in such partial health insurance systems, the better-off do not only pay more, they get more (O'Donnell, van Doorslaer et al. 2008). The poor do not contribute but they are also denied the benefits of coverage. In South Africa for instance the private health insurance contributions were found to be very progressive suggesting the burden is on the better-off, but the poor do not belong to the schemes and so are not benefiting (Ataguba and McIntyre 2009). In Tanzania, the social health insurance is progressive because contributions are made largely by formal sector employees (who mostly belong to the better-off group) and they are the ones who benefit. The progressivity of the Portuguese social health insurance scheme also stems from the fact that although contributions to the scheme are compulsory and earnings related, the scheme is not universal, covering and requiring contributions from only certain employees (the majority of these working in the public sector) (Wagstaff and van Doorslaer 1992). The progressivity is due to the fact that these workers tend to be in the higher income groups.

Contrary to the finding in Ghana, earlier studies in France, the Netherlands and Spain found social health insurance contributions to be regressive (Wagstaff, van Doorslaer et al. 1999). This stems from the fact that contributions tended to be proportional to earnings only up to a ceiling. The regressivity would be even higher if certain groups such as pensioners were not exempt from contributions (Wagstaff, van Doorslaer et al. 1999).

5.3 Dominance testing

Dominance testing (using a do-file prepared for assessing the dominance of financing mechanisms[47]) was also undertaken (see Table 5.14). This is another method of testing for the relative progressivity of the different sources of financing. In Table 5.14, D indicates that the concentration curve of the row source dominates (is more progressive than) that of the column source (O'Donnell, van Doorslaer et al. 2008). Dominance is rejected if there is at least one significant difference in one direction and no significant difference in the other, with comparisons at a 5% level of significance; non-D indicates that there is non-dominance between the concentration curves (O'Donnell, van Doorslaer et al. 2008). It is clear that the concentration curve for the fuel levy dominates the rest of the health care financing mechanisms. On the other hand, the concentration curve for personal income tax is clearly dominated by all the other financing mechanisms. This further confirms that personal income tax is the most progressive of all the financing mechanisms. The regressivity of the fuel levy is a worrying phenomenon. Apart from personal income tax and the fuel levy, the other financing mechanisms do not dominate completely or are not entirely dominated. For instance, the concentration curve for National Health Insurance contributions is dominated by all others except corporate tax and import duty.

Table 5. 14: Dominance testing

Health care payments	Fuel levy	OOP payments	Corporate income tax	VAT	Import duty	National health insurance	Personal income tax
Kerosene levy	D	D	D	D	D	D	D
Fuel levy		non-D	D	D	D	D	D
OOP payments			non-D	non-D	non-D	D	D
Corporate income tax				non-D	non-D	Non-D	D
VAT					non-D	D	D
Import duty						Non-D	D
National health insurance							D

5.4 Total health care financing incidence

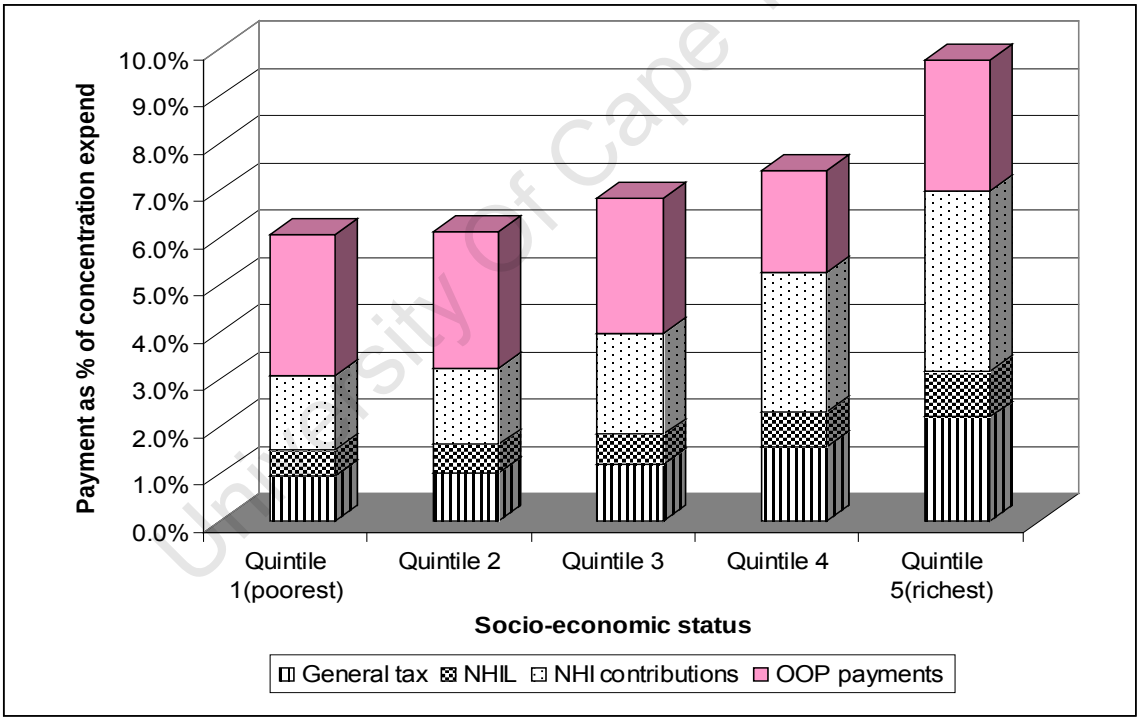
Figure 5.34 combines all sources of health care payment in Ghana (general tax, NHIL, NHI contributions and out-of-pocket payments) and measures total payments as a

[47] http://siteresources.worldbank.org/INTPAH/Resources/Publications/459843-1195594469249/dominance.ado *(version 1.0 Owen O'Donnell- 9 June 2006)*

proportion of consumption expenditure. The results in Figure 5.34 thus provide the answer to the key question "who pays for health care in Ghana?" The brief answer is largely the better-off but the poor are making a significant contribution as well.

Figure 5.34 shows that health care financing is generally progressive. It should be noted again that only a portion of total government tax resources (i.e. 15% in 2005/2006) was allocated to the health sector and this is factored into the calculation of the general tax. Whilst the poorest 20% of households are contributing 6% as a proportion of their consumption expenditure, the richest quintile is contributing about 10% so that the main burden of overall health care financing is on the rich. Nevertheless, the poor are also making a substantial contribution of their meagre income to health care, particularly through OOP payments.

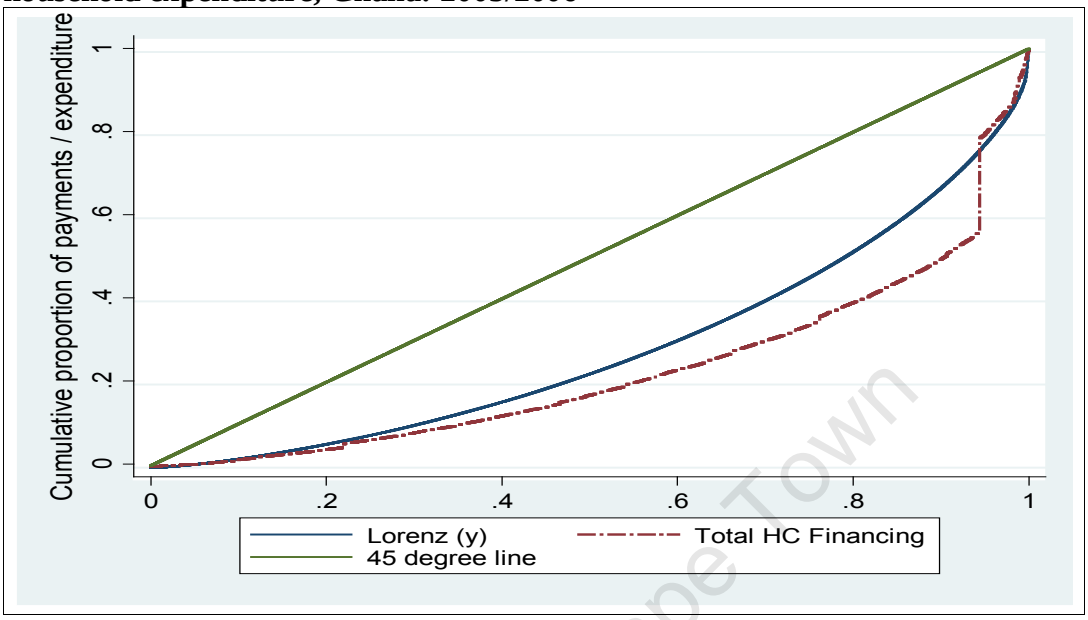
Figure 5. 34: Distribution of total health financing incidence in Ghana



The concentration curve of total health care payments in Figure 5.35 is dominated by the Lorenz curve which also indicates progressivity. Further confirmation of progressivity is illustrated in Table 5.15. The Kakwani index of 0.071 (robust standard error of 0.067) confirms that Ghana's health care financing is progressive. The reasons for this stem from the high progressivity of personal income tax, the progressivity of VAT, the import duty

and the national health insurance contributions. However the fact that out-of-pocket and fuel levy payments are regressive diminishes the level of overall progressivity.

Figure 5. 35: Concentration curve of total health financing and Lorenz curve of household expenditure, Ghana: 2005/2006



The findings from Ghana are again consistent with findings in other countries. For instance overall health care financing in South Africa was found to be progressive but this progressivity was largely influenced by the private health insurance contributions which is benefiting only the few who belong to these schemes (Ataguba and McIntyre 2009). The Kakwani index for total financing was 0.065. Health care financing in Asia is also generally progressive except for Japan, Korea and Taiwan (the more advanced economies) (Table 5.16). Higher income households contribute more as a proportion of ability to pay in most of the low and middle countries in Asia (O'Donnell, van Doorslaer et al. 2008). In Malaysia, households contribute progressively towards direct taxes, social health insurance, private health insurance and out-of-pocket payments. Indirect tax was the only regressive financing mechanism in Malaysia (see Table 5.16), the reason being that the way in which sales taxes (which represented indirect taxes) are levied depends on the type of goods, irrespective of the household's ability to pay. The poor naturally have a lower ability to pay and end up spending a higher proportion of their incomes on purchasing goods. However, the combined effect of the progressivity of the other financing mechanisms in Malaysia results in overall progressive financing (Yu, Whynes et al. 2008).

Table 5. 15: Cumulative shares of health payments by consumption expenditure quintile, Ghana 2005/2006

Per capita Household (HH) Expenditure Quintile	Per capita HH Expend	Direct taxes			Indirect taxes					Non-tax		HCF incidence (total)
		Personal Inc tax	Corp Inc tax∞	**Direct tax**	Value-added tax±	Import duty	Fuel levy	Kerosene levy	**Indirect tax**	NHI	Out-of-pocket	
Poorest 20% (Standard error)	**5.53%** (0.096)	**1.25%*** (0.208)	**3.38%*** (0.807)	**1.99%*** (0.271)	**3.26%*** (0.931)	**4.02%*** (0.496)	**6.43%*** (0.197)	**16.76%*** (0.376)	**4.07%*** (0.570)	**2.91%*** (0.371)	**6.92%** (1.810)	**4.07% *** (0.471)
Poorest 40% (Standard error)	**15.64%** (0.2371)	**6.36%*** (1.616)	**10.70%*** (2.469)	**7.85%*** (1.294)	**8.91%*** (1.930)	**11.48%*** (1.411)	**17.97%*** (0.425)	**37.82%*** (0.594)	**11.34%*** (1.330)	**10.06%*** (0.994)	**19.36%** (2.758)	**11.99%*** (1.004)
Poorest 60% (Standard error)	**30.38%** (0.4288)	**13.01%*** (1.865)	**23.58%** (4.962)	**16.66%*** (1.910)	**19.42%*** (4.399)	**22.04%*** (2.691)	**33.88%*** (0.676)	60.49%* (0.685)	**22.85%*** (2.758)	**19.31%*** (1.344)	**37.72%** (4.647)	**24.02%*** (1.914)
Poorest 80% (Standard error)	**51.64%** (0.6813)	**27.84%*** (2.651)	**44.05%** (8.462)	**33.43%*** (3.131)	**53.54%** (9.624)	**39.78%*** (4.851)	**54.60%*** (0.960)	**81.80%*** (0.630)	**49.47%** (5.574)	**38.42%*** (2.134)	**57.98%** (6.395)	**46.81%** (3.556)
Test of Dominance -Against 45% line	-	-	-	-	-	-	-	-	-	-	-	-
-Against Lorenz C		-		-	-		+	+	-	-		-
Concentration index/Gini coeff	0.424	0.680	0.522	0.625	0.473	0.552	0.383	0.016	0.481	0.567	0.354	0.495
(Robust SE)	(0.019)	(0.040)	(0.087)	(0.037)	(0.074)	(0.038)	(0.014)	(0.013)	(0.041)	(0.031)	(0.059)	(0.033)
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Kakwani index		***0.256***	***0.099***	***0.202***	***0.049***	***0.129***	***-0.041***	***-0.407***	***0.057***	***0.144***	***-0.068***	***0.071***
(Robust SE)		(0.112)	(0.207)	(0.101)	(0.144)	(0.082)	(0.036)	(0.034)	(0.081)	(0.074)	(0.093)	(0.067)
(P-value)		(0.022)	(0.632)	(0.046)	(0.733)	(0.115)	(0.261)	(0.000)	(0.477)	(0.051)	(0.463)	(0.291)

Source: Author;

Note: For shares: **Bold** indicates significant difference from population share (5%)

* indicates significant difference from expenditure share (5%)

(Standard errors for concentration and Kakwani indexes are robust to heteroskedasticity and within cluster correlation)

∞ Assumption is that corporate tax is distributed equally (50/50) across households (based on reported consumption of manufactured goods) and shareholders (based on receipt of dividends) ** NHIL: National Health insurance levy (2.5% of social security of formal workers)

Dominance test (- indicates the 45% degree line/Lorenz curve dominates the concentration curve: + indicates concentration curve dominates 45%-degreeline/Lorenz curve. Blank indicates non dominance. ± NHIL has same results as that of VAT

Table 5. 16: Cross-country comparison of progressivity indices (distributional incidence of health care financing)

Country	Year	Financing mechanisms				Total financing
		Direct tax	Indirect tax	NHI/SHI contributions	OOP or direct payments	
Africa						
Ghana	**2005/2006**	**0.202**	**0.057**	**0.144**	**-0.068**	**0.071**
South Africa	2005/2006	-	-	-	-0.0259	0.065
Asian countries						
Bangladesh	1999/2000	0.552	0.111	-	0.219	0.214
Thailand	2002	0.510	0.182	0.180	0.091	0.197
Phillippines	1999	0.381	0.002	0.205	0.139	0.163
Malaysia	1998/1999	0.395	-0.078	0.081	0.104	0.186
Taiwan	2000	0.244	0.040	-0.075	-0.079	-0.029
Sri-Lanka	1996/1997	0.569	-0.010	-	0.069	0.085
Indonesia	2001	0.196	0.074	0.306	0.176	0.173
China	2000	0.152	0.040	0.235	-0.017	0.040
Nepal	1995/1996	0.144	0.114	-	0.053	0.063
Japan	1998	0.100	-0.223	-0.042	-0.269	-0.069
OECD countries						
Portugal	1980	0.279	0.079	0.277	-0.158	0.063
The Netherlands	1987	0.185	-0.009	-0.002	-0.059	-0.034
Spain	1980	0.170	0.023	-0.063	0.016	-0.023
Italy	1987	0.054	0.001	0.028	-0.004	0.022
USA	1981	0.162	-0.174	-0.035	-0.387	-0.145
UK	1985	0.131	-0.059	0.043	-0.190	0.032
Ireland	1987	0.250	-0.120	0.110	-0.070	0.034

Source: Wagstaff, van Doorslaer et al. 1999; O'Donnell, van Doorslaer et al. 2008): Authors own calculation

5. 5 Summary

The chapter assessed the incidence of health care financing in Ghana employing the Kakwani's progressivity index. This analysis represents the first study to measure progressivity of each of the financing sources and the whole health care financing system in Ghana in a comprehensive manner (Table 5.15).

As mentioned earlier, the Kakwani index of 0.071 demonstrates equitable financing in the Ghanaian health care financing system. As can be seen in Table 5.16, the results of the incidence in health care financing in Ghana are consistent with findings in some selected OECD and Asian countries. One consistent result from all countries is that,

direct taxes everywhere are progressive as shown by the positive Kakwani indices. OOP or direct payments are regressive in most of the countries including Ghana. The findings from Ghana which are specifically summarized in Table 5.15 and 5.16 suggest that the direct and indirect (except for fuel tax which was regressive) taxes and the National health insurance contributions are all progressive and OOP payments are the only regressive financing mechanism. Despite the growing NHIS, OOP could in future still remain a significant financing mechanism. The fact that households have to pay for drugs that are not covered by the NHI drug list and that traditional healers are not covered by the NHI means households will continue to encounter OOP payment problems. Out-of-pocket payments represent the greatest burden on households (especially the poorer ones) as far as health care financing is concerned and so the next chapter will examine the catastrophic and impoverishment effect of OOP payments.

Chapter Six: Catastrophic and poverty impact of health care payment

6.0 Introduction

From the previous chapter, out-of-pocket payments emerged as the *only regressive* form of health care payment in Ghana. The chapter also revealed that OOP payments, excluding transport costs, are about 3% of total household consumption expenditure. The share of OOP payments of total health care expenditure in Ghana is estimated at 48% (Leive and Xu 2008). This is significant and has implications for health care access and poverty. Although this is expected to decrease as the National Health Insurance currently in place expands in coverage, OOP payments will remain a significant source of health care finance in the country. The substantial share of OOP payments is consistent with other studies, for example direct payment for health care was 2.5% and 3.4% of total household expenditure in Paraguay and Thailand respectively (McIntyre, Thiede et al. 2005). In Burkina Faso and Sri-Lanka, OOP payments for health care were 4.4% and 6.5% of total household consumption expenditure respectively (McIntyre, Thiede et al. 2005). Direct health care expenditure is also 5% of total household expenditure in India (Garg and Karan 2009).

As stated in Chapter Three, out-of-pocket payments take two major forms, namely user fees for public sector health services and direct payments to private sector providers. User fees usually dominate, even though direct payments to the private sector are substantial. In the 1980s, when Ghana and many other Africa countries were suffering from macroeconomic stagnation as a result of negative growth and increasing indebtedness, the World Bank and IMF supported the introduction of user fees through loan conditionalities and the associated Structural Adjustment Programmes (SAPs). As mentioned in Chapter One, the Ghanaian government also thought at the time that introducing user fees would help to generate revenue to improve the quality of the health services, particularly by making drugs available at facilities which were then seriously under-funded (Nolan and Turbat 1995). The government also thought that by introducing user fees, communities would feel more involved and take ownership of local facilities. The World Bank, the IMF and other international organisations that favoured the introduction of user fees also argued such fees would prevent the frivolous use of health care service and would encourage people to comply with the referral system (de Ferranti 1985; Akin, Birdsall et al. 1987). It was further argued that user fees would promote equity since those who could afford to pay would ease the burden on government who could then concentrate its

resources on the poor (McIntyre, Gilson et al. 2005). Ghana adhered strictly to the introduction of user fees and thereby managed almost 100% recovery of drug costs.

However, the impact of user fees in Ghana has been disastrous. Revenue generation was relatively insignificant in terms of total health care costs and there was a more than two-thirds drop in utilisation of public health services, the fall being mainly among low-income and vulnerable groups (Arhin-Tenkorang 2000; Chuma, Musimbi et al. 2009). The exemption programme that was in place to cushion the effects of user fees was poorly implemented due to a lack of clarity and understanding of its operation. This resulted in many who were eligible for exemption not being exempt. One study in the Volta region of Ghana found that 84% of patients who were eligible for exemptions did not receive them (Nyonator and Kutzin 1999). A national study found that almost half of the clients interviewed who were eligible for exemptions had in fact paid for services (Garshong, Ansah et al. 2002). Research has also highlighted that the poor very seldom receive exemptions (Adams, Darko et al. 2002).

The result of introducing user fees was that people, and particularly the poor, were dying needlessly because they did not seek health care. Where households have to incur health care costs, they use coping strategies such as reducing consumption (often on very basic necessities of life), borrowing or selling vital household assets. Households sometimes have to divert resources that would have been used for food and other basic consumption to pay for health care. Indeed people (again especially the poor) were detained at public health facilities in Ghana to work in order to pay for the cost of their treatment (Garshong, Ansah et al. 2002). Evidence clearly shows that the most vulnerable households face enormous constraints in accessing care when they are required to pay user fees, particularly where geographic access is poor and other costs (e.g. for transport) of treatment seeking are high (Russell 2001; Russell and Abdella 2002; Russell 2004; McIntyre, Gilson et al. 2005; Akazili, Aikins et al. 2007; Chuma, Musimbi et al. 2009). With the significant levels of poverty in Ghana, household livelihoods are so fragile that if a member has to use health services and pay fees, the household may have to take actions to access cash that could lead to further impoverishment. Generally the implementation of user fees has had tremendous negative effects, not only in Ghana but in other African countries, to the point where those who vociferously supported its introduction have done an about-turn and are now arguing that low- and middle-income

countries should rather adopt some form of pre-payment for health care. The World Bank has acknowledged that "Out-of-pocket payments for health services – especially hospital care – can make the difference between a household being poor or not" (Claeson, Griffin et al. 2001; McIntyre, Gilson et al. 2005; Limwattananon, Tangcharoensathien et al. 2007) and are now indicating that alternative financing mechanisms such as insurance may be preferable.

This chapter reports on the catastrophic and impoverishment effects of out-of-pocket payments for health care in Ghana. The results in this chapter (which to my knowledge are the first of their kind in Ghana) can serve as a baseline for tracking the trend of catastrophic and impoverishing effects of OOP payments as the NHI expands. Though Ghana has implemented national health insurance, more than 40% of the population is not covered and not all diseases are covered. It therefore remains important to examine the catastrophic nature of this payment mechanism. I begin with catastrophic health care payments (a bit of literature or background is provided on current debates on catastrophic health care payment before the actual results).

6.1 Catastrophic health payments

There is considerable worldwide interest in fairness in health care financing (World Health Organization 2005). One conception of such fairness relates to whether households and individuals are protected from catastrophic health care expenditure (Ekman 2007; O'Donnell, van Doorslaer et al. 2008). Households without comprehensive health insurance or tax financing cover are exposed to the risk of incurring large expenditures when a household member falls ill. This can be catastrophic if that expenditure is too large relative to the resources available to the household (Xu, Evans et al. 2003; O'Donnell, van Doorslaer et al. 2008). It should be noted however that large health expenditure for a household does not necessarily mean that the household is faced with catastrophic health care payments. Rather payments are deemed catastrophic when the health care expenses in effect disrupts the household's living standards with regard to the purchase of other essential non-medical goods and services (Deaton 1997). According to O'Donnell and others (2008), the ideal way to measure catastrophic health expenditure is by using longitudinal data (Xu, Evans et al. 2003; Wagstaff 2006; O'Donnell, van Doorslaer et al. 2008) which will allow observations over time on how living standards of households have been disrupted through such health shocks. However, in the absence of

such longitudinal data, cross sectional data (like the Ghana Living Standard Survey) can be used in which case some approximation of the disruptive effect of health care expenditure on material living standards must be made (Xu, Evans et al. 2003).

A common approach, which is initially applied in this study, is to define medical spending as catastrophic if it exceeds some fraction or threshold of household income or total expenditure in a given period of time (usually one year). It can be seen very readily that such a measure is limited in its ability to capture all that we want to capture. It is however a useful starting point. However, there is no consensus in the literature on the threshold proportion of household expenditure to define as catastrophic (O'Donnell, van Doorslaer et al. 2008). However, thresholds of 10% and 40% for total expenditure and non-food expenditure respectively are often cited as representing the points at which the absorption of household resources by spending on health care is considered to create severe disruption to living standards (Ranson 2002; Xu, Evans et al. 2003; Wagstaff 2006). A major limitation of these threshhold levels is that they are arbitrary and a matter of subjective judgment.

Two points on the measurement of catastrophic spending can be identified in the literature. The first is that this approach to identifying catastrophic payments only identifies those who actually incurred catastrophic health expenditures and ignores those who could not meet the expenditure and therefore were not able to seek treatment (Ranson 2002). Recognising this, Pradhan and Prescott (2002) in their analysis of Indonesia health care utilization and expenditure data estimate what they term “exposure to” rather than incurring of catastrophic payments. They recognized that the conventional survey-based measures of exposure to catastrophic financial risk understate the actual risk faced by poorer households that do not see care because of its cost (and thus reported zero health expenditures). Another limitation is the fact that illness shocks have catastrophic economic consequences not only through medical expenses but also as a result of lost earnings. In Indonesia for example Gertler and Gruber (2002) found that loss of earnings is more important than medical expenditure. In Ghana, Akazili et al (2007) observed that the indirect cost of an episode of malaria was over 70% of the total economic burden of malaria.

These limitations not withstanding, health care spending in excess of a substantial fraction of household resources is informative, if at least with respect to a part of the catastrophic economic consequences of illness even if it does not fully identify the welfare losses from a lack of financial protection against health shocks (van Doorslaer, O'Donnell et al. 2007).

Given the arbitrariness of the threshold budget share, the prevalence and intensity of catastrophic payments at a number of thresholds (5% through to 40%) are presented. Since in developing countries like Ghana, payment for health care can crowd-out food expenditure relative to total expenditure, results for both total expenditure as well as non-food expenditure are presented. The percentage of households incurring catastrophic payment necessarily falls as the threshold is raised, irrespective of the index used to estimate it. This shows, as is inevitable, that the incidence and intensity of catastrophic health care payments are a function of the threshold adopted.

Now the results: in Table 6.1, 11% of Ghanaian households spent in excess of 5% of total household resources on health care in 2005/2006. At a threshold of 10%, the number of households reduces by half. About 3% of households are observed to have spent in excess of 20% of the total household resources. The figure of 11% of households spending in excess of 5% of total household resources in 2005/2006 appears higher when compared with other developing countries (Malaysia, Philippines and Thailand) whose findings are even a couple of years back. In 1998/99 for instance, only 7% of Malaysia households spend in excess of 5% of the total household resources on health care (van Doorslaer, O'Donnell et al. 2007). In the same year and using the poverty indicator survey, it was revealed that less than 10% of Philippines households spend in excess of 5% of their total household resources on health care (Wagstaff and van Doorslaer 2003). From a 2002 socio-economic survey, Thailand had less than 9% of their households spending in excess of 5% of their total household resources on health care. Higher figures were observed in China and Vietnam. For instance, 28% Chinese households recorded out-of-pocket payments in excess of 5% of their total pre-payment income. Vietnam recorded 38% of household in 1993 who had incurred catastrophic payment at the 5% threshold level (Wagstaff and van Doorslaer 2003) . A recent study in Nigeria, revealed that as many as 39% of households recorded out-of-pocket payment in excess of 5% of their total household resources on health care (Ichoku and Fonta 2008).

A high or low percentage of households in the country spending in excess of 5% of total household expenditure on health care is indirectly influenced by general economic development. Ghana's figure of 11% households incurring out-of-pocket payments in excess of 5% reflects the modest economic growth resulting in overall poverty reduction in the country (see Chapter Two) over the past decade. The economy recovered from negative GDP growth in the early 1980s to over 6% GDP growth in 2007/2008 (Ghana Statistical Service 2007; Institute of Statistical Social and Economic Research 2008).

Table 6. 1: Catastrophic health care payment in Ghana using the GLSS, 2005/2006

	Catastrophic health care payment using total household expenditure				*Catastrophic health payment using household non-food expenditure*			
Thresholds	**5%**	**10%**	**15%**	**20%**	**10%**	**20%**	**30%**	**40%**
Headcount								
Hcat	11.00%	5.16%	3.39%	2.56%	10.70%	4.91%	3.17%	2.43%
Con. Index	0.012	-0.016	-0.050	-0.065	-0.019	-0.045	-0.080	-0.087
Weighted headcount	10.87%	5.24%	3.56%	2.72%	10.90%	5.13%	3.42%	2.64%
Gap Measures								
Gcat*	1.83%	1..47%	1.26%	1.11%	3.39%	2.68%	2.29%	2.01%
PGcat*	16.66%	28.47%	37.22%	43.66%	31.72%	54.57%	72.26%	82.62%
Con. index	-0.048	-0.061	-0.0656	-0.0678	-0.104	-0.1223	-0.132	-0.139
Weighted gap (wGcat)	1.92%	1.56%	1.34%	1.19%	3.75%	3.01%	2.59%	2.29%

***Gcat=catastrophic payment gap; PGat=mean positive gap**

Table 6.1 also provides the catastrophic headcount using non-food expenditure as the measure of ability to pay. It is evident from the table that non-food needs absorb a considerable share of household resources. For instance 11% of households spent more than 10% of their non-food consumption expenditure on out-of-pocket expenditures. In Malaysia only 1% of households spent in excess of 10% of their non-food consumption on health care. Once basic food needs have been met, health care costs can account for a large portion of resources for a substantial fraction of the population. In similar studies in Asia, between 8% to 16% of households in countries like Nepal, Vietnam, Kyrgyzstan and Bangladesh spend in excess of 25% of non-food expenditure on out-of-pocket payments (van Doorslaer, O'Donnell et al. 2007; O'Donnell, van Doorslaer et al. 2008). The degree of poverty in Nepal and Kyrgyzstan implies that food absorbs a very large

share of household resources and reduces the share of total resources than can be devoted to health care.

However while the catastrophic headcount is informative, it takes no account of which category of income earner spends more catastrophically than others. This information is important and of concern not only to society but to policy-makers. Is it the poor or the rich who spend a greater proportion of their income on heath care? For instance if the poor were to be more prone to spending a greater proportion of their meagre income on health, this would be of greater concern to policy makers and the larger society, than if it were the better-off groups. The index that will enable us to get this information is the weighted catastrophic headcount index. This index is derived by multiplying the catastrophic payment headcount by the complement of the concentration index as indicated in Equation 4.9 in Chapter Four. If those who exceed the threshold tend to be poor, the concentration index will be negative; and visa versa. It can be observed from Table 6.1 that at a 5% proportion of total income threshold, 10.87% of the populationincur catastrophic total health care expenditure. The values decline to 2.72% at a 20% threshold. It is important to note that, at a 5% threshold, the weighted headcount value (10.87%) is slightly lower than the headcount (11.0%) at the same threshold. This means richer households are making slightly more catastrophic payments at this threshold (which is confirmed by the positive concentration index). However at higher thresholds of 10%, 15% and 20% of total household expenditure, the poor are more often faced with catastrophic health expenditure, as reflected by the negative concentration indices.

Switching to catastrophic health care payments using household non-food expenditure, the poor are burdened more with catastrophic expenditure. This is confirmed by the negative concentration indices (-0.065, -0.0454, -0.0803 and -0.0872), which make the values of the weighted headcount higher than the headcount. These results are to be expected given that food expenditures are a larger share of the resources of poorer households. Similar results are reported in China, South Korea, Nepal, Sri Lanka, Vietnam and Taiwan, all in Asia, where poorer households were more likely to incur more catastrophic expenditure than richer households (van Doorslaer, O'Donnell et al. 2007).

The findings in Ghana, where poorer households are more likely than higher income groups to make catastrophic health care payments at higher thresholds, reflect the weak implementation of the poverty reduction strategies and more importantly the user fee exemption package. The exemption policy in the health sector was introduced to cushion the effects of user fees in the 1980s. This exempts the poor, the aged (70+), children under five and antenatal care services. But over the years, inefficiency and lack of ability to identify the poor and the aged, etc. have hindered effective exemption implementation (McIntyre 2003). Where exemptions were more effectively implemented in countries like Malaysia, Philippines, Indonesia and Thailand, catastrophic payments are made disproportionately by the better-off groups.

Headcounts give the prevalence and not the intensity of catastrophic payments. As noted in Equation 4.7 (Chapter Four), the intensity is simply the mean payment in excess of the threshold (this is the mean positive gap or overshoot). It is important to note that both the prevalence and the intensity are reflected in the catastrophic payment gap. Table 6.1 illustrates the results of the gap, the mean positive gap, the concentration indices and the weighted gap. It can be observed that the indices of the gap and the weighted gap decline in both the total household expenditure and non-food expenditure measures as we move from a lower to a higher threshold. The negative values of the concentration index show that it is the poor who are more likely to incur health payments exceeding the thresholds. The intensity of catastrophic payments thus affects the poor more than the rich for both the total household expenditure and non-food expenditure measures. The results of the mean overshoot are staggering, suggesting that there is a high intensity of catastrophic health expenditure in the population, especially among the poor, and it is more pronounced with non-food expenditure. For instance among those devoting more than 20% of total expenditure to out-of-pocket payments on health care, the average OOP payment share exceeds this threshold by almost 44 percentage points (see Table 6.1), giving a significant OOP budget share of 64%[48]. The average budget share for those exceeding the 20% of non-food expenditure threshold is much higher; it is 75% OOP budget share. This reflects a higher percentage of food shares of total household expenditure especially among the poor. From Nepal's 1999/2000 household expenditure survey, among those spending more than 25% of their non-food expenditure on OOP payment, the average OOP budget share exceeded this by 34 percentage points, giving a

[48] The figure 64 is obtained from the percentage points almost 44% + the threshold level 20%

59% OOP budget share. It was 44% OOP budget share in Bangladesh (van Doorslaer, O'Donnell et al. 2007). The findings point to a high intensity of catastrophic payment in Ghana, exceeding that observed in countries like Nepal and Bangladesh (van Doorslaer, O'Donnell et al. 2007)

It is pertinent for policy makers to know whether it is the rich or the poor that are more likely to overshoot these thresholds. The catastrophic gap (Gcat) explained in the previous paragraph does not point this out. Rather this is highlighted by the concentration index of the catastrophic gap and the weighted catastrophic payment gap (wGcat). This gives more weight to the poor than to the rich. If the concentration index is positive implying Gcat>wGcat, then it is the rich who more likely to overshoot than the poor. Table 6.1 shows that, it is the poor households in Ghana who are more likely to overshoot with respect to both total household expenditure and non-food expenditure on all the thresholds. In contrast to these findings, the rich or better-off are more likely to overshoot than the poor households in many of the Asian countries (van Doorslaer, O'Donnell et al. 2007). A recent study in Nigeria also revealed a tendency for catastrophic health care expenditure to be more prevalent among the richer households (Ichoku and Fonta 2008). The findings of the intensity of catastrophic payments confirm the regressive nature of OOP payments identified in Chapter Five.

6.2 Impoverishment effect of health care payments

In this analysis the difficulty that remains with the way that the literature deals with catastrophic payments, which is what the above findings reflect, is that the approach is blind as to the extent to which catastrophic payments cause hardship to individuals or households. An alternative perspective is to devise an impoverishment effect measure.

Let us step back for a moment. The main concern here is the idea that ideally no one ought to be pushed into poverty (or deeper into poverty) because of health care expenses. Such impoverishment obviously can result from medical expenditure displacing monies that would otherwise be used to meet basic needs such as food, clothing and shelter (Limwattananon, Tangcharoensathien et al. 2007). However this form of impoverishment is not normally captured by the standard approaches to the measurement of poverty since these only compare total household expenditure with a poverty line that is not sensitive to major variations in health care needs. For instance a household that is below the threshold but borrows extensively to cover health care expenses would be

raised above the threshold and thus not counted as poor. Also the standard approaches to measuring poverty do not identify a household that lives below the poverty line but borrows to cover health care expenses thereby pushing it yet deeper into poverty. These factors lead to an underestimation of the extent of poverty.

However a method that adjusts for health spending or OOP payments would enable one to include households which fall below the poverty threshold and therefore are counted as poor. The measure is justified by the fact that spending on health care is a response to a basic need that is often not adequately included in the measurement of some poverty lines.

According to Grossman (1972), the impoverishing effect of the cost of health care is the amount of other household basic consumption that must be forgone to purchase health care. Stated differently, the shadow price of making health care payments (where households are assumed to bear the cost of treatment) is other basic needs of the household. Thus, health care financing could push households that are just above the poverty line into poverty and those already poor deeper into poverty.

In Ghana, poverty and impoverishment due to health care payments could be different depending on the geographical location of the household. In this analysis, therefore, I examined the poverty effects of health care payments first at a national level, then by rural/urban differences and finally across the three geographical zones. There are ten regions in Ghana (see Chapter Two) and these can broadly be categorized into three geographical belts or zones. The northern zone or belt comprises the Upper East, Upper West and Northern regions, the middle zone the Brong Ahafo, Asante, Eastern and Volta regions and the coastal zone comprises of the three regions of the Greater Accra, Western and Central regions.

Beginning with the national level, Table 6.2 presents the poverty headcount, poverty gap, normalised poverty gap and normalised mean poverty gap based on household consumption expenditure at pre-payment and post-payment levels and at the two poverty lines [the lower ($1.25) and higher ($2.50)]. Obviously we would expect the poverty levels post-payment (i.e. after making out-of-pocket health care payments) to be higher than pre-payment particularly since out-of-pocket payments can eat deep into the

household purse, thereby leaving fewer resources available for the household to survive on. The 'absolute' in Table 6.2 is simply the post-payment poverty level less the pre-payment poverty level. The 'relative' measures the relative change in poverty after making health care payments. In other words, it is the 'absolute' divided by the pre-payment level, multiplied by 100%.

Table 6. 2: Impoverishment impact of OOP payment using the GLSS, 2005/2006

	Poverty line - $1.25/day					**Poverty line - $2.50/day**			
National	*Gross of health payment*	*Net of health payment*	*Absolute*	*Relative*		*Gross of health payment*	*Net of health payment*	*Absolute*	*Relative*
Poverty headcount	17.04%	18.64%	1.59%	9.35%		48.02%	49.85%	1.83%	3.82%
Standard error	*0.00944*	*0.00998*	*0.00194*			*0.01324*	*0.01323*	*0.00182*	
Poverty gap	90925.73	129776.3	38850.56	42.73%		651869.7	720124.1	68254.3	10.47%
Standard error	*6223.579*	*13588.53*	*11871.4*			*24709.07*	*28546.66*	*12477.93*	
Normalized poverty gap	5.36%	7.65%	2.29%	42.73%		19.20%	21.21%	2.01%	10.47%
Standard error	*0.00367*	*0.00800*	*0.00699*			*0.00728*	*0.00841*	*0.00368*	
Normalised mean poverty gap	31.43%	41.02%	9.59%	30.52%		39.99%	42.55%	2.56%	6.41%
Standard error	*0.01169*	*0.03840*	-			*0.00757*	*0.01031*	-	

A widely used measure of poverty is the poverty headcount index. This simply measures the proportion of the population who are deemed to be poor and in this particular case those who are poor before making health care payments (pre-payment) and after making health care payment (post-payment). Comparing the poverty headcount in both periods (pre-payment and post-payment) at $1.25 or lower poverty line, it is found that health care payments increase poverty in Ghana from 17% to 18.6%. This suggests that health care spending increases poverty by 1.6 percentage points and, given an estimated population in Ghana of 22 million people, translates into about 352,000 more people being impoverished as a result of spending on health care. This also represents a relative rise of about 9% in the estimate of extreme poverty. Similar results using the lower poverty line were found elsewhere. In China, the 2000 urban/rural household survey with a sample of 9700 households was used to measure the poverty headcount. The results revealed that poverty headcount increased from 13.7% to 16.2%, a difference of 2.6 percentage points and this translated into over 32 million more people that were pushed into poverty by making health care payments (van Doorslaer, O'Donnell et al. 2006; van Doorslaer, O'Donnell et al. 2007). The relative change in poverty was higher in China (18.8%) compared to Ghana (9%). Bangladesh had an even higher percentage point

increase in the poverty headcount due to health care payments. Using the 1999/2000 household income expenditure survey of a sample of 7,440 households, the poverty headcount was found to increase from 22.5% to 26.3%, a difference of 3.8 percentage points (equivalent to almost 5 million people). In India, subtracting out-of-pocket health care payments from total household resources also increased the poverty headcount by a similar margin and this was equivalent to almost 37 million people (van Doorslaer, O'Donnell et al. 2006; van Doorslaer, O'Donnell et al. 2007). Poverty increased by 2.6% in Nigeria through health care payments (Ichoku and Fonta 2008).

At the higher poverty line of $2.50 per day, we obviously observed an increase in the number of households who are drawn into poverty. Close to half of Ghanaians are categorised as poor at this poverty line. When health care payments are taken into account, poverty increases from 48% to 49.8%, translating into about 396,000 more people being pushed into poverty. The 1.8 percentage points absolute increase represents a 3.8% relative rise in poverty. Similarly in China the percentage of households classified as poor before making health care payments increased from 13.7% at the lower poverty line to 44.6% when the higher poverty line is used. At the higher poverty line, the poverty headcount increased by 1.8% which represents a 4.1% relative increase in poverty headcount (van Doorslaer, O'Donnell et al. 2007). In the Philippines, the poverty headcount at the higher poverty line increased from 50.2% pre-payment to 51.2% post-payment, a difference of 1.1% (equivalent to almost 800,000 people pushed into poverty through health care payments).

It is generally found in the studies from Asia that countries that had higher mean out-of-pocket payments as a percentage of their consumption expenditure or income also had higher percentage point increases in their poverty headcount. In others words, countries with higher shares of out-of-pocket payments suffer a higher burden of impoverishment effect from out-of-pocket payments. For instance Bangladesh had a mean OOP payment of 5.10% of total expenditure and also recorded a 3.8% increase in poverty. Malaysia had 1.37% as a mean OOP payments and the increase in poverty was only 0.1% (van Doorslaer, O'Donnell et al. 2007).

As mentioned in Chapter Four, the greatest virtue of the headcount index is that it is not only simple to construct but easy to understand. That is why it is widely used. However,

the headcount index does not take the intensity of poverty into account. Given this drawback, another moderately common measure of poverty is the poverty gap index. This simply calculates the extent to which individuals on average fall below the poverty line. Table 6.2 thus also provides figures for the poverty gap and the normalised poverty gaps. The poverty gap at the pre-payment or gross health payment level is given as ¢90,925. This increased by 43% to a post-payment level of ¢129,776. The monetary difference is estimated to be on average ¢38,850. This is the mean poverty gap created as a result of OOP health care expenditure in Ghana. Expressing this as a percentage of the poverty line or normalising this by the poverty line, the poverty gap or severity of poverty increases from 5.36% with the $1.25 poverty line to 7.65% when health care payments are netted out of total household consumption.

In Nepal the deficit of total consumption (the poverty gap) was more than 10% below the $1.25 threshold and this rose by almost a percentage point when out-of-pocket for health care were subtracted from total resources (van Doorslaer, O'Donnell et al. 2007). The normalised poverty gap also rose from 6.7% to 7.7% in India, and rose by 0.9% in Bangladesh. The deduction of out-of-pocket payments resulted in a small increase (0.2%) in the severity of poverty in the Philippines (van Doorslaer, O'Donnell et al. 2007). This suggests that the poor in these countries were better protected from health care costs than Ghana which had a increase of over 2%.

Turning to the higher poverty line of $2.50, a similar pattern is observed. The poverty gap increased from the pre-payment level of ¢651,869 to a post-payment level ¢720,124, giving a difference of an average of ¢68, 254. Normalising this by the poverty line, the poverty gap increases from 19.2% to 21.2%, a difference of 2% points which is not different from the results at the lower poverty line ($1.25).

It can be helpful to think of the poverty gap as the cost of eliminating poverty (relative to the poverty line), since the quantification of this gap shows how much would need to be transferred to the poor to bring their income or expenditure up to the poverty line. This would require a lot of information on how to target such assistance to the poor and that is often normally lacking in developing countries like Ghana.

A measure that takes into account inequality within those who are poor is the normalised mean poverty gap. This measure (as explained in Chapter Four) is simply a weighted sum of poverty gaps (each as a percentage below the poverty line) and where the weights are the percentages below the poverty line. Thus a poverty gap of say 5% below the poverty line is given a weight of 5%. This is in contrast to the poverty gap index where in essence all points below the poverty line are weighted equally. The measure thus puts more weight on observations that fall well below the poverty line. In Table 6.2, the normalised mean poverty gap increases with health care payments from about 31% to 41% giving a difference of 10% at the lower poverty line. Thus poverty is deepened by 10% as a result of OOP payments (see Table 6.2). This 10% represents a rise of about 31% in the deepening of poverty in Ghana. At a $2.50 poverty line, poverty deepens by only 3%, which represents a rise of 6% in increased poverty in the country.

The results indicate that expenditures associated with health care use in Ghana increase impoverishment in the country, as is also shown by Pen's parade in the next section below.

6.2.1: Effects of health care payments on Pen's Parade

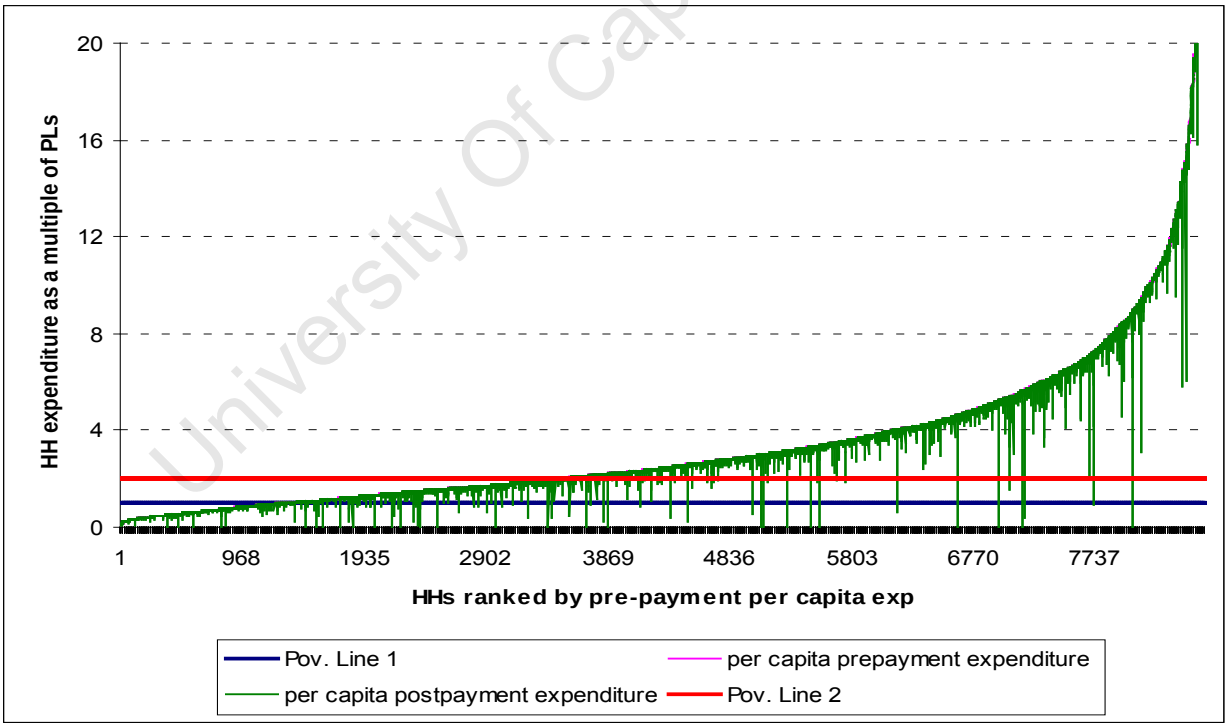
Figure 6.1 presents the effect of health care payments using Pen's parade of household consumption expenditure distribution, gross and net of health care payments.

Box 6. 1: Pen's Parade of Dwarfs and few Giants (How did it come about?)

In his 1980 book, Wealth, Income and Equality, Dutch economist Jan Pen develops a graphic metaphor to convey the extent of wealth disparity in Western democracies. He asks the reader to imagine a parade of people where everyone's height is proportional to his or her individual wealth. A person of average wealth is represented by a person of average height. The parade begins with the smallest (the poorest) at the front with the rich bringing up the rear in a one-hour parade. The first marchers are actually buried several feet beneath the ground since they have negative net worth - they owe more wealth than they own. For approximately 20 minutes there are invisible marchers, for they own no wealth. After half an hour, there are dwarfs - people about six inches tall, whose wealth is household furniture, a car and perhaps a small savings account. "But a surprise awaits us," writes Pen. "We keep on seeing dwarfs. Of course they gradually become a little taller, but it's a slow process." Only at about twelve minutes before the hour do we begin seeing people of average height, for more than three quarters of the world's population have fewer assets than average. In the last few minutes "giants loom up . . . a lawyer, not exceptionally successful, eighteen feet tall." In the last few seconds, there are people so tall we cannot even see their heads, the corporate managing directors a hundred yards tall. "The rear of the parade is brought up by a few participants who are measured in miles . . . their heads disappear into the clouds. . . . The last man, whose back we can see long after the parade has passed by, is John Paul Getty (this was before Bill Gates) . . . . His height is inconceivable: at least ten miles; perhaps twice as much." (Cowell 2006)

For each household, a vertical bar or "paint drip" shows the extent to which the subtraction of health care payments reduces consumption (World Bank 2005). If a "drip" crosses the poverty line, then the household is not counted as poor on the basis of gross consumption expenditure but is poor on the basis of net consumption. Comparing this graph to that of Bangladesh and Nepal (van Doorslaer, O'Donnell et al. 2007), Ghana has far more households being drawn into extreme poverty through health care payments. It can be observed from the graph that there is very little OOP payments for those below poverty line of $1.25. This is often so because this group is simply too poor to even think about using health care when sick. In other words they are so poor that they use very few health care services, which can have grave consequences. It can also be noted on the graph that even the relatively well-off (i.e. those with household expenditure levels of more than 8 times the poverty line) can be impoverished by OOP payments.

Figure 6. 1: Effect of Health Payments on Pen's Parade of the Household Consumption Distribution, Ghana, 2005/2006



6.2.2 Rural-Urban differences in the impoverishment effect of OOP health care payments in Ghana, 2005/2006

Urban and rural areas are inextricably linked in the process of development. Although poverty in urban areas is substantial and increasing, global poverty is still predominantly

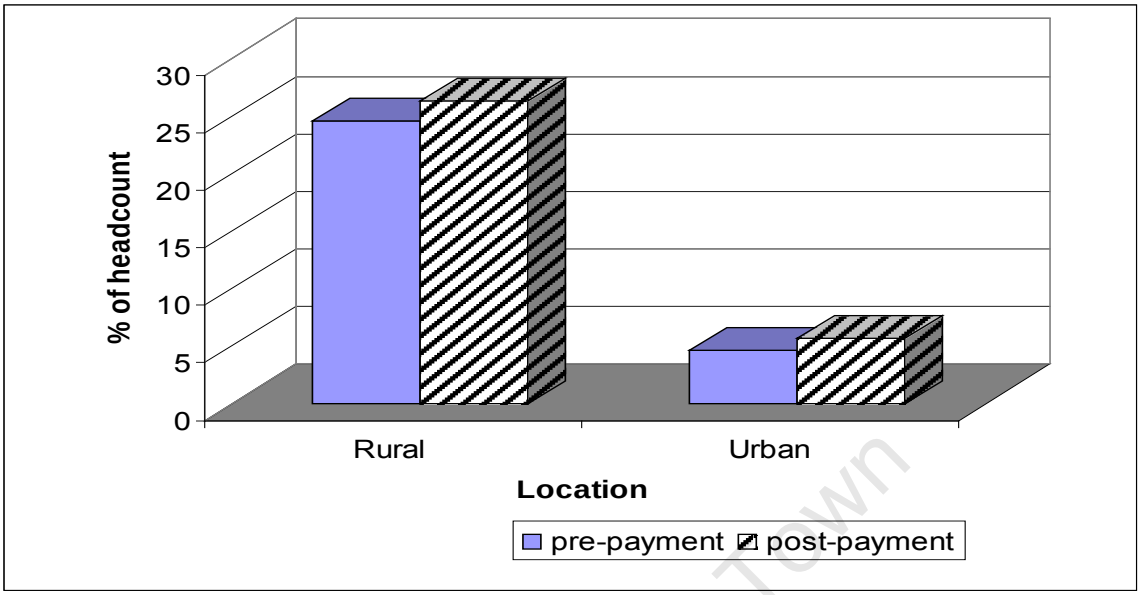
a rural phenomenon. Most rural dwellers lack access to the basic necessities of life including water, sanitation, good housing and health care and if they have to access services such as health care they often do so at a very high opportunity cost, sacrificing other basic necessities of life. Table 6.3 provides the results of the impoverishment effect of health care payments for both rural and urban areas of the country using the lower poverty line ($1.25 per head per day).

Table 6. 3: Impoverishment impact of OOP payments (Rural/Urban) using the lower poverty line of $1.25/day

	Rural				**Urban**			
National	*Gross of health payment (1)*	*Net of health payment (2)*	*Absolute 3= (2)-(1)*	*Relative [(3)/(1)]*100*	*Gross of health payment (1)*	*Net of health payment (2)*	*Absolute 3= (2)-(1)*	*Relative [(3)/(1)]*100*
Poverty headcount	24.60%	26.55%	1.95%	7.92%	4.60%	5.61%	1.01%	21.92%
Standard error	*0.24603*	*0.26552*	*0.01949*		*0.00878*	*0.00959*	*0.00209*	
Poverty gap	132947.4	168074.5	35127.13	26.42%	21749.56	66729.64	44980.07	206.81%
Standard error	*9021.38*	*12135*	*7717.53*		*5603.97*	*29485.95*	*28742.86*	
Normalized poverty gap	7.83%	9.90%	2.07%	26.42%	1.28%	3.93%	2.65%	206.81%
Standard error	*0.00531*	*0.00715*	*0.00455*		*0.00330*	*0.01737*	*0.01693*	
Normalized mean poverty gap	31.83%	37.29%	5.46%	17.14%	27.84%	70.05%	42.21%	151.65%
Standard error	*0.0123*	*0.01924*	-		*0.03170*	*0.30448*	-	

As mentioned earlier, the poverty headcount denotes simply the proportion of individuals who fall below the poverty line, gross and net of health care payments. It can be observed that whilst the poverty headcount in rural areas is 24.6%, it is only 4.6% in urban areas (Table 6.3 and Figure 6.2). After health care payments, the percentage of people who become poor and/or drop deeper into poverty increased by 2 percentage points to 26.6% in rural areas and this increase represents about an 8% increase in relative terms. On the other hand the poverty headcount index in urban areas increased by only 1% percentage point from 4.6% pre-payment to 5.6%. However, this increase represents close to a 22% relative increase in poverty. This means that the poverty headcount increases by a higher percentage in urban than in rural areas.

Figure 6. 2: Poverty headcount index by rural/urban location using the poverty line $1.25/day



In rural areas, the poverty gap pre-payment is given as ¢132,947 but was only ¢ 21,749 among urban dwellers. Whilst the poverty gap among rural households increased from ¢132,947 to ¢168,074, the urban increase was more than three fold giving a difference of ¢44,980. We observe that the normalised poverty gap increased by 2 percentage points in rural areas but increased by 2.7% among urban dwellers. This 2.7% represents an over 200% increase in the normalised poverty gap among urban households. This means that health care payments have a dramatic impact on poverty levels in urban areas.

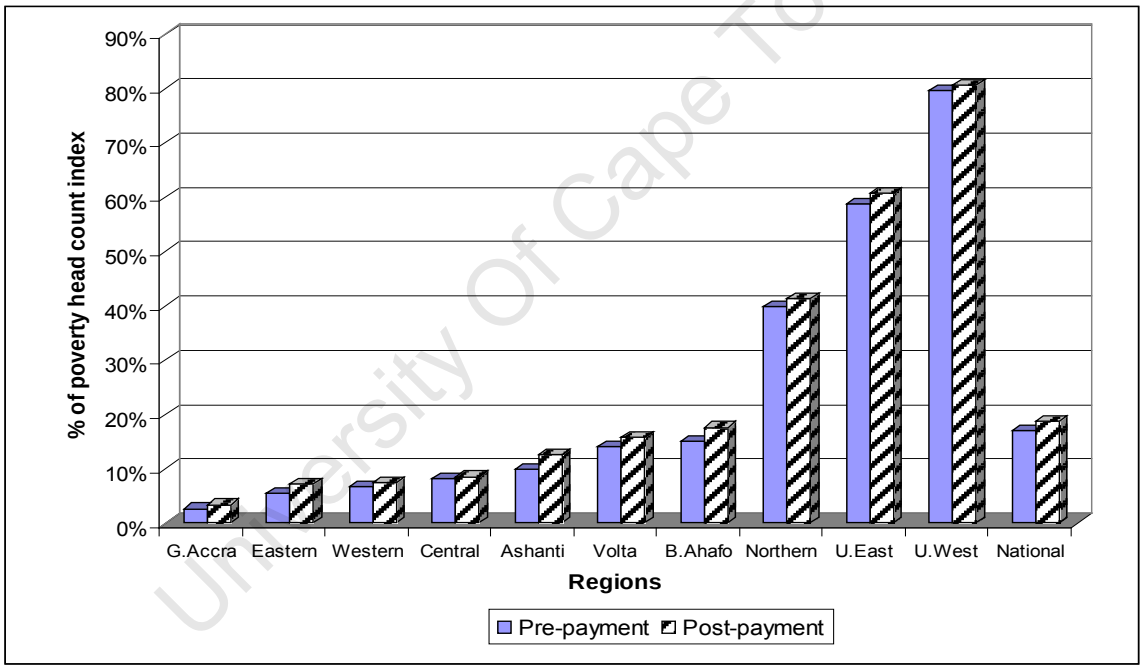
The results of the normalised mean poverty gap are also shown (see Table 6.3). It can be observed that before making health care payments, the normalised mean poverty gap is higher in rural areas than in urban areas; after these payments, the normalised mean poverty gap among urban households increases more than three fold and is then greater than in rural areas, suggesting that urban dwellers may be making very large catastrophic payments compared to their rural counterparts. This has worrying implications for the consumption of other basic necessities. Whilst poverty is deepened by about 5.5% in rural areas, it is increasing by 42.2% in urban areas a greater than 150% increase in poverty due to health care payments. These results make intuitive sense. Urban dwellers are likely to consume more western medicine, attend private hospitals, tertiary health care facilities and use high cost medical diagnostics and treatment. On the other hand rural dwellers are likely to consume health services at the local clinics, local chemical drug sellers and other

lower cost health care providers. Further the rural poor sometimes do not access health services, not because they do not need them but because they simply cannot afford the high cost involved.

6.2.3 Broad geographical zones (northern, middle and coastal) difference in impoverishment effect of OOP health care payment using the lower poverty line of $1.25

As mentioned earlier, the ten regions of Ghana can be divided into three broad geographical zones or belts - the northern, middle and coastal. Before I examine the impoverishment effect of health care payments across these zones, it is important to have a sense of the regional variations in the poverty headcount index (see Figure 6.3)

Figure 6. 3: Regional distribution of poverty headcount index



Results for the poverty headcount presented in Figure 6.3 point to very wide inequalities in Ghana. Whilst in Greater Accra, the poverty headcount pre-payment is about 2.6%, it is as high as 79.5% in the Upper West region. The differences between the regions of the north and the rest are also very striking. Whilst the poverty headcount was 58.8% in the Upper East, it is 5.4% in the Eastern region. The Northern region also has a high poverty headcount of about 40%. A recent statement by the Vice President (see Box 6.2), captures the issue of inequality that has become deeply entrenched in the country over the years.

Box 6. 2: Government concern about geographical health inequality

> Vice President of Ghana, His Excellency John Mahama on Wednesday (05/08/2009) decried the lack of social justice and equity in Ghana's healthcare system, describing the situation as unacceptable. He said lack of social justice and equity in the health sector remained a major development drawback, pointing to the concentration of health professionals in few urban centres to the neglect of a number of communities. "This situation lacks equity and is unacceptable. Depending on what geographical part of the country you are, access and quality can vary dramatically". The Vice President was addressing a joint meeting of the Commonwealth Pharmacists Association (CPA) and the Pharmaceutical Society of Ghana (PSGH) in Accra on Wednesday. It was on the theme: "Managing Threats and Crises: The Vital Role of Pharmacy in An Unstable World." Vice President Mahama said there was huge disparity in the distribution of health professionals explaining that 80 per cent of 1, 400 pharmacists in the country were located in Accra or Kumasi, while the three northern regions have less than five per cent of pharmacists and pharmacies. He said while in the Greater Accra Region, an estimated health professional ratio was one to 8,000 patients; the figure was dramatic in the North where one health professional accounted for 96,000 patients[49].

With a pre-payment national poverty headcount of 17%, the three northern regions are the only ones that are far above this national average. After health care payments, the poverty headcount increased from 79.5% to 80.7% in the Upper West region whilst in Greater Accra (the Capital city) it went up by 0.7%. In the Upper West region, over 7 in every 10 people fall below the poverty line of the $1.25 per day. After health care payments, another 1% were pushed into poverty.

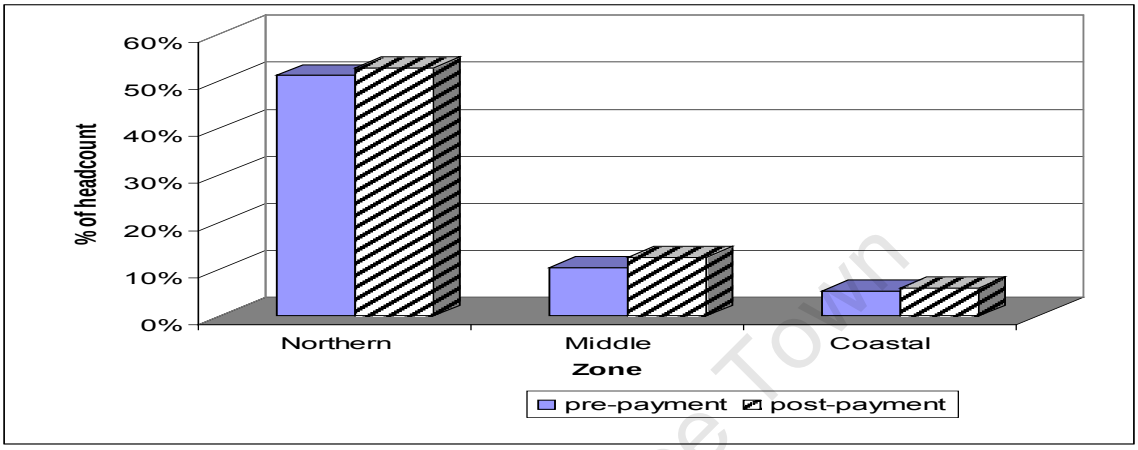
However, the Ashanti region is the most affected by health care payments. The percentage point increases in poverty after making health care payments are highest in the Ashanti region compared to the other regions and this is followed closely by Brong Ahafo. Whilst the poverty headcount index in the Central region increased by 0.4% from 8.16% from pre- to post-payment, the poverty headcount index in Ashanti region increased by 2.73% (i.e. from 9.86% pre-payment to 12.59% post-payment). Five regions (Upper East, Eastern, Ashanti, Volta and Brong Ahafo) recorded absolute increases above the national average of 1.60%.

Turning to the broad geographic zones, a similar pattern is observed. The northern zone, comprising Upper East, Upper West and Northern regions, has a remarkably higher poverty headcount, both pre-payment and post-payment, compared to the other two zones. Whilst the poverty headcount was 51.37% pre-payment in the northern zone, it was 10.27% for the middle and 5.41% for the coastal zones. However the percentage

[49] Source: http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=166469

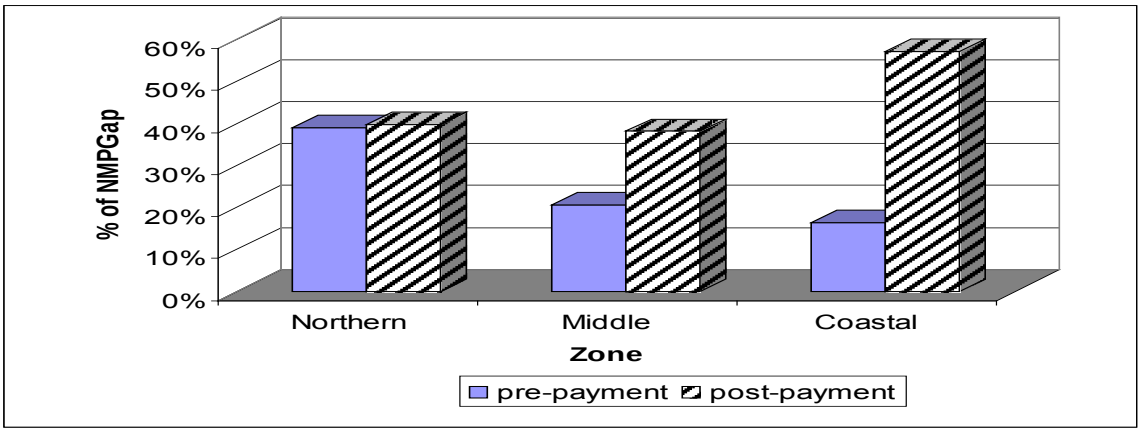
increase in poverty after health care payments is highest among households in the middle zone. Whilst the percentage or absolute increase in poverty as a result of health care payments was 2.29% percentage points in the middle zone, the northern zone registered an increase of 1.5% percentage points and the coastal belt less than 1% percentage point (see Figure 6.4).

Figure 6. 4: Poverty headcount of broad geographical zones in Ghana



The normalised mean poverty gap is also calculated and presented in Figure 6.5. Here one can observe that despite the generally high poverty level or impoverishment among households in the northern zone, the middle and particularly the coastal zones are affected more by health care payments. In other words, a higher percentage of households in the coastal and middle zones are pushed below the poverty line or made poorer through health care payments compare to the northern zone (Figure 6.5). In summary, the burden of out-of-pocket payments is highest among urban dwellers who are mostly in the coastal and middle zones. The fact that the impoverishment burden of health care payments is lower in the northern zone implies that they are using no or very few health services.

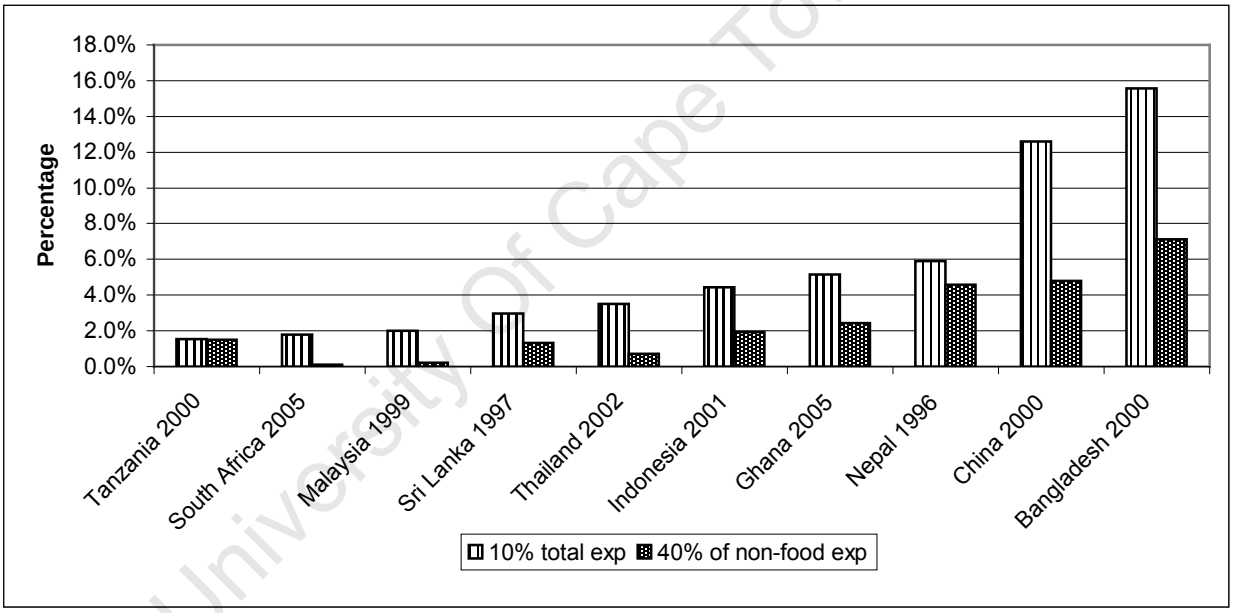
Figure 6. 5: Broad geographical zones of normalised mean poverty gap (NMPGap) of poverty in Ghana



6.3 Summary

Overall, it is to be noted that OOP payment is not only regressive (as was revealed in Chapter Five) and catastrophic (Figure 6.6) but has a tremendously impoverishing effect (Figure 6.7) on Ghanaians and people of other nations. Comparing Ghana with selected African and Asia countries, Ghana is worst off in terms of having a higher catastrophic effect of OOP payments (using both 10% of total expenditure and 40% of non-food expenditure) compared to countries like Tanzania, South Africa, Malaysia, Sri-Lanka, Thailand and Indonesia. However Ghana is better off than Nepal, China, and Bangladesh. Countries that have higher catastrophic health care payments are countries which are also associated with significant OOP payments.

Figure 6. 6: Incidence of catastrophic payments defined relative to total and to non-food expenditure

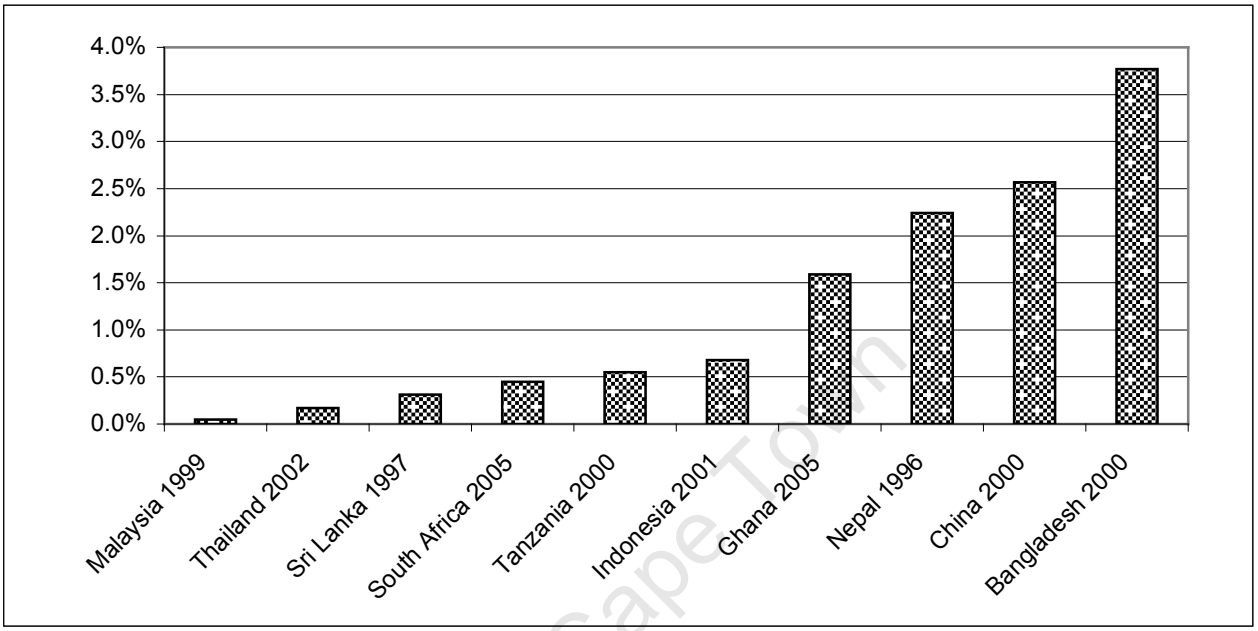


Source: Ataguba, Akazili et al. 2009 : van Doorslaer, O'Donnell et al. 2007 : Own calculations

Figure 6.7 also compares Ghana with some selected countries in terms of the absolute change in poverty headcounts as a result of OOP payments. In other words, the figure compares Ghana with other countries in terms of poverty impact of OOP payments (i.e. the difference between pre-payment headcount and the post-payment headcount). The least change in poverty as a result of OOP payments is observed in Malaysia where OOP payments are found to be progressive and this was due to the use of subsidised public health services by the poor and a large patronage of private sector services by the well-off. Bangledesh has the highest impact of poverty as result of OOP payments and this is due to poor implementation of exemptions as well as poor quality services just like in

Ghana where the poor end up patronising private health services which are often more expensive.

Figure 6. 7: Poverty impact of OOP payments-Poverty headcounts (absolute change)*



Source: Ataguba, Akazili et al. 2009 : van Doorslaer, O'Donnell et al. 2007 : Own calculations
*Using the poverty line of $1.08/1.25 per day

These findings lend support to qualitative studies (Dong, Kouyate et al. 2003; Chuma, Musimbi et al. 2009) suggesting that health care payments cause impoverishment. The World Bank "Voice of the Poor Study" (Naraya 2000) showed that, after illiteracy and unemployment, health care costs were the most important precursor to poverty (Naraya 2000). Further, a retrospective study in India identified the cost of ill health and health expenses as one of three main factors responsible for 85% of all cases of impoverishment. The apparently low percentage of people pushed below the poverty line by health care payments among rural dwellers and the northern belt of the country is simply explained by the fact that those threatened by poverty merely forgo health care because of unaffordable charges. The results of the significant impoverishment from health care payments in Ghana are consistent with results elsewhere. Impoverishment through health care payments seems to be greater in Ghana than in many other countries.

Chapter Seven: Factors influencing membership of the NHIS

7.0 Introduction

This chapter looks at the factors influencing people's decisions to join or not to join the National Health Insurance Scheme (NHIS). In Chapter Five, it was found that tax funding and the NHIS are progressive whilst out-of-pocket payments are very regressive. Chapter Six confirmed that indeed out-of-pocket payments are not only regressive but can be catastrophic and impoverish households. Thus, Ghana can only rely on tax funding and the NHIS to provide equitable financing and universal health care coverage. The factors influencing the incidence of taxes are all outside the control of the health sector. Tax rates and general tax policies are determined by the Ministry of Finance (MoF). The health sector can only argue for a greater share of tax funds. However, it does have some control over certain factors (see conceptual framework in Chapter Three) that may hinder the expansion of the NHIS and thereby reduce out-of-pocket payments. As indicated in Chapter Three, though it is mandatory by law for all people in Ghana to belong to the NHI, in reality it is only the formal sector workers that the mandatory requirement is applied to as a proportion of their pension contributions are compulsorily deducted and paid to the NHI. NHI is thus voluntary for those in the informal sector.

The chapter draws on the SHIELD household survey and the qualitative data (described in Chapter Four) to explore the factors that help to explain the enrolment status of individual members of households. As mentioned in chapter four, the SHIELD household survey sought household and individual information from six districts which represented the three broad geographical zones (the northern, middle and coastal) of the country. A questionnaire was used to collect information from households that were currently enrolled into the NHIS, those who had not renewed their membership with the NHIS (former members of the scheme) and those who had never enrolled in the NHIS. The information was weighted to allow a national picture to emerge. I also conducted 44 focus group discussions (FGDs) with individuals who were either insured or uninsured. In-depth interviews were also carried out with the six district scheme managers on issues pertaining to the operation and management of the District Health Insurance Schemes. Finally a representative of the Chief Executive Officer (CEO) of the National Health Insurance Scheme (NHIS) was interviewed to solicit his views on a wide range of issues

pertaining to the management, expansion, equitable coverage and sustainability of the NHIS.

Knowledge of these factors is critical to expanding *coverage* of the NHIS. Below, I present the socio-economic and demographic characteristics of the insured versus uninsured. This is followed by a Logit regression analysis to identify the key factors predicting enrollment. Finally key views from the focus group discussions and the in-depth interviews are analyzed to further explore the factors influencing NHIS enrolment in support of the discussion of the factors.

7.1 Socio-economic and demographic characteristics of the insured versus uninsured

7.1.1 Individual level characteristics

The results from the survey revealed that 37% of the population were insured. This figure is lower than the 45% reported by the NHIS secretariat for 2008 (Ministry of Health 2009). The reason for the lower figure is that the survey was conducted in August/September 2008 and so the time frames are different. Another reason worth mentioning is perhaps the strict scrutiny used in the survey to establish an insured individual. The criteria used in the survey included the production of a valid card to be considered as an insured member

Over 31% of Ghanaians have no formal education. A higher percentage of people with no formal education are uninsured compared to the insured group. This is to be expected given the design of the insurance scheme, where formal sector workers are automatic members through the compulsory deduction of their SSNIT contributions to the NHIS. Table 7.1 shows that 51.5% of the population are female while the 2000 population and housing census puts the figure at 50.5% (Ghana Statistical Service 2007). The high fertility has contributed to the young age structure of the Ghanaian population with over 40% under 15 years of age (see Table 7.1). With the global trend of decreasing fertility, this is a reduction from the 2000 national estimate of 43% of the population below 15 years of age (Ghana Statistical Service 2007). The fact that more under 15 years of age and the over 60 years of age are reported among the insured is a product of the exemption package under the NHIS in which those under 18 years (if parents are enrolled) and the aged are exempted from contributions (i.e. can register with the NHIS without making a contribution).

Information on the health seeking behaviour of each member of the household was also sought (see Table 7.1). About a third of the population reported having used any health services within the previous month, with a higher percentage usage by insured members. On hospitalisation within the past year 1.5% of the uninsured were hospitalised compared with nearly 4% of the insured. On average 2.4% reported hospitalisations within the past year, which is equivalent to a total of 552,000 people. Reported illness or injury within the previous month and chronic illness was higher among the insured than uninsured. This may mean that there is some element of adverse selection such that those who have health problems are more likely to join the NHIS than the healthy. It may also be the case that those who are uninsured could have health problems but they are too poor to seek health care, which may influence their reporting of illness.

Table 7. 1: Socio-economic and health characteristics of individual household members

Variables	Response options	Insured		Uninsured		P-Value	Total %
		Number*	%	Number*	%		
Education	None	1174	28.4	2643	37.1		31.8
	Primary	496	12.0	971	13.6	0.000	13.0
	Secondary	2047	49.6	3286	46.1		50.1
	Tertiary	4668	49.0	227	3.2		5.1
Sex	Male	2523	48.5	4555	48.5		48.5
	Female	2675	51.5	4296	51.5	0.002	51.5
Age	0-5	913	17.6	1498	16.9		17.2
	6-14	1400	26.9	2148	24.3		25.3
	15-29	1136	21.9	2489	28.1		25.8
	30-39	656	12.6	1098	12.4	0.000	12.5
	40-49	433	8.3	725	8.2		8.3
	50-59	283	5.5	464	5.3		5.3
	60+	374	7.2	427	4.8		5.7
Use any health service in the past month?	Yes	2008	38.6	2841	32.1		34.5
	No	3189	61.4	6010	67.9	0.954	65.5
Any hospitalization in the past 12 months?	Yes	204	3.9	137	1.5	0.000	2.4
	No	4993	96.1	8714	98.5		97.6
Any member been ill or injured in the past month	Yes	1705	32.8	2352	26.6	0.220	28.9
	No	3493	67.2	6477	73.4		71.1
Any Chronic illness	Yes	300	5.8	294	3.8	0.045	4.4
	No	4897	94.2	8534	96.2		95.6

*Figures in 1000s (theses have been weighted to national levels)

7.1.2 Household level characteristics

Information was also sought on the characteristics of the households in the survey. An insured household was defined as either the head of the household or his/her spouse having a valid health insurance card. The average household size was 4.9 with a slightly

larger household size (5.0) among the uninsured households (see Table 7.2). About 55% of the population live in rural areas. It is projected that by 2020, Ghana's rural population will have shrunk to about 46%. Increasing urbanisation brings pressures on already inadequate amenities in urban areas including health care. However, according to Carrin and James (2004), population distribution in favour of urban areas (or densely populated areas) rather than scattered rural populations is key to a successful SHI (see Box 3.1 in Chapter Three)

The results from Table 7.2 show that whilst 63% of insured households have access to electricity, 50% of the uninsured have access to electricity. Access to electricity is often used as an indicator of a household's socio-economic status. It is also often a key variable in the computation of an asset index of a household or an individual. The results thus indicated that the insured are better off economically than the uninsured. Over 90% of households used either wood or charcoal as their main cooking fuel and this has direct implications for the environment. A higher percentage of the population depends on wood for cooking fuel among the uninsured compared to the insured.

Information was also sought from households on the type of toilet used by the household. Free range is defined as defecating in the open at any place and often is the only option available to the poor. This practice, as can be observed in Table 7.2, is more pronounced among the uninsured compared to the insured.

On access to water, even though more insured households have access to pipe-borne water than uninsured households, on the whole over 78% of households in Ghana have access to improve or safe drinking water (pipe-borne and borehole). According to the Water and Sanitation Sector Monitoring Platform (WSMP) the proportion of the population that used improved drinking water sources increased significantly from 56% in 1990 to 74% in 2006 (Ghana Statistical Service 2006) and with this current figure (78.8%), Ghana has already hit the Millennium Development Goal (MDG) target of ensuring that 78% of a country's population have safe drinking water by 2015.

Table 7. 2: Household level characteristics

Variables	Response options	Percentage (%)					
		Insured		Uninsured		P-value	Total/ average
		Number	%	Number	%		
Household size		1960	4.8	2893	5.0	0.012	4.9
Modern design of house	Yes	1672	85.3	607	79.0	0.001	81.6
	No	287	14.7	2285	21.0		18.4
Location	Rural	1059	54.0	1591	55.0		54.6
	Urban	901	46.0	1391	45.0	0.000	45.4
Geographical zone	Northern	285	14.6	466	16.1		15.5
	Middle	935	47.7	1310	45.3	0.000	46.3
	Coastal	739	37.7	1116	38.6		38.2
Status of house for the household	Own	819	41.8	980	33.8		37.1
	Family house	654	33.4	1156	40.0		37.3
	Rented	427	21.8	687	23.8	0.000	23.0
	Other	58	3.0	69	2.4		2.6
Use of electricity in household	Yes	733	62.6	1449	49.9		55.0
	No	1227	37.4	1443	50.1	0.155	45.0
Main cooking fuel for household	Gas	229	11.7	185	6.4		8.6
	Electricity	4	0.2	8	0.3	0.000	0.3
	Wood	907	46.3	1559	53.9		50.8
	Charcoal	803	41.0	1109	38.4		39.4
	Stalks	6	0.3	3	0.1		0.2
	Other	8	0.5	25	0.9		0.7
Common toilet facility used by this household	Free range	500	25.5	895	31.0		28.8
	Shared Pit latrine	441	22.5	723	25.0		24.0
	Own Pit latrine	159	8.2	143	5.0	0.000	6.3
	Shared KVIP	577	29.5	883	30.5		30.1
	Own KVIP	128	6.6	89	3.1		4.5
	Own flush toilet	94	4.8	63	2.2		3.3
	Shared flush toilet	42	2.2	68	2.4		2.3
	Other	14	0.7	24	0.9		0.8
Main source of drinking water for this household	Pipe borne water	1019	52.0	1378	47.7		49.4
	Bore-hole	507	25.9	916	31.7	0.000	29.4
	Well water	108	5.5	172	6.0		5.8
	Dam/dugout	109	5.6	152	5.3		5.4
	Stream	127	6.5	186	6.4		6.5
	Sachet water	70	3.6	80	2.8		3.1
	Other	11	0.9	5	0.1		0.4
Household face food shortage	Yes	1476	75.3	2379	82.2		79.4
	No	484	24.7	513	17.8	0.000	20.6
Main source of income for household	Salaries /wages	596	30.5	720	24.9		27.2
	Remittances	226	11.6	311	10.8		11.1
	Pensions and grants	59	3.1	14	0.5	0.000	1.5
	Sales of farm prod	735	37.5	1222	42.3		40.3
	Other non-farm Inc	322	16.4	593	20.5		18.9
	No income	16	0.8	14	0.5		0.6
	Other	2	0.1	13	0.5		0.3
Incurred health care expend. within the past one month?	Yes	1325	67.6	2181	75.4		72.3
	No	634	32.4	710	24.6	0.000	27.7
Socio-economic status of household	Quintile 1(poorest)	313	16.0	577	20.0		18.3
	Quintile 2	540	27.5	786	27.2	0.000	27.3
	Quintile 3	620	31.7	793	27.5		29.2
	Quintile 4	252	12.9	387	13.3		13.2
	Quintile 5(richest)	233	11.9	347	12.0		12.0

Households were also asked about food shortages, main source of income and whether health care expenditure was made within the past month. The results show that close to 80% of the households experience food shortages and it is more prevalent among the uninsured, who are probably those with lower income compared to the insured households. It is also shown in Table 7.2 that over 70% of households incurred health care expenditure within the past month and this is more so among the uninsured households compared to the insured households. This is not surprising as insured households will not often pay at the point of access if they use accredited providers. It can also be observed that a higher percentage (20%) of uninsured households is in the poorest quintile compared to insured households (16%). This means insured households are socio-economically better off than insured households and this can be explained in terms of the design of the insurance scheme where formal sector workers who are relatively better off are all members through the compulsory deduction of their SSNIT contributions to the NHI.

7.2 .1 Dependent variable

The dependent variable captures whether an individual within the household was insured or not. This dependent variable comes primarily from the question about health insurance membership. Another relevant question was whether the registered member has a valid health insurance card that will allow him/her to access health services (this is important because not all who have registered have their cards yet and so cannot access health care). A list of the possible responses on health insurance status was provided: “registered with the District health insurance scheme”, “registered with other health insurance scheme”, “registered with both the district health insurance and other health insurance scheme”, “former members of the district health insurance scheme”, and “never registered with any health insurance scheme”. For the regression analysis our dependent variable takes on the value “1” for the first three categories i.e. those that have duly registered with a health insurance scheme be they the district health insurance scheme or other health insurance scheme.

7.2 .2 Explanatory variables

The explanatory variables can be categorised into the individual level, the head of the household and household level variables. The key variables considered are summarised in Table 7.3. Why were these variables chosen? The head of the household often takes

major decisions including health care on behalf of his or her household members. His or her decisions directly and indirectly affect the household members and so an individual decision to insure could be directly or indirectly influenced by the head of the households. The decision making of the household head is also directly and indirectly influenced by key variables such as his or her age, sex, education, religion, marital status and occupation. I expect that age would have a direct relation with insurance uptake. In other words the older the household head, the more likely a household member is insured. I also expect a difference in the insurance status of household members depending on whether the head of household is a male or female. The chosen variables seek to explore questions such as: Is a household member more likely to be insured if the household head is female than male? Is a household member also more likely to be insured if the household head is educated than if he or she is not? Could the level of education of the household head make a difference in the insurance status of household members? With regard to religion of the household head, given that Traditional religion is more conservative, household members are more likely to be insured if the household head is a Christian or a Muslim. A household member whose household head is married may be more likely to be insured as married household heads are generally older. Occupation of the household head is also chosen because it could affect enrolment of household members into the NHI. For instance household members (especially those under 18 years) whose household heads are employed are more likely to be insured.

With regard to household level variables, variables such as household size, location, whether the household faced food shortages and the socio-economic status of the household could affect the decision to join the NHIS. Larger household size is often associated with poorer households and so individuals from such households are unlikely to be insured compare to smaller households. Insurance status may also be associated with the location of the household (i.e. rural/urban and geographical zones). Another key variable linked to the socio-economic status of the household is whether the household faces food shortages or not. This variable is key to identifying how the really poor households are faring as far as NHIS enrolment is concerned.

Two individual variables were identified, the sex of the individual and the whether the individual has a chronic illness of not. With regard to the sex of the individual, it will be essential to know if there are gender differences in terms of enrolment in the NHIS. In

other words, are more males enrolled in the NHIS than females? The issue of whether the individual has chronic illness is also key to establishing whether there is some indication of adverse selection in the NHIS.

Table 7. 3: Explanatory variables for regression analysis

	Head of household level variables	Household level variables	Individual level variables
1	Age	Household size	Sex
2	Sex	Location of household (rural/urban)	Has chronic illness
3	Education	Location (geographic zones-north, middle and coastal)	
4	Religion	Whether household face food shortages or not	
5	Marital status	Socio-economic status*	
6	Occupation		

* measured by consumption expenditure

The dependent variable, logit (p_i) was regressed against possible explanatory variables where p_i is the success probability corresponding to the ith insured individual. For the observations on all n individuals in the sample, the random variable Y_i (insured individual) is from a binomial (n, p_i) distribution where Y_i are independent: Log odds (Y_i=1) can be expressed as:

$$\text{Log odds } (Y_i=1) = \text{logit } (p_i) = \log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_j X_{ij} \qquad i = 1,...,n \; j = 1,...,k$$

Where the X_{ij} represents the jth independent variable at individual i, and the β_j are the parameter estimates of the model. The interpretation of the β_j parameter estimates is as the additive effect on the log odds ratio for a unit change in the jth explanatory variable.

In the case of a dichotomous explanatory variable, for instance gender, e^{β} is the estimate of the odds ratio of being insured with the NHIS for, say, males compared with females.

The model has an equivalent formulation

$$p_i = \frac{1}{1+e^{-(\beta_0+\beta_1 x_{1,i}+\cdots+\beta_k x_{k,i})}}.$$

Key variables (see Table 7.4) were identified and used to regress the health insurance status of individuals members of the household where 1=insured individual and 0=uninsured member. Adjustment was made for the "clustering" at the household level.

7.2 .3 Findings from the regression analysis

To understand the relative contributions of the socio-economic and health factors on health insurance membership, we obtain the logistic regression results (see Table 7.4) which could be presented either as coefficients or odds ratios. The latter are a unique feature of the logit model and more commonly used since they provide a more direct measure of the magnitude of the effect of the independent variable on the dependent variable.

Table 7.4 presents the results of the logistic regression estimation of the effect of various socio-economic, demographic and health factors on the likelihood of an individual being insured with the NHIS. Individuals from larger households are significantly less likely to be members. Indeed, for every additional household member, there is a 5% lower chance that an individual from that household is insured which is consistent with results in South Africa where smaller households were more likely to be insured than larger households (Kirigia, Sambo et al. 2005). There are also some significant effects of location. Compared to those in rural areas, urban dwellers are 0. 23 times less likely to be insured (odd Ratio [OR] =0.768, $P<0.01$) (see Table 7.4). The main reason has to do with the design of the health insurance scheme in Ghana where district insurance schemes (which are semi-autonomous) were encouraged to pro-actively promote membership and in Ghana and other developing countries, it is easier to identify and locate people in rural areas than urban areas. The widespread migration from rural to urban areas is resulting in the growth of informal settlements and slums, making tracing people in an urban setting even harder. The finding also confirms the findings of an earlier study that was conducted in the Kassena-Nankana district of northern Ghana prior to the implementation of the NHIS on the willingness to join the scheme which was then about to start. In that study, rural residents were 3.7 times more likely to join the NHIS than their urban counterparts (Akazili, Anto et al. 2005).

Turning to the socio-economic status of households, though individuals from richer households are more likely to be insured, the differences are not significant; quintile 1 (poorest) for example is not significantly different from the others in terms of the uptake of the NHIS. Four factors could explain this phenomenon. The first is the problem associated with the use of consumption expenditure to measure socio-economic status. Where a poor household borrows extensively to cater for a health or other urgent need,

that household by virtue of high consumption expenditure could be classified as rich. Secondly the level of premium, which is 'only' US$8 per adult per year, may well be affordable to many. Thirdly the combined effects of the variables in the model such as education of household head, occupation of household and location could be influencing the lack of correlation between SES and NHI membership, Finally the policy of exempting the poor means potentially better financial access to NHIS for them. These reasons not withstanding, what is striking is that individuals whose households experienced food shortages within the year were significantly less likely to be insured. An individual is about 0.35 (Odd ratio [OR] =0.653, P<0.001) times less likely to be insured if his/her household experienced food shortages within the year. Food shortages that measure real deprivation (to a basic necessity such as food) has revealed that the poor (who often experience food shortages) have less access to the NHIS compared to the rich.

The level of education of the household head also emerged as a determinant of an individual's NHIS membership status with an individual being almost 1.5 times as likely to be insured if the household head has secondary education compared to somebody whose household head has no formal education. The odds are even higher (3.3) when the household head has some tertiary education. This is to be expected given that formal sector workers are by law members of the NHIS and their premiums for the NHIS are compulsorily deducted and this group is most likely to have secondary and tertiary education. The finding is also consistent with findings among South African women, where respondents who had at least matriculation (secondary) level of education were 2 times more likely to be members of a health insurance scheme than those with lower level of education (Kirigia, Sambo et al. 2005). This can be attributed to a positive relationship between a person's education and the potential of the individual to acquire skills, a stock of knowledge, productivity and awareness of the need to avoid risk of catastrophic health expenditure (Grossman 1972). The results on education are closely linked with occupation, where individuals whose household heads are government workers are 2.6 times as likely to be NHIS members compared to those whose household heads are farmers. This again reflects the compulsory nature of membership for all formal sector workers. If membership were not compulsory for this group, the story could have been different. The study on willingness to join the NHIS conducted in the Kassena-Nankana district prior to the start of the NHIS indicated that those with tertiary education and

formal sectors workers were consistently less likely to join the NHIS than those with no education and farmers(Akazili, Anto et al. 2005).

Table 7. 4: Odd ratios effect of determinants of NHIS membership, SHIELD survey 2008

Variables	Odd ratios	Robust S E	95% confidence interval
Household level characteristics			
Household size	0.95606**	0.02183	0.91423 -0.99982
Rural[a]	1.00000		
Urban	0.76817*	0.105001	0.58763 - 1.00419
Northern[a]	1.00000		
Middle zone	0.75508	0.119834	0.55323 - 1.03058
Coastal zone	0.66360*	0.190405	0.37816 - 1.16450
Food shortages	0.65268***	0.075447	0.52032 - 0.81870
Quintile(poorest) [a]	1.00000		
Quintile2	0.95987	0.16249	0.68883 - 1.33754
Quintile3	1.42131	0.36896	0.85452 - 2.36403
Quintile4	1.23455	0.46052	0.59428 - 2.56466
Quintile5 (Richest)	1.32267	0.54532	0.58954 - 2.96751
Characteristics of household head			
Gender	0.89934	0.094836	0.73142- 1.10582
No formal education	1.00000		
Primary	1.12132	0.17797	0.82155 - 1.53055
Secondary	1.47738**	0.18124	1.16163 - 1.87900
Tertiary[a]	3.27333***	0.74149	2.09977 - 5.10280
Christianity[a]	1.00000		
Muslim	1.36524**	0.17779	1.05769 - 1.76222
Traditional and other	0.37759***	0.07921	0.25030 - 0.56960
15-29 year[a]	1.00000		
30-39 years	1.39829 **	0.22872	1.01476 - 1.92677
40-49 years	1.40372**	0.24074	1.00299 - 1.96456
50-59 years	1.29169	0.23563	0.90341 - 1.84686
60 years and above	1.03860	0.19504	0.71878 - 1.50072
Married[a]	1.00000		
Never married	0.98706	0.04032	0.91112 - 1.06933
Divorce/Separated	0.85633	0.11147	0.66349 - 1.10521
Widowed	1.43679**	0.18934	1.10975 - 1.86021
Farmer[a]	1.00000		
Trader	0.97340	0.13205	0.74613 - 1.26988
Government	2.31625 ***	0.52388	1.48684 - 3.60832
Other	0.90625	0.11620	0.70487 - 1.16516
Characteristics of the individual	4.77 0.000		
Gender	0.97223	0.04196	0.89337 - 1.05806
Chronic illness	1.88994***	0.25241	1.45468 - 2.45545
Log Pseudolikehood	-8747.31		
Pseudo R-squared	0.0552		
Wald chi2	205.78***		
Number of Observation	14050		

**p<0.10; ** p<0.05; ***p<0.001(i.e. statistically significantly difference at 10%, 5% and 1% respectively)*
[a] Reference points

With regard to religion, an individual is over 0.60 times less likely to be insured if the household head belongs to a traditional religion compared to one who is a Christian (see Table 7.4). The fact that those people whose household heads are Muslim are 1.4 times more likely to be insured than Christians may be because the Muslim population is largely concentrated in the northern zone (who are more likely to insure). A higher percentage of traditional worshippers do not have formal education so the results on religion are not surprising.

People are more likely to be insured if they belong to households whose household heads are older, but even more likely if the head of the household is aged between 30 and 49. This is consistent with Kirigia's findings in South Africa (Kirigia, Sambo et al. 2005) and Grossman findings that because the health stock depreciation rates rises with age, it is not unlikely that unhealthy (old) people will make larger gross investments in health than healthy (young) people (Grossman 1972). However, highest levels among 30-49 years may again be due to compulsory membership for formal sector workers.

Furthermore (but not surprisingly) people from households in which the head has never married (usually aged under 30) are less likely to be insured. Except for the widowed (more likely to be older), married persons are more likely to insure their households than those who are single, separated or divorced. This finding is consistent with results obtained by Kirigia et al (2005), Harmon and Nolan (2001) and Trujillo (2003). Married couples may have a higher demand for health insurance due to the need to protect their children and being more averse to the risk of catastrophic health expenditures than those who are single, separated or divorced (Harmon and Nolan 2001)

Turning to individual characteristics and how these affect the uptake of NHIS, it emerges that males are less likely to be insured than females which can probably be attributed to the Government policy in 2007/2008 of extending exemption cover or automatic NHIS membership to *all* pregnant women and for up to one year after delivery. This policy was criticised for encouraging more women, especially those who might otherwise not be able to join the NHIS, to get pregnant. Some, especially the opposition parties, also saw this policy as being unsustainable and simply a ploy of government to get more votes in the forthcoming presidential and parliamentary elections. These criticisms notwithstanding, women are generally disadvantaged in many areas including health care and hence in equity terms this policy makes sense. It is also particularly important in the context of the

Millennium Development Goals of reducing maternal and infant mortality (World Health Organization 2008). The other characteristic that is striking but not surprising is that persons who reported having a chronic illness are about 1.9 more likely to be insured compared to those who do not have a chronic health condition. This finding is consistent with a study on the determinants of health insurance membership among South African women where it was found that the demand for health insurance was likely to be low among individuals who were in excellent, very good and good health. This may be a case of adverse selection which results in insurance having the greatest appeal to individuals who are more likely to fall ill or have chronic health problems (McIntyre, Doherty et al. 2003; Kirigia, Sambo et al. 2005). Adverse selection, depending on its extent, could threaten the economic survival of the NHIS. Adverse selection can be curbed in the NHIS if the impediments that affect enrolment including ensuring effective exemption, graduating the premiums and improving quality of health are tackled. In private health insurance however, adverse selection is curbed by introducing experience rating, i.e. linking the insurance premium to the degree of assessed risk of falling ill (obviously this may have negative equity implications) and subjecting all those who apply for insurance cover to have a thorough medical examination. This could also potentially lead to cream-skimming (i.e. excluding all those with higher risks of falling ill) (McIntyre 2007).

7.3 Other quantitative views: why some households are insured or uninsured

The household survey also collected views on insurance membership choices from three categories of households [those who were currently insured, those who did not renew their insurance membership (former members) and those who have never insured (never insured)].

7.3 .1 Household members currently insured

In the households that were currently insured, most joined the DHIS because they see it as a form of financial protection against future illness that they cannot predict (see Table 7.5). This means there is a good understanding of the prepayment principle in health insurance. This could be the result of the massive educational campaign that preceded the introduction of the DHIS.

Table 7. 5: Why join the scheme?

Response	Percentage
Financial protection against unforeseen illness	83.51
I believe it is a better alternative to cash and carry	13.58
A relative/friend asked me to join	1.82
Other	1.10

Similarly, the main benefit insured households expect from the DHIS is to have free health care in times of need. As to how they managed to pay their premiums, many households who were not in the formal sector sold either agricultural or other goods. Financial difficulties were cited as the main reason why some insured households did not insure some of their household members. Over 30% of insured households thought that the premiums were too high and close to half wanted the premiums to be reduced. Insured households were also asked about the appropriateness of timing of premium collection. Over 80% are happy with the current arrangements whereby most premiums are collected not only at harvest time but throughout the year. Almost all households knew that they needed to renew their health insurance membership card every year.

Information was also collected on the knowledge of the benefits to which insured members are entitled. Over 95% of insured households said they knew their entitlements but a follow up question revealed that only 33% knew that the insurance scheme does not cover *all* illnesses. This calls for education to inform the population better about the benefits package. Households saw the NHIS as being beneficial to them with many indicating that they save money from not having to pay hospital bills. They were also no longer afraid to access health facilities because of cost and did not need to borrow money to pay for hospital bills. The most common reason cited by those who indicated that the scheme had not been beneficial to them was that they hadn't used the health service after joining. Distance to the nearest accredited facility was another reason for not enjoying the benefits of NHIS membership.

Over 25% of insured households do not know about the exemption package[50]. For those who did know, over 30% think it should be enlarged. Respondents were also asked as to who in their opinion should be exempted from paying premium to join the NHIS. The aged, disabled, children under 18, orphans and the unemployed were the key categories suggested.

7.3.2 Former members of the NHIS

Households who were no longer classified as insured were asked why they had not renewed their membership. The main reason cited was lack of money and a related reason being that the premium was seen as too expensive. Another important concern, though

[50] The package exempts those under 18 (if the parents are insured), the aged (70+), the indigent and (a recent addition) pregnant women

not as strong, is the poor attitude of health care providers towards patients. Hence former members suggested they will only rejoin the scheme if staff attitudes improve and the premium is reduced.

7.3.3 Uninsured household members

In response to being asked why they were not insured, uninsured households cited lack of money as the main reason (see Table 7.6) rather than poor quality of care or an inadequate benefit package. A similar survey was carried out in India, and the researchers found that the uninsured were very quick to cite lack of money as their reason for not joining, but on deeper probing by senior researchers, they found that lack of money was seldom the real reason. More frequently, it was the case that people had not understood the insurance scheme or its benefits (Ranson, Sinha et al. 2007).

Table 7. 6: Main reason for not joining the NHIS

Variable	Number*	%
No money	1,321	65.61
Premiums unaffordable	174	8.64
No confidence in scheme	94	4.71
Poor quality of care	60	2.99
Registration point not accessible	49	2.46
Prefer out of pocket payment	35	1.75
Covered by a private health insurance	24	1.21
Waiting period too long	23	1.17
Inadequate benefit package	20	1.03
Don't trust providers	16	0.82
Timing of premium collections inappropriate	15	0.79
No Scheme in the area	14	0.74
Not heard about NHIS	7	0.39
Other	154	7.69

*****In '0000s (weighted figures)

7.4 Qualitative views on key issues related to the NHIS

As mentioned earlier, views were elicited on a number of matters relating to health insurance and how it can be expanded to cover all Ghanaians by making it more accessible and sustainable. These views were obtained from the community (both insured and uninsured groups), the six district[51] health insurance scheme managers and the NHIS headquarters in Accra (the capital city of Ghana). These qualitative interviews help to augment the regression and other quantitative results presented above as they provide unrestricted views and information that is not normally captured with a purely quantitative questionnaire.

[51] These are the districts were the SHIELD survey and all the other data were collected.

7.4.1 Views from community and district scheme managers

The views elicited in the qualitative investigations related to contribution levels, frequency of premium increases, ability to pay, benefit package, cross-subsidisation, perception of quality of care at health facilities, and exemptions including the criteria for identification of the poor. The views of the community were elicited first and the scheme managers were later asked to respond to these views and concerns of the community. The results of the community views and the reaction of the scheme managers are presented below.

An FGD of women

An FGD of men

7.4 .1.1 Contribution levels and timing

Results from the interviews revealed that premium levels vary markedly across the country as was the case when the NHIS started. Results from the six districts indicate that premiums vary from ¢72,000 in West Gonja to ¢250,000 in Kpeshie. By law, premiums

are supposed to be graduated but this is not done in practice because of the difficulty involved in identifying who should be charged what. Except for West Gonja (which has maintained the lowest level of premium of ¢72,000 over the years due to poverty - but are considering an increase soon), the other districts have increased premiums more than 3 or 4 times since the start of the NHIS. For instance, Berekum district increased premiums from ¢72,000 in 2004 to ¢100,000 in 2006 and further to ¢160,000 in 2008.

Scheme managers justify these various increases based on the fact that the NHIS Act stipulates a premium range between ¢72,000 and ¢480,000, and as long as the premium levels are still within that range, they are covered by the law and managers seem unwilling to reduce premiums. Scheme managers also justify the increases in premiums on two grounds. First the increasing cost of equipment and supplies for administrative work and secondly the increasing cost of health care. High premium levels are cited by the majority of FGD participants as barriers to renewal of membership, and for the uninsured, as one of the main barrier to their joining the NHIS. However overall the NHIS is seen as good and people want to join if they have the money. The following quotations highlight respondents' concerns:

> *The insurance is good but they should reduce the premiums to allow some of us also join, the premiums are too high* (Uninsured man FGD, Kpehsie)

> *The money one will get to register is our problem. But when you are not a member and you go to the hospital, you are charged more than you would have used to become a member* (Uninsured woman FGD Lawra)

> *True true the insurance is a good thing, the only problem is that the level of premium is too much and it is making some people not to be able to join and some of us will not be able to renew our cards* (Insured woman FGD, West Gonja)

Participants (especially the insured) expressed concerns about the annual increases in the premium which, according to them, could affect their continuing membership. As mentioned earlier, apart from West Gonja, premiums have been increased 3 or 4 times. The concern of respondents is that the increases could result in many people leaving the NHIS and the purpose of setting up the scheme could be lost. The following quote illustrates this:

> *At the very beginning it was ⊄72.000 and then went up to ⊄150,000 and later they took it to ⊄200,000, that is a problem for me because at first it was cheap so I don't understand* (insured woman FGD, Berekum)

However scheme managers think the premiums are affordable and people should be able to pay. A manager mentioned that:

> *"Paying just ¢160,000 for a whole year that will allow one to access health care that can cost ¢1,600,000 is no big deal, people should have no problem but be grateful".*

While these arguments seem valid, scheme managers tend to forget that people are not only paying the premiums but are contributing to health care through their daily consumption of goods and services on which VAT, health insurance levy and other taxes are imposed. In West Gonja for instance, it took one woman who wanted to join the scheme seven months to complete an instalment payment of the premium. The results are consistent with qualitative findings in Burkina Faso where high premiums were cited as a key issue for many people not being willing to pay for community-based health insurance (Dong, Kouyate et al. 2003)

Though many complain about unaffordable premiums, a few (probably the better-off) see it differently. Their argument is that given the broad benefit package (both OPD and inpatient services), paying such a premium for access for a whole year of health care services is still better and cheaper than the infamous cash and carry system . A participant summarises this as follows:

> *Even with the increase, to me it is still good because for the entire year I only have to pay ¢150,000 for health care which maybe without the insurance would have been ¢5,000,000 or ¢10,000,000 but now the government is paying all those bills, so to me it is good* (insured woman FGD, Atwima Nwabiagya)

On timing of premium collection, the FGDs results of community members and the indepth interviews of scheme managers revealed that there is awareness and an appreciation of the fact that all the schemes were flexible such that people could contribute or pay at any time. Some respondents even reported that the NHIS premium collectors allow people to pay on an instalment basis.

7.4 .1.2 Ability to pay or socio-economic status

The majority of respondents in the FGDs agreed that ability to pay is the main factor hindering the enrolment of most people into the NHIS (also see Table 7.6). Especially the uninsured from the northern districts complained of lack of jobs, crop failures and general deprivation which does not allow them to get the needed finances to join the scheme, as is the case in Burkina Faso (Dong, Kouyate et al. 2003). In the regression analysis results

described earlier, though not significant, the rich were more likely to belong to the NHIS than the poor and those who suffer from food shortages in the course of the year were significantly less likely to enrol. The FGDs confirm these findings as the majority of respondents believe that by removing financial barriers, enrolment will increase:

> *It is because we have no money. Our husbands are not employed and we are not also employed. So imagine I carry fire wood to the market to sell. If I get the money from the sales of the firewood, will I use it for feeding or the NHIS? It is indeed very difficult* (uninsured woman FGD, Lawra)

> *Those who have registered and those they exempted have no problem. Those of us who do not have the money to register are in trouble. Imagine you do not have ¢120,000 to register as a member of the scheme and you fall sick. How can you afford the cost of treatment? That is why sometimes we fall sick and are scared of going to the hospital for treatment. The NHIS is good but the poverty is preventing us from registering* (Uninsured woman FGD, West Gonja)

> *If there can be a way to help all of us register, it will be good. The poverty is really killing us* (uninsured man FGD, Berekum).

In reaction to the problem of ability to pay that community members particularly the uninsured expressed, district scheme managers felt that the level of premiums was such that the majority of people should be able to pay. According to them (scheme managers), it is the question of people's priority and some people don't place much priority on their health. According to a scheme manager *"if you go to the market now you will see those who claim they don't have the money to pay the premiums drinking and enjoying themselves"*. One scheme manager however noted that the lack of cash could be a cause for some people not joining and because of that he is developing a way of getting around the issue to increase enrolment. This involves accepting in-kind payments: *"in this district, there is a cash-crop called sheanut which is picked freely in the bush and when they pick the nuts, it takes time and effort to sell"*. According to the manager if he accepts these *sheanuts* as premium payments, it could bring some relief and increase his coverage. This innovative idea is encouraging and other scheme managers may want to learn from this and devise other innovative ways of increasing coverage of their schemes.

The inability to pay which inhibits enrolment in the NHIS is not unique in this study but consistent with studies elsewhere. For instance in Senegal and Burkina Faso, ability to pay was cited as the main reason why people could not enrol in the community health insurance (Dong, Kouyate et al. 2003; Jütting 2004). A study in Kenya also revealed that inability to pay or lack of financial means was a key factor hindering the expansion of the

social health insurance (Mathauer, Schmidt et al. 2008). Generally, lack of ability to pay is a major barrier to the growth in community and social health insurance schemes (Arhin-Tenkorang 2004; Carrin and James 2004; Preker and Carrin 2004; Mills 2007).

7.4 .1.3 Quality of care and utilisation of health care services

Quality of care is also a key factor influencing enrolment. Some participants, especially the insured, believe the insured are often given inferior drugs and attribute this to the idea that health providers think that because they are insured, they are over-using the health care services (i.e. moral hazard). Both insured and uninsured respondents also reported that health insurance card bearers wait a longer time before receiving treatment than those who pay out-of-pocket. This was cited among the uninsured as one of the reasons why they feel reluctant to join. Among the insured, some said they may not renew their membership if this situation persists as they see this as discrimination. In reaction, most managers disagreed and contended that insured clients were not discriminated against and given inferior drugs but rather served with drugs contained in the NHIS drug list. *"Some of the drugs could be generic but equally good and could explain the confusion that insured clients are given inferior drugs*". To some scheme managers the misconceptions all stem from the high levels of illiteracy of the population. There is a need for public education to disabuse people's perceptions of the inferiority of generic drugs as these perceptions can negatively affect enrolment levels.

Even though participants (especially the rural insured) admitted that drug availability at the health facilities improved after the introduction of health insurance, they contend that uninsured clients are given preferential treatment by health care providers because they are paying cash.

Participants thought that with the increased workload as a result of the introduction of health insurance, health workers should be given greater incentives to make the system work better. They believe this could stop discrimination, wasting the time of the insured and providing them with inferior drugs.

Another source of concern in terms of quality of care is the general attitude of health care providers to the insured clients. Insured participants in the FGDs complained bitterly about this. According to them, *"once the nurses see you with a NHIS ID card, they do not even want to look at you, they feel you want cheap things"*. Scheme managers admitted

having received reports about this and have raised it in their joint meetings with health care providers. Some managers however felt some insured clients are exaggerating the issue. However poor attitude among health care providers has been a recurrent issue and could threaten the expansion of the NHIS. In the earlier NHIS study in the Kassena-Nankana district of Northern Ghana (Akazili, Anto et al. 2005), poor health staff attitudes was a major reason why some were not willing to join the NHIS. These findings are also consistent findings from Senegal and Burkina Faso where quality of health care relating to staff attitudes are issues of concern to insured clients (Dong, Kouyate et al. 2003; Jütting 2004). The box below captures a recent news item on the issue of staff attitudes and efforts to solve it in one of ten regions in the country.

Box 7. 1: **GHS sensitises personnel on customer care**

The Upper East Regional Directorate of the Ghana Health Service (GHS) is embarking on a regional campaign to sensitize its staff on customer care in order to attract more patients to its facilities.

This has been necessitated by recent decline in patient attendance to some key public health facilities in the region following recent upsurge in private health facilities.

The decline has partly been attributed to the lack of customer care skills by health providers from the GHS, thereby affecting service delivery and trust from members of the public who hitherto considered public health facilities as their first choice in seeking medical care.

All nine districts in the region are expected to present 50 participants each to be schooled on topics such as "Good Customer Care and Customer Relations", "Patient Rights and the Code of Ethics of the Service" and "Communication Skills".

The regional director indicated that the idea was also to get health staff to understand the modalities in customer care so that they could add more innovative skills in dealing with patients who patronized GHS facilities.

Source: http://news.peacefmonline.com/health/200909/25955.php

On the issue of long queues and delays for insured clients compared to cash paying clients, scheme managers agreed and said the problem has to do with increased utilisation and the level of documentation associated with the insured. According to one scheme manager, out of 36,000 people who insured in 2007, 33,000 (over 90%) of them have used health care services. With such high utilisation rates, according to this scheme manager, there are bound to be long queues and delays. According to him the high utilisation by insured clients also threatens the very survival of the scheme and defeats the spirit of health insurance.

7.4.1.4 Cross-subsidisation

Participants in the FGDs were asked two main questions related to cross-subsidisation. First, whether they were willing to pay to support the health care needs of those who are more prone to illness (such as chronic patients and the aged). Secondly, whether they were willing or not to pay to support those who could not pay at all. Answers to these questions are critical since they underpin the spirit and purpose of social health insurance. Interestingly the majority of insured respondents, especially those from the rural areas, were prepared to contribute to support risk and income cross-subsidies. They indicated that with the user fees (*cash and carry*) system when a member of their community was ill and did not have money, they either contributed or borrowed money to send the individual to a health facility. This clearly shows the spirit of social solidarity at work. This revelation explains why community health insurance schemes that started in the 1990s spread so quickly in Ghana such that by 2002, there were over 150 community mutual health organisations in the country (Atim, Grey et al. 2001). Some participants indicated that they would feel guilty if they did not support an individual who is sick and the person dies. Some respondents with strong religious beliefs suggested it was a religious duty to help those who were in need. This spirit of social solidarity was also found in Kenya to be a key factor in the acceptance and growth of the social health insurance and in Burkina Faso, the growth of community-based health insurance. For instance, in Kenya there was a strong spirit of *Harambee* (Swahili word meaning 'lets pull together') and this means people sharing and supporting each other within their community (Mathauer, Schmidt et al. 2008).

However some participants, especially the men in urban areas, had some reservations and indicated that they would not contribute to support those who got illnesses through their own lifestyle choices involving drinking, smoking and immoral acts.

7.4 .1.5 Exemptions

Respondents in the FGDs were specifically asked whether there were certain groups of people who they thought should be exempted from paying premiums and registration fees to join the NHIS. Such information on who the community wants to see exempted could be more acceptable and effective than leaving such judgments to policy makers who may push their own agenda on who is to be exempted. There was a general consensus from both insured and uninsured respondents to exempt the following groups: all children, the aged, the sick, the disabled and the poor. Female respondents specifically mentioned

women who have lost their husbands and have children. Male respondents from rural areas would want people whose crops fail due to lack of rainfall in a particular year to be exempted since it was not their fault, that they are unable to pay the contribution.

I probed further by asking respondents what criteria they would use to identify a poor person or household to be exempted. Some respondents mentioned those who have no source of income and depend on hand-outs of clothing and food. They also suggested those who cannot provide themselves with a square meal a day. As to who should play the role of identifying such people, some respondents felt that pastors could be trusted to visit people in their homes and make the assessments.

> *"Since the pastors are men of God they will be able to do genuine work by going round the houses and assessing those who are really poor"* (insured man FGD, Dangme West)

Some suggested that traditional and community leaders could also be trusted to assess those who are poor since they live among the people and have good knowledge of them. However, a few respondents did concede that it was difficult to identify the poor since not all will tell the truth about their state of affairs.

However scheme managers are following the NHIS Act that spells out the modalities for exemption. These include children under 18 (when both or one parent is registered), the aged (70+) and the indigent. The difficulty that was expressed by all scheme managers was how to identify the aged and particularly the indigent. According to some scheme managers, a 50 year old person could look 70 and in the absence of birth certificates this is posing a challenge. A more challenging category is the indigent. The NHIS Act defines these as the core poor who have no place of abode and who do not get support from anybody. This criterion is not only limiting but vague and its application and interpretation is left to the discretion of the scheme managers and their staff. Thus scheme managers who are not sympathetic to the poor will tend to register fewer indigent. It is not surprising that while there are overall increases in enrolment levels each year, the percentage of the indigent covered is reducing. When the matter of how to improve on the identification of the poor for exemption was further investigated, it transpires that some schemes have started putting community committees in place to help them in this regard. Perhaps the suggestion from the focus group discussion that pastors and community leaders help to identify the poor could also be explored. All schemes should

be encouraged to develop innovative and effective ways to identify the poor as universal coverage cannot be achieved without that. It is also important that the exempt groups or the poor are *not* given different cards to the standard NHIS cards as this could negatively affect their enrolment.

7.4.1.6 Other issues of concern

Waiting period

Waiting time (i.e. from registration to getting an ID card to access health care) can take up to six months or more and this is a source of concern which was expressed in the focus group discussions with community members. District scheme managers however disagreed with this and say the waiting period is currently less than 4 months. Some managers however admitted that it used to take up to 6 months for someone to get his or her NHIS card. According to them the problem was due to the lack of adequate machines to produce the ID cards. Managers from the northern part of the country said they used to have to travel more than 500kms to the south to have the ID cards processed but now they have the machines onsite, so the process does not take long any more. This however was disputed by some insured members in the FGDs. Whatever the case, there is need for education on how long members have to wait for their NHIS ID cards. Members must also be proactive in demanding their cards if it is taking too long.

Benefit package

Most respondents across the six districts did not know that certain diseases (5% of the disease burden) were not covered by the NHIS. This might be due to the public education campaign for the NHIS that explicitly indicated that "the health insurance was coming to take of *all* the health care needs". Respondents were generally happy with the benefit package but wanted it extended to cover all illnesses as was initially promised.

> *It will be good if they can make the health insurance to cover all illness* (FGD Women, Lawra)

However, adequacy of the benefit package was unanimously endorsed by the 6 district scheme managers. Managers also thought that the benefit package was perhaps more than adequate as it covers about 95% of the disease burden of Ghanaians – they felt it was too generous for the amount of premiums involved.

Reimbursement and fraud

There are delays in the reimbursement of claims to providers and if this not properly dealt with it could affect the survival of the schemes. Managers were asked about this issue in

the in-depth interviews. Unsurprisingly some managers laid the blame for delays in reimbursement at the door of health care providers. According to the scheme managers, providers are always out to cheat and if their claims are not properly scrutinised, they could defraud the scheme and cause financial loss. One cited a case where a provider presented claims in which names and amounts were repeated. To scheme managers, because they have to scrutinise the claims properly, delays are unavoidable. Another important factor that causes delays according to the scheme managers is the late transfer of funds from the National Health Insurance Fund (NHIF) to the district scheme to cover formal sector workers, exempt groups and cover for claims. Some managers indicated that this could cause delays of up to a year or more. For instance in 2007, the West Gonja scheme owed the district hospital up to ¢1 billion and this debt has been going on for over a year. When providers run out of patience they also stop providing services to insured clients which has implications for the insured members' willingness to renew their membership.

Another key problem mentioned by scheme managers that causes delays is lack of adequate staff at both ends (the scheme and providers) to quickly process claims for vetting. On average however, scheme managers indicated it takes 3 months to reimburse. Some scheme managers also suggested that once claims are presented, they pay 40% of the total claim to ease the burden on providers and the remainder is paid after the vetting of the claims. Efforts must however be made to remove all barriers to reimbursement if NHIS is to expand and provide universal coverage.

Funding of the scheme

The main source of funding according to scheme managers is the reinsurance transfers from the NHIF. These come in bulk to cover the administrative cost, formal sector workers and the exempted groups. Only West Gonja indicated they had funding from DANIDA. Premiums and registration fees constitute less than 10% of their funding according to scheme managers. Scheme managers complained about the inadequacy and delays of the funding from NHIF. This creates unnecessary friction between providers and the DHIS and as the old adage says "*when two elephants fight it is the grass that suffers*". The result of the friction between providers and the DHIS is that insured clients suffer and again this could affect future enrolments and renewals.

Community participation and sustainability of the scheme

Most of the scheme managers interviewed said there is a high level of community participation in the running of the schemes at the district level. This participation according to them was through the boards that comprise 15 members drawn from the communities in the district. They meet at least four times a year to advise the scheme managers on the problems they identify from their communities. The boards also ensure that the schemes adhere to the laws that set them up. According to the scheme managers, the boards have been very helpful in that regard. Apart from the meetings of the boards, the schemes also organise annual general meetings (AGMs) of all their members to discuss issues related to the scheme, including premium adjustment. An innovative way of promoting effective community participation in the scheme was to institute health insurance clubs in communities and schools. This idea (when implemented) according to the West Gonja scheme manager will help educate its members on the whole idea of health insurance and assist in expanding coverage.

All six scheme managers believe the schemes enjoy the support of the population and that is why there are annual increases in coverage.

On the sustainability of the schemes, managers agree that there is need for mass public education, not only to improve the understanding of the principle of health insurance but on the need for people to live healthy lifestyles. People also need to be educated to pursue preventive health activities such as cleanliness. They believe this will reduce the number of people who 'flock' to the health facilities to seek care. Another issue that was raised by scheme managers is the problem of providers who must stop seeing the NHIS as an opportunity to make money by whatever means. Scheme managers think huge and fraudulent claims by providers threaten the survival of the NHIS.

Another suggestion that scheme managers thought could help sustain the NHIS but which is perhaps controversial is increasing the premium levels. Some think the premiums are low compared to the benefit package and want to see them raised so as to increase the pot of funds. They make the simple comparison of the premium level and the 'cash and carry' fees and conclude that the premiums are low. However as mentioned earlier they fail to recognise that people are already paying through taxes on goods and services consumed from which the large part of the NHIS funding comes from. Scheme managers also

suggested incentives package to their staff which will help them to work harder to sustain the scheme. Such incentive issues emerged in an earlier study on the efficiency of health centres as a key factor influencing health workers' performance (Akazili, Adjuik et al. 2008).

7.4.2 Views from the NHIS Headquarters

Information was also collected from the health insurance headquarters, specifically from a representative of the chief executive officer (CEO) of the NHIS. The main issues of concern raised by the focus group discussion and the indepth interviews with scheme managers were put to the CEO's representative. These included the perception of the NHIS, the premium contribution, exemptions (especially the poor), cross-subsidisation, the transfer of funds/reinsurance and general challenges of the NHIS.

The CEO's representative indicated that the scheme was designed as a pro-poor financing arrangement just like all other social health insurance schemes such that the rich, the healthy and young cross-subsidise the health needs of the poor, the sick and the aged. He acknowledged that the premiums collected at the district levels are not adequate to cover the health expenses incurred by clients, so the NHIS headquarters transfer funds not only to cover contributions of the formal sector workers and the exempt group but to cover the difference between premiums and the cost of health care for insured clients at the district levels. On the question of the delays in the transfer of the funds to the districts, he attributed this delay to the district schemes. To him, some of the schemes submit inconsistent requests which need clarification before transfers are made. He also attributed delays to delays in the transfer of funds from the Ministry of Finance.

On exemptions, he acknowledged that there are problems, especially in terms of the identification of the indigent or the poor and that a complete review of the laws is required to deal effectively with this problem. The following summarises his thoughts:

> *See, the mechanism for identifying indigents is not working properly. It is not working properly because if you look at the definition of indigence in the law, believe me most poor people in our hometowns will not qualify. When you go to my hometown, the poorest person probably lives in a house you know, they belong to family. They live in a family home but the indigent definition is somebody who doesn't have a place to stay, doesn't have income doesn't have…, I mean excuse me to say, I mean it has to be someone who lives on the street ok so the definition is too difficult to apply ok to capture more people, more poor people so it is one of our challenges ok then the schemes are semi autonomous they use their community agents to decide who an indigent is. So there is no equity there*

> *because it is very varied ok. People…. and I said if you go strictly according to the law you won't capture many indigent people so poor people are not really on the whole being served correctly by national health insurance so we need the support of everyone of you to help us review some of the things in the law* (In-depth interview NHIS headquarters).

With regard to the waiting period and other issues, the CEO's representative said that while the current average waiting period of 3 to 4 months is within the law, the NHIS is working to reduce it. To him, people should be proactive in requesting or following up on obtaining their ID cards. He also noted that complaints have been brought to his attention on health providers' fraud, poor quality of care and the poor attitude of providers towards health insurance clients. Other complaints include long queues by insurance clients and complaints of insured clients receiving inferior drugs at health facilities. The Headquarters is working with the Ghana Health Services to resolve these issues.

There was also a recognition that the Authority of the NHIS has not fared well in the monitoring and evaluation of the district schemes and this was attributed to the limited number of staff that the NHIS law allows them to employ. Most scheme managers indicated they have not had any supervisory visits from the NHIS headquarters so they do not know how well they are performing.

On the general growth and sustainability of the scheme, the CEO's representative's views were not too different from those expressed by the district scheme managers. However, he added that the earmarked tax for health insurance or the health insurance levy could be increased to support the financial basis of the scheme since the current funding pot could run out if enrolment increases. He also called on international organisations to keep supporting the Ghana NHIS to achieve its objective.

7.5 Summary

The key issues emerging from examining the factors determining the enrolment in the NHIS include contribution levels, ability to pay, and perceived quality of care. These factors are also consistent with findings elsewhere; these factors also influenced enrolments in community-based health insurance in Senegal and Burkina Faso and the social health insurance in Kenya (Dong, Kouyate et al. 2003; Preker and Carrin 2004; Mathauer, Schmidt et al. 2008). The rich and those who did not face food shortages in the preceding year were more likely to be insured. The results of the interviews, especially in the focus groups, revealed that lack of money and high premiums are the main barriers to

people joining the NHIS. These revelations are consistent with a study titled “Does the Ghana NHIS cover the poor?” which found over 90% of the uninsured attributed their inability to insure to high premium levels and poverty (Asante and Aikins 2008). People are calling for the inclusion of all drugs and all health conditions in the benefit package as well as the broadening of the exemption group to cover all vulnerable groups. The perceived quality of care including staff attitudes also came up and it is to be hoped that these issues will be given the attention needed to ensure not only the survival of the scheme but the expansion of the scheme to provide equitable and universal cover to all people in the country.

Chapter Eight: Key issues and challenges in attaining financial protection and universal coverage in the Ghanaian health care system

8.0 Introduction

Many African countries, including Ghana continue to face difficulties in providing affordable health care for their citizens. This is aggravated by out-of-pocket payments that remain a significant source of financing. As stated in chapter one, OOP payments still account for about 45% of health care financing in Ghana. This is similar to many other African countries (Bate and Witter 2003; McIntyre, Gilson et al. 2005). As also mentioned earlier, there is abundant evidence that direct payments for health care have negative consequences for the population, particularly the poor and vulnerable, to the extent that the poor often forgo seeking treatment from formal health care altogether. They sometimes seek to live as if they are not ill (Arhin-Tenkorang 2000; Russell and Abdella 2002; Xu, Evans et al. 2003; McIntyre, Thiede et al. 2005; O'Donnell, van Doorslaer et al. 2008; Chuma, Musimbi et al. 2009; Yates 2009). Carrin and Morris (2005) quantified the number of deaths in 20 African countries that occurred as a result of user fees and other direct payments. They obtained the startling figure of 3 million child deaths over the past 2 decades. For instance in Ghana some new born babies and their poor mothers were sometimes detained at health facilities because they could not pay for the services. Their husbands or carers would often have to work at these facilities for several days and sometimes weeks to cover the medical bills of the delivery (Nyonator and Kutzin 1999; Garshong, Ansah et al. 2002). OOP payments are frequently regressive and often catastrophic. However, with effective exemptions and subsidisation of services to the poor, OOP payments could be progressive (as e.g. in Malaysia). Evidence abounds however in many countries that exemptions often fail to ameliorate the effects of user fees primarily because of poor implementation (O'Donnell, van Doorslaer et al. 2008).

So debilitating are user fees and other direct payments, that communities in a number of African countries have started to organise themselves into groups to support one another to cover health care costs. By the late 1990s and early 2000s, there were a number of community-based health insurance schemes (Atim, Grey et al. 2001). In Ghana for instance, there were 159 community-based mutual health insurance schemes by 2002 but these were rather small covering only 1% of the total population. The World Bank and IMF who hitherto advocated for user fees made a U-turn by supporting community-based

health insurance schemes. They also encouraged countries, especially developing ones, not only to remove user fees but also to incorporate health insurance into their health care system.

The WHO has gone further and in the World Health Assembly resolution WHA58.33 they call on all member states to "plan the transition to universal coverage of their citizens" (World Health Organization 2005). According to Mills (2007), all nations desire to provide universal coverage of health services. However the mix of financing sources and service provision arrangements within each country's health system and the degree of equity vary. Countries like Ghana, which is yet to achieve universal coverage, are faced with several options with respect to strategies that will move it closer to universal coverage, but there is international consensus that pre-payment mechanisms (such as tax and insurance) should be the core of the financing system (McIntyre, Gilson et al. 2005; World Health Organization 2005; McIntyre 2007; O'Donnell, van Doorslaer et al. 2008; Wagstaff 2008; Yates 2009).

The key question then is what options are available to Ghana to move towards universal coverage. The main pre-payment funding mechanisms that currently exist in Ghana are general tax funding and the NHI (which involves a range of contributions by the formal and informal sector as well as a dedicated VAT component). In addition, donor funds are currently, and will continue to be, a relatively large component of funding in Ghana. For Ghana, the issue is how to improve the collection and use of tax and NHI resources, supported by donor funds, to achieve universal coverage. Universal coverage (see conceptual framework in Chapter Three) is commonly defined as all citizens having access to adequate health care at an affordable cost (Davies and Carrin 2001; McIntyre, Gilson et al. 2005). Universal coverage relates to providing financial protection and access to needed health care for the whole population. This means that universal coverage can be achieved through a combination of different financing mechanisms including taxes and health insurance.

In addition to improving the efficiency of the tax system and ensuring that the health sector gets a fair share of general tax funds, there is a need to address the problems associated with the NHI as it is currently being implemented. Ghana has already elected to pursue a policy path of NHI as the means for achieving universal coverage. Despite

achieving dramatic expansion of NHI coverage in the last few years, there are concerns around NHI coverage of the informal sector. In particular, the previous chapters have highlighted that NHI contributions by the informal sector are regressive and that the affordability of NHI contributions for the informal sector is seen as the biggest constraint to joining the NHI. Unless coverage of the informal sector is dramatically improved, those who are not covered by the NHI will continue to have to make OOP payments to health services, but as revealed in Chapters Five and Six, OOP payments are not only a regressive means of financing health care but are catastrophic and have an impoverishment effect. The major *challenge* facing the Government, health planners and policy makers in the health sector in Ghana is how best to bring the large informal sector fully into the fold of the NHI.

There are two main options facing the Ghanaian government. The first is to continue with the current arrangements but identify and resolve all the obstacles and challenges that stand in the way of achieving universal coverage. The second is to change the current structure of the financing system such that NHI contributions for the informal sector, from which the majority of the poor and vulnerable come, are comprehensively covered out of tax revenue. Each of these options is considered in some detail in the next sections.

8.1 Option 1: Continue with informal sector contributions but address key problems

The key problems as captured in the conceptual framework in Chapter Three and the findings in Chapter Seven include the inability of the scheme to implement its initial proposals, particularly in terms of lack of uniform premiums across the country, ineffective exemption mechanisms and quality of care issues.

The initial proposal on premium contributions was to have a graduated premium for the informal sector of ¢72,000 (GH¢7.2) to ¢480,000 (GH¢48.0)[52]. The purpose of the graduated premiums is to ensure equity. The assessment of who should pay what contribution was supposed to be based on the criteria in Table 8.1.

[52] As indicated earlier, the Ghana currency was redenominated in July 2007 such that ¢10,000 became GH¢1. The name of the currency changed from "cedis (¢)" to "Ghana cedis (GH¢)". The inter-bank exchange rate to the US$ at the time was ¢9400 (¢0.94) to US$1

Table 8. 7: Graduated premium arrangements

Core Poor	A	Adults who are unemployed and do not receive any identifiable and constant support from elsewhere for survival	Free
Very Poor	B	Adults who are unemployed but receive identifiable and consistent financial support from sources of low income	¢72,000
Poor	C	Adults who are employed but receive low returns for their efforts and are unable to meet their basic needs	
Middle income	D	Adults who are employed and able to meet their basic needs	¢180,000
Rich	E	Adults who are able to meet their basic needs and some of their wants.	¢480,000
Very Rich	F	Adults who are able to meet their needs and most of their wants.	

Source: Ministry of Health 2004

This initial proposal for different contributions for different socio-economic groups has not been implemented. Each district was supposed to categorise the population in the informal sector into these socio-economic groups (see Table 8.1) and charge them according to their income level and ability to pay. The ultimate goal was to try to ensure equity in contributions based on ability to pay. This would also ensure cross-subsidisation where the rich were to pay more to subsidize the poor.

Unfortunately this noble idea and equity goal have not been implemented in practice. According to the implementers (the district scheme managers), the reason for this is that socio-economic classification is very complex, especially in the informal sector given the different economic activities in which people engage (farmers, traders, artisans, etc.).

Yet, the findings in Chapter Seven and other studies (Adams, Darko et al. 2002; Garshong, Ansah et al. 2002; Bitrán and Giedion 2003; McIntyre 2003; Teshome 2005; Witter, Arhinful et al. 2007) indicate that universal coverage through NHI cannot be achieved without effective exemptions being put in place. The historical context to this conclusion is as follows. User fees at public health facilities were reintroduced in the late 1960s. The main legislation governing fee exemptions are the Hospital Fees Act (No 387) of 1971 and the Hospital Fees Regulation (LI 1313) of 1985 (McIntyre 2003; Ministry of Health 2003). The Legislative Instrument (LI) specified fees for certain health services such as diagnostic procedures and dental and surgical services. The exemptions specified under these regulations focused on those diseases deemed to be of public health importance: immunization, ante-natal and post-natal services (Nyonator and Kutzin 1999; Garshong, Ansah et al. 2002). Later, exemptions on snake-bites, children under five, pregnant women, the elderly (70+) and paupers or the indigent were added. The unique

aspect to Ghana's exemptions policy is that the MOH instituted a mechanism for re-funding exemptions, in that facilities were refunded if they submitted a financial statement indicating funds lost through exemptions (Bitrán and Giedion 2003; McIntyre 2003; McIntyre, Gilson et al. 2005).

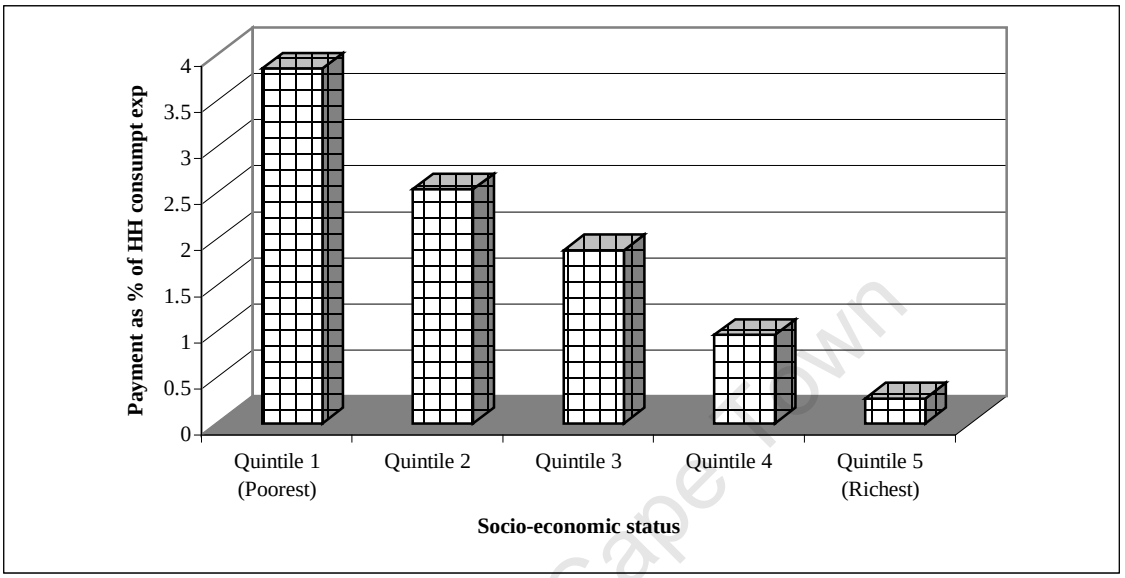
However the poor implementation of these exemptions means that people, particularly the poor, who are meant to benefit are still paying (Gilson, Russell et al. 1998; Garshong, Ansah et al. 2002; Bitrán and Giedion 2003; Gilson and McIntyre 2005). For example, a study in the Volta region of Ghana indicated that over 90% of those who were supposed to benefit from exemptions were still paying or never got the exemptions (Nyonator and Kutzin 1999). This situation is not limited to Ghana. For instance in Zambia, only 1% of exemptions were granted on the basis of poverty, indicating that poor people were either staying away or being made to pay (Blas and Limbambala 2001; Yates 2009). As mentioned in Chapter Seven, the main problem concerning the exemptions in Ghana, which is similar to other countries, is the lack of clarity in the exemption process which stems from the difficulty of identifying those eligible, especially the indigents. The lack of understanding by health care providers of the identification process and the lack of funds to reimburse or pay for exemption claims are key issues that result in poor implementation of the exemptions policy not only in Ghana but in many African countries such as Zambia, Kenya, South Africa and Uganda (Bitrán and Giedion 2003; McIntyre, Gilson et al. 2005).

The problems of the exemptions under the NHIS are not different from those for user fees. It can be argued that the burden of informal sector NHI contributions would not have been regressive (see Figure 8.1) if the exemptions under the NHIS, especially those that seek to identify and exempt the poor, were effective. The regressivity is because, in practice, the informal sector is generally paying a uniform flat rate contribution. The impact of this is that the premium contribution of the poorest quintile represented almost 4% of their consumption expenditure; for the richest quintile it was less that 0.4% (see Figure 8.1).

Those in the low-income group have suffered (and continue to suffer) from the consequences of the current implementation problems. In the focus group discussions captured in Chapter Seven, both the insured and uninsured (and particularly the latter)

complain bitterly about what for them represent high premiums. If the premium graduation had been implemented, almost certainly more of those in the low-income group would have joined.

Figure 8. 1: Informal sector NHI contribution across consumption expenditure quintile



There is thus an urgent need to revisit the issue of graduated premiums. Evidence abounds that flat premiums as is currently the practice, even though not the policy, in Ghana negatively influence enrolment (Atim 1999). It is clear that the previously proposed system of graduation as captured in Table 8.1 is too complex and needs to be simplified if it is to be implemented successfully. For instance the categorisation might be reduced to three, i.e. the rich, the not so rich and the exempted group. The premium contributions would then be reduced from five to just two categories (the not so rich and the rich) and the rest would be exempt. What can help in placing people into these categories is to identify people on the basis of their economic activities. Alternatively, a check list of indicators of poverty could be adopted to allow categorisation of individuals into the rich, the not so rich and exempt group. Such checklists of detailed indicators of poverty (e.g. chronic illness, permanent source of income, housing condition, nutritional status, age, level of education, orphan, availability of clothing, ability to pay school fees and hospital bills, widow with large family, ownership of assets and ability to pay development level) which particularly aim at targeting the poor to be exempted have been developed and used in community-based health insurance schemes in Ghana, Zambia, Columbia and Thailand (Bitrán and Giedion 2003).

To ensure some consistency, guidelines on the indicators to be included in an 'exemption questionnaire' should be determined nationally. However, these guidelines should be based on initial research at community level, should be undertaken to identify indicators that are appropriate in the Ghanaian context. Preliminary research on this issue has already been undertaken by Dzikunu and Wajangi (2004). There should also be an element of flexibility permitted in that some indicators may not be appropriate in certain communities (e.g. livestock ownership for residents of large urban areas).

These kinds of indicators could be used not only for identifying those who should be exempted, but also to classify individuals for graduated contributions. In Columbia for instance, 13 variables were used to calculate the SISBEN index. The SISBEN gives a continuous score from 0 to 100 (poorest to richest) and divided into levels (1 to 6). Level 1 and 2 represent people in poverty and are thus qualified for local and national poverty alleviation programmes (Castaneda 2005).

There are concerns that if a questionnaire is used to identify those requiring exemption (and for categorising households for graduated contributions), respondents may not answer truthfully. However, if the process is undertaken at community level, not only will there be greater local knowledge, but those completing the forms will be able to verify the accuracy of at least some of the information (e.g. materials for house walls and roof). Such a community-based process is easier to undertake in rural than large urban areas. It is also very resource intensive, but does not necessarily need to be undertaken every year.

As highlighted in Chapter Seven, community members, particularly the insured, think that community leaders such as pastors and other respected community leaders would be in a better position to help to identify those who are genuinely poor for exemption. Evidence has shown that local agents may have more and better information on households characteristics upon which to determine those who are in need (Conning and Kevane 2000; Alderman 2002; Bitrán and Giedion 2003).

Premium graduation is certainly not easy to implement, but is the key to attracting the low-income group to join the NHI. It succeeded in attracting low income groups into the Gonoshasthaya Kendra Insurance scheme in Bangladesh, which ensured that the poorest

were subsidised (Desmet, Chowdhury et al. 1999). There is every reason to believe it would have similar success in Ghana.

Another issue that is key to achieving universal coverage through the expansion of the NHI is the quality of health care in public health services. Poor quality generally makes the poor turn away from the subsidized services at public health facilities to patronize private services or not to seek care at all. In several studies in Ghana and elsewhere, poor staff attitudes coupled with "under-the table" payments is a key reason for the poor moving from the lower cost subsidized care in public facilities to the higher cost private providers (Gilson, Russell et al. 1995; Garshong, Ansah et al. 2002; O'Donnell, van Doorslaer et al. 2008; Chuma, Musimbi et al. 2009). As highlighted in Chapter Seven, perceived poor quality of care is one of the main criticisms that people make of the NHIS. In a recent study on the pre-requisites for a National Health Insurance in South Africa, McInytre and others observed that quality of care reflected through issues such as the cleanliness of public facilities and availability of drugs is key to the successful implementation of the proposed NHI in South Africa (McIntyre, Goudge et al. 2009).

Ensuring quality of care in public facilities is not easy but is essential to achieving universal coverage. Every effort must be made to improve the quality of health care. The NHI Act requires that the scheme signs contracts with services providers. It is thus in the interests of the scheme to negotiate and sign contracts based not only on the price and type of services but the quality of services as well. The signing of contracts is not enough. They need to be enforced ensuring that all parties are committed to meeting the agreements in the contracts. Members (the insured) must also be properly educated on their rights and entitlements at health facilities, as the literature points to the fact that equity is enhanced if the basic rights of the individual or patients, particularly vulnerable groups, are respected (Ngwena 2000; Evans, Whitehead et al. 2001; London 2007; London 2008; Tindana and Boateng 2008). Another mechanism that can be used to ensure quality of care is accreditation. According to the NHIS Law, the National Health Insurance Council (NHIC) is mandated to accredit all service providers who meet the appropriate quality standards as providers of services to NHIS members. To ensure that providers continue to improve on quality, views from insured members about providers should be considered when accreditation is to be renewed. If providers know that insured

members have a say in accreditation renewal, then this could contribute to ensuring that patients are treated with respect and dignity (Walker and Gilson 2004).

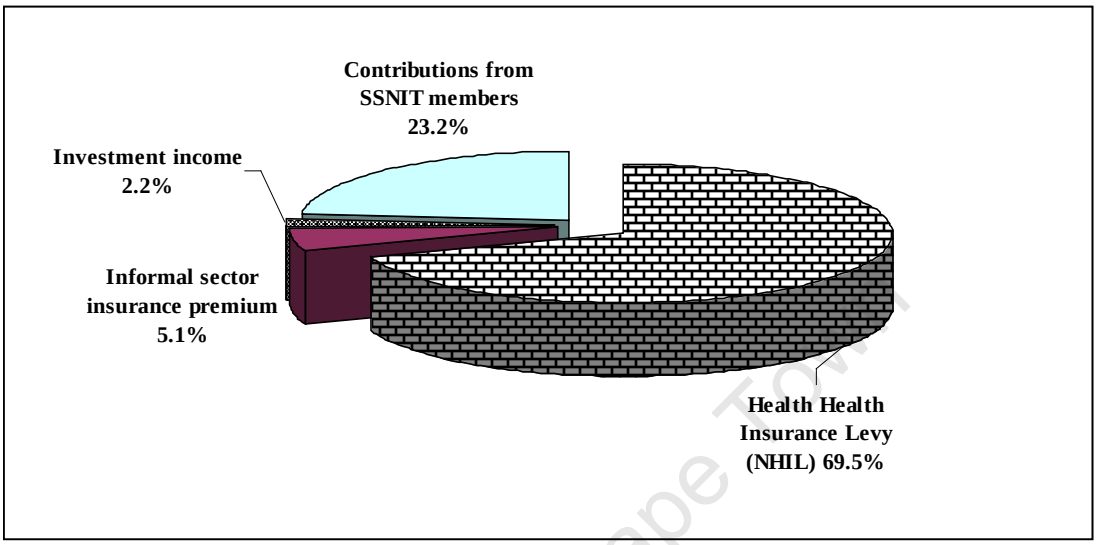
An issue that negatively affects quality of care is the weak gate-keeper system (referral system) currently in place. None of the six districts sampled in this study is ensuring strict compliance with the gate-keeper system. This is contrary to the initial arrangements made under the NHIS that require all insured members to visit a primary health care facility as the first point of call and they can only visit a higher level facility or hospital upon referral. The non-enforcement of the gate-keeper system has serious implications. In the first place, there is inefficiency in resource use if people are allowed to seek health care directly from hospitals. Health care at health centres and clinics is relatively less expensive than at hospitals (Akazili, Adjuik et al. 2008). Another implication is that the quality of care insured clients are seeking by bypassing the referral system is not obtained because of the long queues at the hospitals since so many patients are going there. It is important that the referral system is properly adhered to by first educating insured members and for the hospitals to insist that patients are attended to only if they have been referred, except in the case where the person is seriously ill. Evidence shows that the enforcement of the referral system not only sustains the financing system but improves quality of care within hospitals. For example one of the major factors that contributed to the success of the UMASIDA scheme in Tanzania was the development of and adherence to a strict gate-keeper mechanism (Tibandebage 2003; Kamuzora 2005). However, the key issue which is highlighted in the literature that could ensure effective adherence to the gate-keeper system is to improve the quality of care at the primary health level (Walker and Gilson 2004). In Ghana, these include the CHPS and health centres.

In summary, if Ghana is to achieve universal coverage within the existing NHIS framework, the two most important issues to address are: effectively identifying and exempting the poor from NHI contributions and address quality of care deficiencies, particularly the perceived inferior quality of care provided to NHI members. Alternatively, the Ghanaian government can consider changing their approach to covering the informal sector via the NHI.

8.2 Option 2: Fund informal sector contributions from tax revenue

The current funding sources of the NHI consist of the NHIL (about 70%), formal sector contributions via SSNIT (about 23%) and informal sector contributions (which is less that 6% - see Figure 8.2).

Figure 8. 2: Income sources for the NHIS, 2008, Ghana



Source: Ministry of Health 2009

The question that arises is whether it is worthwhile collecting the premium from the informal sector which constitutes less than 6%[53] yet collection costs may be high (Atim, Grey et al. 2001). Even though this study has not looked at the revenue generated relative to the administrative cost of collecting such revenue, considering the process involved in the collection, the net revenue may be very low. For instance, each of the district health insurance schemes (over 140) in country has about 8 permanent staff and about 20 to 30 non-permanent or temporary staff depending on the size (population and land area) of the district. The temporary staff, most of whom are called "collecting agents", are given logistical support including bicycles. In addition to this, they are given a monthly allowance which is a commission on each person they have registered. These agents are supervised by the permanent staff using motorbikes which is an additional cost. In some instances, some of the agents have absconded with the premiums they collected from the communities which means the affected schemes have to bear the cost. Some scheme managers indicated they have had some experience of bad "collecting agents". Some "collecting agents" are even reported to be taking bribes from people to register them as

[53] Though this may rise as more people from the informal sector join the NHIS

exempt. All these would certainly make the cost of collecting the premiums substantial and will thus limit the net revenue that will be realised.

As highlighted in Chapter Seven, premiums pose a major barrier to the enrolment of people from the informal sector, particularly the poor. Those who are not insured particularly mentioned the premium as the main barrier and even some of those who are insured complain of not being able to renew their NHIS membership because of the premiums. Atim and others in their evaluation of mutual health insurance identified premiums as the main barrier to the growth and expansion of many community-based health insurance schemes (Atim, Grey et al. 2002). Premiums were a constraint to the Bwamanda Hospital Scheme in the Democratic Republic of Congo, to the extent that the community came together to fix premiums to the value of 2 kg of Soya beans, the main cash crop of the region (Criel, Van Dormael et al. 1998; Criel, Van der Stuyft et al. 1999). Premiums (though considered low by the scheme management) also constituted a barrier to the expansion of the community based health insurance scheme in Burkina Faso to the extent that some could not renew their membership (Dong, Kouyate et al. 2003).

As mentioned earlier, the exemption mechanisms designed to protect the poor and vulnerable from premium payments are ineffective as in the case of user fees in Ghana and other countries (Arhin-Tenkorang 2000; Bitrán and Giedion 2003). In Kenya for instance 80% of inpatients and 86% of outpatients were not aware of waivers and exemptions (Bitrán and Giedion 2003) and the few who were aware did not know the eligibility criteria. There are also reports of leakage associated with exemption to the extent that those who are often not supposed to be exempted end up getting an exemption and thus denying those who desperately need an exemption. According to Newbrander and others (2000), only one-third of all waivers and exemptions were accounted for by the poor in Kenya and two-thirds by the non-poor. The result of ineffective exemptions in the Ghana NHIS, as mentioned earlier, imply that many of the poor are not protected and as was highlighted in Chapter Six, the poor could be pushed further into poverty with direct out-of-pocket payments. Over 10% of Ghanaians are poor but the proportion of those registered or covered by the NHIS as poor is only 1% of the total number of insured members.

Based on the issues discussed above, it may be worthwhile funding the contributions of those outside the formal sector out of tax revenue. This will eliminate the problems associated with collection costs, and ineffectiveness in exemptions. Some countries (e.g. Thailand, Kyrgyzstan and Moldova) have taken this route towards universal coverage. In Moldova apart from one-third of the population that is covered by pay-roll tax through mandatory or social health insurance, the rest (informal sector) is covered by central budget transfers (tax funded) (Kutzin, Shishkin et al. forthcoming).

However, the skeptics think premium payments by all are warranted to impose a sense of responsibility on the part of contributors. There are also concerns that if health care were to be "free" for the informal sector (i.e. if their premiums were paid out of tax revenues), such people would generally not appreciate the value of health care and moral hazard would arise. This may hold for health care that is zero priced at the point of consumption (but even that can be debated as is done shortly). There is however no such thing as "free" health care. All health care has an opportunity cost.

There is a need here to separate out a number of strands in this argument around "free'' health care. One important separation or distinction to be made is between payments at the point of consumption – out of pocket payments – and pre-payments such as by way of taxes or premiums that are not strictly paid for care per se but for allowing future access to care.

Funding the involvement of people in the informal sector in the NHIS through tax revenues does not mean that the informal sector will be accessing "free" health care. Everybody, including those in the informal sector, pays for health care, even if they receive no formal income and hence do not have to pay personal income tax. Nevertheless in consuming various goods and services they will pay other taxes such as VAT and the kerosene tax which then help to fund health care. All of these taxes have opportunity costs in the sense that if they were not collected, people would have more money available for other goods and services.

Removal or reduction of user fees could result in a charge of creating moral hazard with increased 'demand' for services as a result of lower 'prices' and in the theory of moral hazard a resultant loss of welfare. This loss is assumed to arise because it is argued that

interfering with market prices, in this case lowering them, would mean not only 'excess' consumption of health care beyond the optimal market efficient level, but consumption of other goods at a level below the optimal market efficiency level for them (Bennett 1991; Mooney 2009).

The question of frivolous use of health care if it is zero priced at the point of consumption is related to this question of moral hazard. There are two issues here. First the fact that services are zero priced does not mean they have no cost associated with them for the user. There are always other user costs, such as transport costs, in accessing health care. In Ghana these can be higher for people in the rural areas than those in urban areas than even the costs of drugs and consultations. There is also a time cost in attending a facility for health care. Second, there is the question of what constitutes frivolous use and who decides what is frivolous – the potential user or the provider? It can be argued that the provider is better placed to make such a judgment but if the potential user, particularly the poor, is prevented from seeking care because of the current premium (and if not insured, being faced with user fees), the provider is not given the opportunity to judge if the problem is 'frivolous' or not. The patient does not present. Due to the key imperfection in the health care market of asymmetry of information, potential users are not in a position to determine if a health problem is trivial or not. There is empirical evidence for example (Arhin-Tenkorang 2000; Russell 2001; Russell 2004; McIntyre, Thiede et al. 2005; Chuma, Musimbi et al. 2009; Kruk, Goldmann et al. 2009) that fees result in some instances in non-trivial problems not being presented (Kutzin 2000). Earlier evidence from the Rand Health Insurance study showed that those faced with higher co-payments were as likely to reduce their consumption of effective to ineffective care (Welch, Hay et al. 1987; Wagner and Bledsoe 1990).

In essence these issues of moral hazard and the trivial nature of use in the absence of premium payment go to the heart of the economic basis of health care: is it to be demand based or needs based? The underlying tenet and the driving force of the NHIS in Ghana is that it is and should be needs based. It is also potentially about the trade-off between efficiency and equity. Thus an additional point to be made regarding moral hazard is that even if the presence of moral hazard could be argued successfully here (and above it has been suggested that it cannot), such moral hazard is about the efficient use of resources. The key consideration of the thesis on the question of the costs to the consumer however

relates to equity and not efficiency. The thesis has shown very clearly that out of pocket expenses including user fees are inequitable.

Thus the potential for problems arising from "free" care as a result of the premiums of the informal sector being paid out of taxes is according to the above analysis limited. There are others who think that introducing a co-payment would help solve the problem of moral hazard and the so-called frivolous use of health care resulting from the removal of premiums. However, I agree with other literature that argues that the introduction of co-payments is equivalent to introducing some form of user fees (Arhin-Tenkorang 2001; McIntyre, Gilson et al. 2005). Thailand has eventually removed the 30 Baht co-payment (Limwattananon, Tangcharoensathien et al. 2007). Co-payments are generally flat payments and the burden naturally falls more on the poor than the well-off. Perhaps what should be done to reduce the potential problem of moral hazard is to ensure that the gate-keeper system mentioned previously is strictly adhered too. This can successfully be done if the primary health system, and in Ghana the CHPS, is strengthened in terms of quality, including through addressing staff motivation. It has been found that providing incentives and motivation to health staff has a great potential to improve the quality of health care delivery (Walker and Gilson 2004; MOH 2005). If health care staff are well motivated, they will enforce the gate-keeper system. Enforcement of the gate-keeper system will result in the limiting health care spending levels by decongesting the higher level facilities.

In essence, concerns about potential moral hazard are not a legitimate basis for ignoring the option of funding the contributions of those outside the formal sector from tax funds. This would be the most reliable way of achieving universal coverage and is in line with what other countries are doing. Other mechanisms can be put in place, such as strong gate-keeping, to avoid potential moral hazard problems.

8.3 Other issues that have to be addressed in NHI

Irrespective of which option is pursued, there are a number of other issues identified in this study that need to be addressed if universal coverage and equitable financing are to be achieved in Ghana.

For the sustainability and growth of the NHI and its potential to provide universal coverage, there is an urgent need to increase the pre-payment pool. As more people are enrolled into the NHIS, this will put pressure on the resources of the NHIS. The NHIF then needs to grow to provide good quality health care for all. Currently there is significant donor support to the scheme but given the potential unreliability of such support (McIntyre, Gilson et al. 2005), it is strongly recommended that innovative ways are found to *grow* the pre-payment pool (NHIF) from domestic sources. There are a number of ways to do this. These include the general growth of the economy (GDP) which will result in increased tax revenue; improving the efficiency of tax revenue collection and/or perhaps increasing the earmarked tax (NHIL) for NHI. Wagstaff (2007) has recently questioned the common assumption that governments cannot increase general revenues to increase health expenditure but can make social health insurance contributions mandatory. He argues that raising additional tax revenue is feasible, and indeed has been done successfully by a number of countries. He adds that it does not seem any more difficult to collect general tax than SHI revenues. Fortunately in Ghana, the earmarked tax (NHIL) has been found to be progressive (see Chapter Five). It would thus be possible to increase progressively the NHIL to strengthen funding of exemptions. However this must be carefully done to avoid inflation and any possible disincentives on productivity. Care must also be taken that goods largely consumed by the poor continue to be exempted from the NHIL. There will thus be a need to continue to assess periodically the incidence of the NHIL to ensure that the burden is not shifted to the poor.

There is also a need to ensure sustained economic growth and development in the country. Economic growth has played a key role in the journey to universal coverage in some countries (e.g. Thailand, Korea and Germany). As has been highlighted in Chapter Five, formal sector NHI contributions (which is a payroll deduction is very progressive) but the formal sector is less than 30% of the economy and so if the economy grows and more jobs are created the number of people in the formal sector will increase and will make contributions to the NHI (Ministry of Health 2009). In other words, the formal sector will increase with the growth of the economy and since it is compulsory for formal sector workers to belong to the NHIS, it will then be easier to expand the scheme. The GDP growth rates of Ghana have shown some improvement in recent years. For instance GDP growth increased from 3.7% in 2000 to 5.5% in 2004 and again to 6.8% in 2008 (Ministry of Health 2009; Price WaterHouse Coopers 2009). There is also a need for a

better and fairer distribution of existing resources. Again Ghana has recently had some debt relief under the World Bank/IMF heavily indebted poor countries (HIPC) initiative. This however has not made much difference to job creation and increasing the formal sector of the economy. The recent discovery of oil, if managed properly, may lift the economy and create more jobs but experience from neighbouring countries like Nigeria and Cameroon shows that oil may not be a panacea to poverty and job creation. What is essential is prudent management of the resources by the national leadership. In addition, the removal of trade barriers by developed economies to allow for *fair* trade between the developed and developing countries can also generate the needed jobs and raise more households out of poverty.

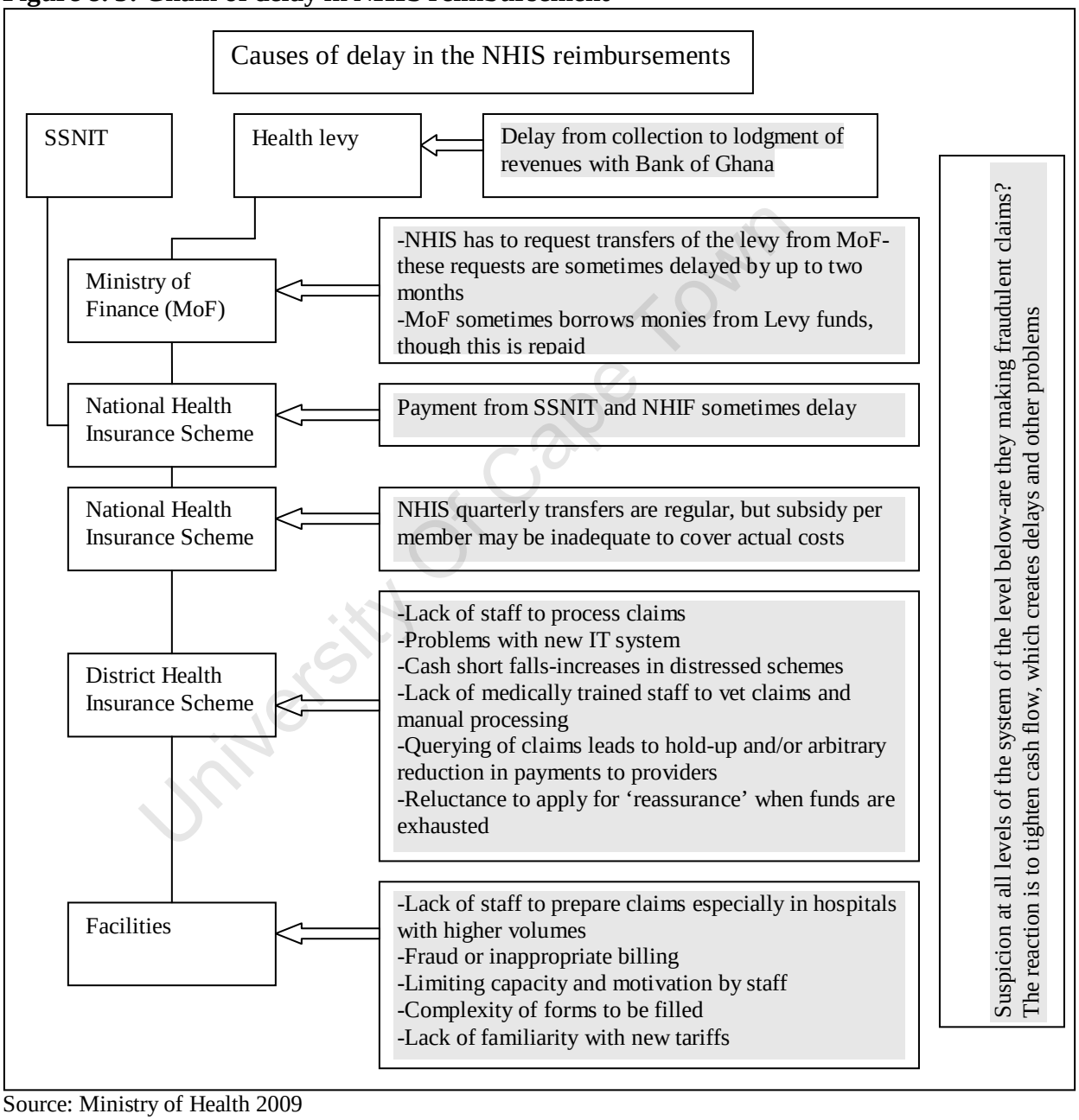
Currently, the way in which, funds flow in the NHIS is too bureaucratic and causes a lot of delays. This does not augur well for the smooth operation of the NHI. Figure 8.4 depicts the current funding flows in the Ghana health system. It can be observed that the NHIL, which is VAT of 2.5%, goes to the Ministry of Finance. The Ministry of Finance then allocates this revenue to the NHIS. The NHIS also remits funds to the DHIS through a request for the contributions of formal sector workers and subsidies for the exempt group and for a reimbursement grant to cover the expenditure incurred over and above the premiums collected from the informal sector, the contributions of formal sector workers (via SSNIT to NHIS) and the subsidies for exempt groups. These processes currently take a long time and cause undue delays (up to a year in some instances) in reimbursements reaching providers.

Another major problem that needs to be assessed urgently is that providers (see Figure 8.4), who are mainly made up of GHS facilities, the Christian Health Association of Ghana (CHAG) and other private health facilities such as clinics, pharmacies and chemical sellers, complain of not getting their claims reimbursed on time, leading to the accumulation of debts. It is reported that at the end of 2008, the total debt that the NHIS owed to providers nationwide was GH¢49 million[54](Ministry of Health 2009). The responsibility for these delays lies with both the providers and the NHIS. At the district health insurance scheme level for instance, there are complaints of lack of qualified staff to process claims and concerns that claims submitted by providers are inaccurate (see Figure 8.4). On the provider side, issues arise regarding the lack of staff to prepare claims and the complexity of the forms to be filled in (see Figure 8.4). The delays affect both the

[54] The inter bank exchange rate of the GH¢ to the US$ in 2008 was about GH¢1.2 to US$1

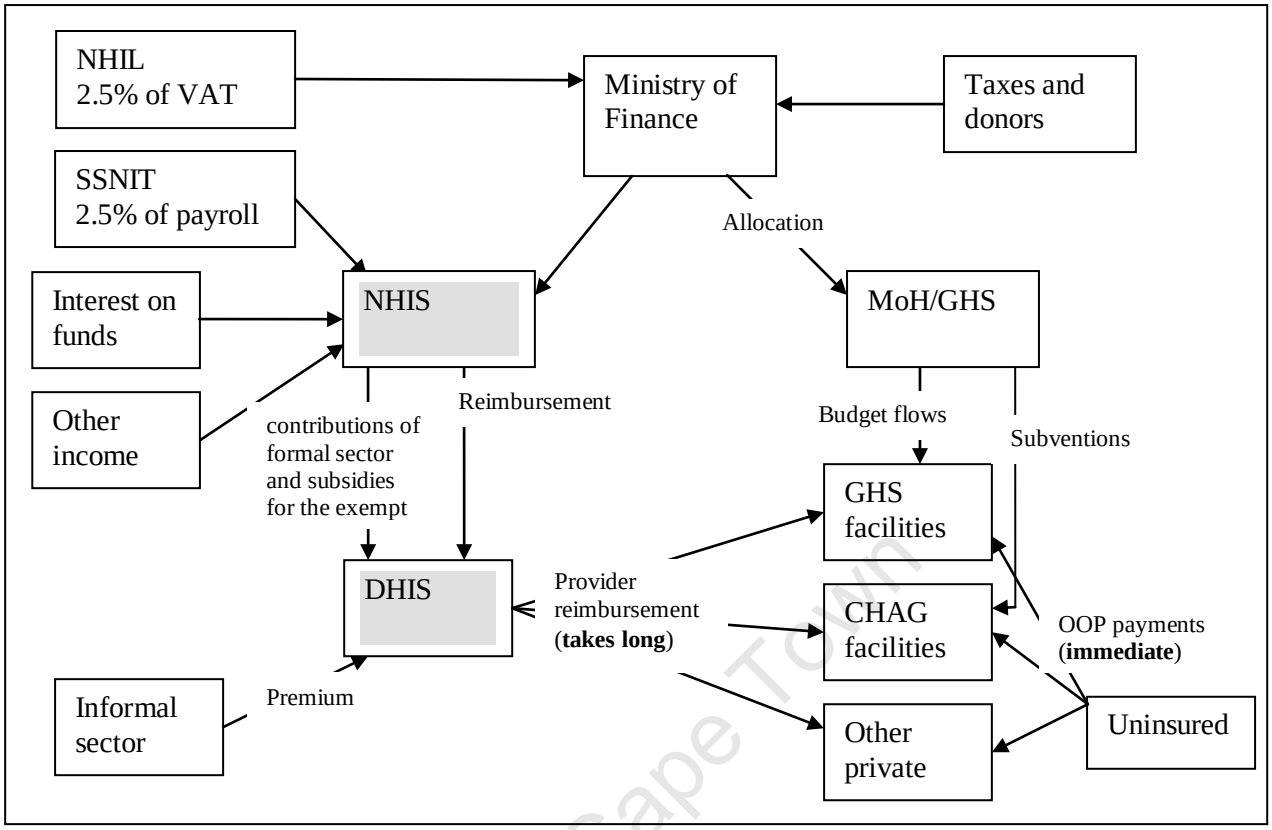
delivery and the quality of health care and this negatively affects the insured (unlike their uninsured clients who pay directly). Some providers simply stop providing health care services to the insured clients, if their claims are delayed. It is not surprising that the results of the focus group discussions revealed that the insured complain bitterly about receiving poorer quality of care compared to the uninsured.

Figure 8. 3: Chain of delay in NHIS reimbursement



Source: Ministry of Health 2009

Figure 8. 4: Cash flows of the NHIS



With regard to overall funding flows to the health facilities, there are two main funding flows: one from the MoH/GHS and the other from the DHIS. The MoH/GHS funding comes in the form of a budget (i.e. with largely historical incremental budgets) whilst the DHIS pays facilities according to the amount of services rendered to insured members. The other source of funding to facilities, which is reducing but still significant, is fees from uninsured patients (see Chapter Two). The current system of funding health facilities, particularly the public ones, can entrench resource disparities between facilities. Historical incremental budgeting results in already well resourced facilities (particularly in terms of human resources) receiving a relatively large share of budget resources on an ongoing basis. These facilities tend to be in urban areas and areas with higher socio-economic status residents, which in turn will have a disproportionate share of NHI members (formal sector and higher income informal sector workers). Hence, these facilities will also be able to generate more revenue from providing services to NHI members than facilities in rural and deprived areas. This can create considerable inequities in the resourcing of facilities.

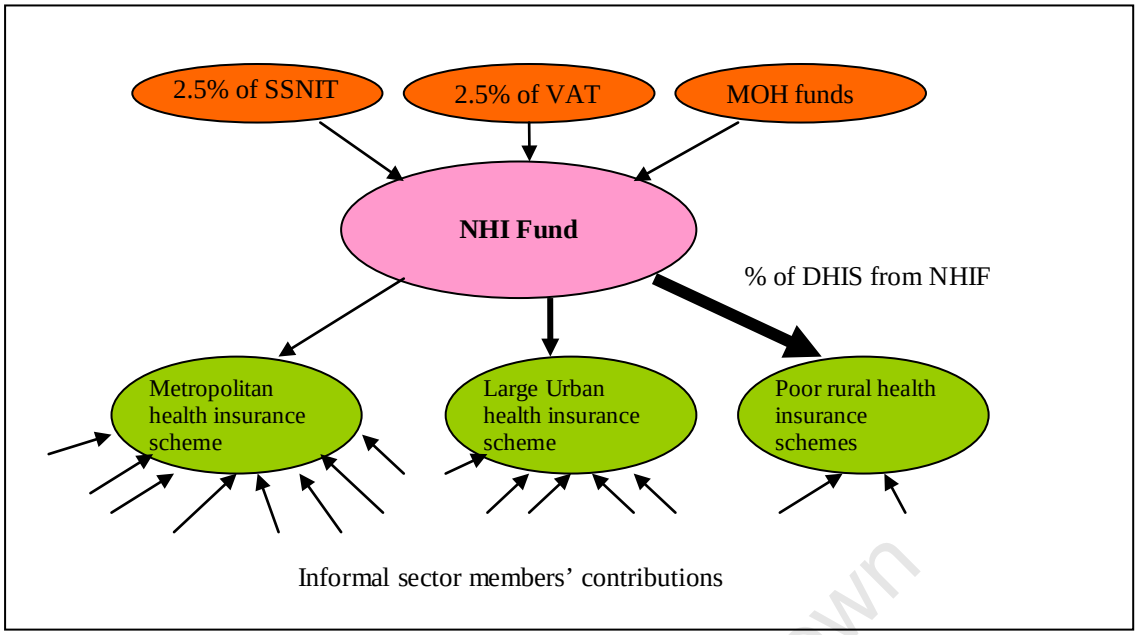
This problem can be addressed in different ways. The allocation of MOH/GHS resources can be based more directly on the relative need for health services (than on historical

budgets) and very importantly, adjusted for revenue that each health authority and facility is able to generate from serving NHI members. Alternatively, if allocations from general tax revenue were integrated with mandatory NHI contributions (e.g. if tax resources were used to fully subsidise NHI contributions for everyone outside the formal sector), there would be a single, integrated mechanism for funding health services. In order to promote equity in the Ghanaian health system, it is essential that budget allocations via the MoH/GHS take account of resource allocations via the DHIS/NHI.

A related issue of concern is the difficulty that districts face in getting subsidies from the NHIS. Currently the district health insurance schemes have to more or less lobby to get their subsidies and reimbursement grants paid to them. In other words, the district schemes have to justify why they need whatever amount they are asking for. Sometimes these requests are queried as being in some sense or other improper (such as not submitting all necessary documentation). Schemes in relatively poor districts are disadvantaged by this method of getting reimbursement since some of them do not have the necessary logistics including communication facilities to help with their reimbursement process. It is proposed that the Government revisit this method and work out how much money is required to subsidise the contributions of those in the informal sector in each district. This will enable the Government to get estimates of how many people in each district are completely unable to contribute and allocate a subsidy per person that would cover the full cost of services for them, what contribution level others in the informal sector in that district can afford and what subsidy needs to be provided (i.e. the difference between the full cost of services and what those in the district can contribute themselves). This requires the government to allocate enough general tax and donor funds to NHIF to cover all the contribution subsidies (full for the poor and partial for the non-poor) needed for the informal sector.

The NHIF should allocate all of this on the basis of the needs (i.e. based on estimates of poverty levels) in each district for these subsidies up-front rather than on the current 'reimbursement' basis, which also involves major administrative costs. If this were to be done, a relatively large proportion of funds (illustrated by the thicker arrow in Figure 8.5) for DHIS in the poor rural districts would be channelled from the NHI fund since most insured members would require partially or fully subsidised membership (Figure 8.5).

Figure 8. 5: Proposed resource allocation to District schemes



McIntyre et al. (2005)

This resource allocation process could be further strengthened to promote equity with the standard resource allocation formula which is used in many countries. Fortunately, Ghana has some experience of this as the allocation of tax and donor-pooled health funds to its regions have been guided by a formula that includes regional population size, poverty levels and under-five mortality since 2004 (Asante, Zwi et al. 2006). Needs-based application of resource allocation was earlier applied in the 1970s in countries such as England, Scotland, Wales Ireland an Portugal (McIntyre 2007). In recent times, some countries in Africa (Tanzania, Uganda and Zambia), Latin America (Chile, Columbia and Mexico) and Asia (Cambodia) are applying versions of the needs-based resource allocation formula in disbursement of their tax and donor support funds (McIntyre 2007). Needs-based resource allocation could also be applied in the case of the allocation of funds from the NHIF to the DHIS and to ensure equity, the allocation should take into consideration the population outside the formal sector, age, sex, socio-economic status and a measure of the burden of ill-health, such as under-five mortality (Asante, Zwi et al. 2006). If this is done then poorer rural DHIS will be getting more resource allocation from the NHIF as illustrated in Figure 8.5.

8.4 Summary

The chapter discusses the key challenges and the way forward to attaining financial protection and universal coverage in Ghana. From the analysis of the previous chapters, it emerged quite clearly that OOP payments, which are currently a significant source of

health care financing, are very regressive and have potentially catastrophic effects on the populace. This means the options available to Ghana to attain universal coverage are general tax and the NHI. The financing mechanisms are also inline with the WHO resolution that has asked all its member countries to move increasingly to some form of pre-payment in their health care system so as to avoid the catastrophic effect of OOP payments. Ghana has chosen a form of NHI which is largely (about 70%) funded by tax revenue. About 22% of the NHI funding is from payroll deductions whilst less than 6% is currently coming from the informal sector through premium collections. Though the NHI is mandatory, it is only the formal sector whose contributions are compulsorily deducted for NHI. The key challenge is how to bring the large informal sector (who are also expected to pay premiums) into the NHI.

To achieve financial protection and ultimately universal coverage, there will be the need either to address the challenges inherent in the existing structure of the NHI (effective exemption of the poor and implementing the graduated premium) or to fund completely the informal sector contributions from tax revenue. In considering these options, two things must be noted. First premiums from the informal sector represent only 5% of the total resources of the NHI (see Figure 8.2). Second the administrative costs of collection and of trying to identify the poor may be higher than the amount collected. This effectively means that it may be best to opt for the new government proposal of a once-off premium (i.e. full tax funding of informal sector and only expected to go to register once and make a token registration contribution). Whatever option is considered, there is an urgent need to address not only the delays in the flow of funds from the NHIS to the district health insurance schemes but also the fragmentation between the district pools of funds. The delay in reimbursing providers must also be addressed as it affects the quality of health services which is one of the main sources of dissatisfaction among the insured. There is also the need to *boost* the pre-payment pool and this can be done through promoting economic growth, improving the efficiency of the tax collection system and increasing the taxes that have been found to be progressive (Chapter Five). Finally, there is a need to address equity in the allocation of NHIS funds to districts and to ensure that there is greater co-ordination between the allocation of NHIS and the MoH/GHS funds to districts and individual facilities.

Chapter Nine: Conclusion and Recommendation

9.0 Introduction

This chapter summarises the main findings of the study in terms of the objectives set out at the beginning of the research. The chapter brings together the findings of the thesis which provide answers to the various research questions posed. In doing so it also serves to demonstrate that the research objectives have been met. The chapter also highlights the new contributions as well as the key limitations of the study. The chapter concludes with some recommendations for policy and for further research.

9.1 Have the objectives of the study been met?

9.1.1 Catastrophic and impoverishment effect of health care payments

Ghana is one of the few countries in Africa that religiously implemented user fees to the letter, to the extent that the country was able to recover the target of 15% of health care spending. Many countries could not even recover up to 5% of spending (Gilson 1998). As mentioned in earlier chapters, the impact of user fees, christened 'cash and carry' in Ghana, had a negative effect on the population (Arhin-Tenkorang 2000). It is well documented that the introduction of user fees saw substantial declines in health care use, particularly amongst the poorest (Bitrán and Giedion 2003). Carin and others quantified the number of deaths in 20 African countries that occurred as a result of users fees and other direct payments and found a staggering figure of 3 million child deaths that could have been averted over the previous 20 years had fees not been charged (Carin, Morris et al. 2005). Exemptions that were introduced to cushion the effect of user fees didn't work due to inadequate funds and lack of clarity in the exemptions process, which relates to the difficulty of identifying those (particularly the poor) to be exempted (Garshong, Ansah et al. 2002).

So debilitating was 'cash and carry' in Ghana, that a search for alternative financing was seen as critical. This led to the development and expansion of community-based health insurance schemes largely supported by missionaries and other NGOs. However, these community-based health insurance schemes, though many (159 by 2002), covered only 1% of the population (Atim, Grey et al. 2002). Ghana took the boldest step in 2003 and rolled out a mandatory health insurance scheme to cover both the formal and informal sector workers of the country. The aim of the mandatory health insurance was not only to

replace user fees and other forms of out-of-pocket payments but progress to universal coverage and thus to offer financial protection to the population. However, the key question that was asked in the study is the extent to which the population is financially protected from the current health care payments. For instance, knowing the extent to which direct out-of-pocket payments are catastrophic and impoverish households will be important evidence for policy makers and planners for assessing the extent of financial protection in the current health system and hence the degree of urgency of expanding pre-payment financing mechanisms. This information can be gathered by examining the catastrophic and impoverishing nature of direct health care payment as detailed in Chapter Six and summarised below.

Households without comprehensive health insurance or tax financing cover are exposed to the risk of large expenditures when a household member falls ill. This can be "catastrophic". However, there is no consensus in the literature regarding what proportion of household expenditure is to be defined as catastrophic (Xu, Evans et al. 2003). Thresholds of 10% and 40% for total expenditure and non-food expenditure respectively are often cited as representing the points at which the absorption of household resources by spending on health care is considered to create severe disruption to living standards and thereby merits being classed as "catastrophic" (Wagstaff and van Doorslaer 2003; Xu, Evans et al. 2003; Limwattananon, Tangcharoensathien et al. 2007; van Doorslaer, O'Donnell et al. 2007). On this basis, many Ghanaians can be said to be making catastrophic health care payments, as was demonstrated in Chapter Six. In 2005/6 over 5% of Ghanaian households spent over 10% of their total household resources on health care and over 2% spent over 40% of the their non-food consumption expenditure on out-of-pocket expenditures. These figures are high compared to countries like Malaysia, Sri-Lanka and Thailand but lower than those for Nepal, China and Indonesia where OOP payments are yet more significant. It was also indicated that poorer households are more likely than higher income groups to make catastrophic health care payments at these thresholds (10% and 40%). This at least in part reflects the weak implementation of poverty reduction strategies and more importantly the user fee exemption package.

As also detailed in Chapter Six, a widely used measure of poverty is the poverty headcount index. This simply measures the proportion of the population who are deemed to be poor and, in this particular case, those who are poor *before* making health care

payments (pre-payment) and those who became poor *after* making health care payments (post-payment). This study represents what appears to be the first time that this poverty measurement approach has been applied in Ghana. Taking the poverty headcount in both pre- and post-payment periods as being those living on $1.25 (World Bank lower poverty line) or lower per day, it is found that health care payments increase the numbers in poverty in Ghana from 17% to 18.6%. Given an estimated population in Ghana of 22 million people, this translates into about 352,000 more people being impoverished as a result of spending on health care. The findings of the thesis also show a huge difference in rural and urban poverty with the former having a greater burden of poverty. The impoverishment effect of out-of-pocket payments is however slightly higher among urban households. This suggests that rural households are either accessing low cost health care or are unable to access health care at all. With regards to the differences in the geographic belts, the poor northern areas are hardest hit by impoverishment. Thus, due to health care payments, the results of the thesis indicate that expenditures on health care in Ghana increase impoverishment.

9.1.2 The progressivity of health care payments

An important goal of the mandatory health insurance or national health insurance (NHI) is to ensure both income and risk cross-subsidization. The key question here is whether the NHI embodies the key characteristics of income cross-subsidies such that the rich pay more to subsidize the health care needs of the poor? Cross-subsidization is a key requirement if NHI is to progress to universal coverage. The NHI is largely financed by tax revenue and so to answer the question of whether the NHI embodies elements of cross-subsidization, it is important to understand the *burden* of various health care financing mechanisms in the country, particularly taxes.

A number of studies internationally have been undertaken to quantify the relative progressivity of different health care financing mechanisms. Until recently these have been limited to developed countries (Europe and USA in the “Ecuity project”) (Wagstaff, van Doorslaer et al. 1999). More recently there have been studies in Asia of the progressivity of their health care financing systems (“EQUITAP project”) (O'Donnell, van Doorslaer et al. 2008) and such studies are currently underway in some Latin American countries.

African countries face many challenges in health care financing, not least being the inadequacy of funding and the high direct out-of-pocket payments for health care. In the context of many African countries, there is a critical need for a comprehensive analysis of the progressivity of health care financing to inform debate on different systems of health care financing. This is especially the case for Ghana at a time when the country is still in the process of restructuring its health care financing in the wake of the introduction of a national health insurance system. That analysis for Ghana is a key focus of this thesis. The findings in Chapter Five show that direct taxes which comprise personal income tax and corporate tax are progressive, as depicted by positive Kakwani indices. The progressivity of personal income tax is consistent with findings elsewhere. Indeed in almost all countries examined to date, personal income tax is progressive in essence because personal income taxes are explicitly structured to be progressive. In the examination of corporate tax in Ghana in this study, two assumptions were made: first that the burden was shared equally between consumers and shareholders; and second that 100% of the burden falls on consumers. On the basis of both assumptions, corporate tax was found to be progressive but has a lower Kakwani index than does personal income tax. Taken together, this means of course that direct taxes are progressive which is consistent with the results of other published empirical studies (Limwattananon, Tangcharoensathien et al. 2005; O'Donnell, van Doorslaer et al. 2008; Yu, Whynes et al. 2008).

On the other hand, the international evidence on indirect taxes suggests that these tend to be regressive in some countries but progressive in others. They have been found to be regressive in Sweden, Denmark, Japan, Sri Lanka and South Africa (Wagstaff, van Doorslaer et al. 1999; O'Donnell, van Doorslaer et al. 2008; Ataguba and McIntyre 2009) but progressive in many low and middle income countries in Asia (e.g. Bangladesh, Thailand and China) (O'Donnell, van Doorslaer et al. 2008) . In Ghana, indirect taxes analyzed in this study include import duty, fuel levy, VAT and the NHIL. With the exception of the fuel levy, the other elements of indirect taxes were found to be progressive. Fuel is regressive because of the influence of taxes on kerosene which is largely consumed by the poor. VAT is progressive because of the wide range of exemptions on agricultural goods and other goods largely consumed by the poor. This progressivity of VAT is important in Ghanaian health care financing since the NHIL (which is a component of VAT) is the main funding source (about 70%) of the national

health insurance scheme. However the Kakwani index is less than 0.10. It is necessary to sound a warning here that if, as is likely, the economy becomes more formalized[55] and many more people are covered by VAT, VAT and NHIL might well move to be being proportional or even regressive. This possible change needs to be acknowledged but beyond that there is a need for continual monitoring of the incidence of this financing mechanism (NHIL) so that Ghana does not end up using a regressive financing mechanism to fund the NHI. Bringing all the indirect taxes together, the results of the thesis show these to be progressive as demonstrated by a positive Kakwani index. This is consistent with other low income countries like Bangladesh, Malaysia, Thailand and Tanzania.

The national health insurance contributions which are made up of formal sector payroll deductions and informal premium contributions are overall progressive. This progressivity is largely a function of the payroll deductions. However, the informal sector's premium contributions, which are the basis for the expansion of the NHI to universal coverage, were found to be very regressive. The poor are thus bearing the brunt of the NHI contributions compared to the rich. This is because everybody in the informal sector pays the same amount which in turn is the result of the failure to implement the system of graduated premiums that was part of the original design of the NHIS. This revelation from the thesis means that policy makers, government and all stakeholders of the NHIS must review the design of the NHIS and its implementation, not just the financing per se but also the other institutional arrangements such as the graduation of premiums and the policy on the operation of exemptions. As the thesis demonstrates, these are simply not working. The NHIS financing arrangements are supposed to be pro-poor. As the scheme operates currently, they are not (Witter and Garshong 2009).

Apart from taxes and the NHI, the Ghana health care system is significantly funded by direct out-of-pocket (OOP) payments. These accounted for 45% of total health care financing in 2005/2006. This form of financing has been found (with few exceptions) to be regressive. Indeed as is the case in Ghana, OOP payments have been found elsewhere to be more regressive (or at best, less progressive) than any other form of health care financing. Even in countries (such as Bangladesh, Indonesia, Philippines and Korea)

[55] Currently a lot of goods that should be covered by VAT are not covered because they are sold in local market places and other informal arrangement swhich makes it easier to evade VAT.

where OOP payments are progressive, the reason for this is that poor households simply cannot afford to pay for health care and therefore do not access health services. In other words, the seemingly 'progressive' OOP payments can be simply attributed to the fact that the poorest of the poor do not use health services when they are required to pay.

Taken together, overall health financing was found to be progressive. This finding is largely driven by the progressivity of most of the taxes involved, which make up over 50% of total health financing. It remains the case however, as the thesis has demonstrated, that the fuel levy and out-of-pocket payments are regressive thereby diminishing the level of overall progressivity in health care funding.

9.1.3 Factors influencing enrolment in the National Health Insurance Scheme

As mentioned earlier, Ghana has elected to achieve universal coverage through the expansion of the NHI. Even though the NHI is *mandatory*, in practice it is only the formal sector workers' contributions that are compulsorily deducted to the NHI. While informal sector workers are required to pay a premium, it is difficult to enforce the mandatory nature of the scheme for this group. In this respect, the key challenge is how to persuade the large informal sector to join the NHI as well as ensure that formal sector workers, some of whom belong to strong unions, continue to have an interest in the scheme and not agitate for a break away. Even though currently there is no opting out in the NHI, in contrast to Chile where formal sector workers can opt out, workers unions could agitate to break away from the NHI if they become dissatisfied with what it offers. With this in mind, it was worthwhile in this study to explore and evaluate the factors influencing participation in the NHI.

Chapter Seven thus provides an analysis of the factors affecting enrolment in the national health insurance (NHI). There it was found that the rich and those who had not faced food shortages in the preceding year were more likely to be insured. The results of the interviews, especially in the focus group discussions, revealed that lack of money and high premiums are the main barriers to people joining the NHIS. These findings are consistent with a previous study titled "Does the Ghana NHIS cover the poor?" which found over 90% of the uninsured attributed their inability to insure to high premium levels and poverty (Asante and Aikins 2008). In addition, some are calling for the inclusion of all drugs and all health conditions in the benefit package as well as the

broadening of the exemption group to cover all vulnerable groups. The perceived quality of care, including staff attitudes, was also raised in the focus groups as a concern and it is to be hoped that these issues will be given the attention needed to ensure not only the survival of the scheme but its expansion.

9.2 What are the new contributions and key limitations of the study?

9.2.1 New contributions

The study has made a number of key contributions to the health care financing literature and to financing policy discussions in Ghana.

- As mentioned earlier in this study, comprehensive analysis of health care financing in relation to equity is very limited in Africa, with none having been undertaken in Ghana, despite the fact that Africa has problems in terms of providing adequate and equitable financial protection to its population. This study represents the most extensive analysis of these issues in Africa to date.

- An analysis of the catastrophic and impoverishment effects of direct health care payment was undertaken for the first time in Ghana and has highlighted the extent to which direct out-of-pocket payments impoverish households. This is important evidence for policy makers and planners as to the lack of adequate financial protection in the current health care system and has thus provided evidence of the urgent need to financially protect the population from the effect of direct health care payments.

- As mentioned earlier, the NHI is largely financed by VAT which is frequently a regressive form of taxation. No study has been undertaken on the burden of this tax on the population in Ghana and so this study, by revealing that VAT is progressive, provides some reassurance to policy makers and planners that NHI is largely financed by a progressive financing mechanism. The study however cautioned that the progressivity of VAT needs to be monitored as it could become regressive over time, particularly if VAT is extended to goods and services largely consumed by the poor.

- Contrary to the belief that the current premiums are designed to be pro-poor and affordable (and that those who cannot pay are exempted), the study revealed for this first time in the implementation of the NHI that the premiums paid by those outside the formal sector are *very* regressive and exemptions, particularly those aimed at the poor, are weakly implemented. This finding is also relevant to other low and middle income countries planning to implement some mandatory health insurance as part of a strategy for moving to universal coverage. Also contrary to the belief by policy makers and implementers of the NHI that the premiums are affordable, the findings of the study revealed that the premiums are not affordable to many and is the *main* barrier to enrolment and even threatens renewal of membership by those who are already insured, this information should inform government plans to reform the NHI scheme in the country.

- Another key contribution of the study is the revelation that quality of care, particularly in relation to staff attitudes and waiting time, is key to the expansion of the NHI. This finding is consistent with findings elsewhere. For instance, in South Africa, improved quality of care in relation to staff attitudes is seen as a pre-requisite for the development of the NHIS (McIntyre, Goudge et al. 2009).

- The study has also provided a baseline for monitoring progress with the implementation of NHI and the extent to which NHI is offering financial protection to the population.

A methodological strength of this study was the ability to pool several primary and secondary data sets together and through triangulation and other methods, able to answer important policy relevant questions. The study was also successful in applying equity measures that are frequently used in developed countries to a data poor country like Ghana.

9.2.2 Key limitations of the study

The study is not without limitations. The main limitation of the study relates to the secondary data used in the calculation of the health financing incidence. The GLSS is a large national household survey of reported income and expenditure. This national dataset has been designed for several purposes and did not provide all the appropriate information needed to analyze the incidence of the various financing mechanisms. For instance there were no direct questions on income tax payments. The GLSS asked

whether members of each household paid income tax. The appropriate information for the purpose of this study would have been the amount of income tax paid by each member of the household. With regard to ownership of shares, a broad question was asked on whether any member of the household received dividends, gifts, and other remittances in the past year. For the purpose of this study, receipt of dividends should be separated from gifts and other remittances. To overcome the data limitations of the GLSS, extensive triangulations with a wide range of secondary data from various institutions was undertaken including the Ministry of Finance, Revenue Agency Governing Boards (RAGB), Custom Excise and Preventive Service (CEPS) and Social Security and National Insurance Trust (SSNIT). Poor data quality and sometimes general lack of certain specific data hampered detail analysis of certain issues. An extensive primary household survey (SHIELD)[56] undertaken in six districts also helped to fill gaps in the data provided the needed information to fill in data gaps. For instance the GLSS was undertaken at the time when the National health insurance had just started and therefore the GLSS did not capture comprehensive data on it.

It is also important to indicate as a limitation that the SHIELD survey was undertaken in only six of the over 140 districts in the country and even though the data was weighted, the survey may not be *fully* nationally representative. Unfortunately, due to resource constraints, it was not feasible to undertake a survey in all districts.

Another limitation of this study is the use of household consumption expenditure as the socio-economic measure given certain drawbacks of this measure. For instance households tend to under-declare what they spend on luxuries (e.g. alcohol, cigarettes) or illicit items (e.g. drugs, prostitution). The amount that a household said they spent on alcohol according to the 1972/73 household budget survey in the US was just half of the amount that companies said they sold (World Bank 2005). Another drawback is that, consumption choices made by households may be misleading (e.g. for instance if a rich household chooses to live simply, that does not mean that household is poor and if a poor person makes high payments for health through borrowing, it does not mean that household is rich). Despite these drawbacks, consumption expenditure is widely accepted as a better measure of socio-economic status than income particularly in developing countries with a large informal sector.

[56] This was weighted to approximated national estimates

One limitation of this study is that, the study is cross-sectional in that it considers financing incidence at one point in time (i.e. is a snapshot). Over time, financing incidence will change, not least of all because people may change their consumption patterns or there may be changes in employment patterns in response to health care financing policies. As I explain in the case of VAT, it will be important to monitor how incidence changes over time, particularly in response to any financing policy changes. Fortunately the GLSS survey data is collected every five years and so incidence monitor will be possible

9.3 Recommendations for policy on how to promote equitable health care financing in Ghana.

What is apparent from this thesis is that the goals set for the NHIS are not being realised to the extent intended. The evidence presented in the thesis is clear: Ghana is still far from achieving universal access; there is not adequate financial protection for those outside the formal sector; and there remains considerable inequity in health care financing.

While that is disappointing given the aspirational goals of the NHI, the thesis provides some important insights into what now needs to be done to overcome these deficiencies. The key issues are these:

- General tax revenues should be used to meet the costs of premiums for the poor.
- Government should seriously consider funding the contributions of those outside the formal sector from tax funds, given that their NHI contributions are regressive. This would be the most reliable way of achieving universal coverage and is in line with what other countries are doing.
- If Ghana is to achieve universal coverage within the existing NHIS framework, there is a need to effectively identify and exempt the poor from NHI contributions
- The current graduated premiums (if premiums are to be maintained for the informal sector) should be simplified into the rich, the not so rich and the poor.
- Quality of care deficiencies, particularly the perceived inferior quality of care provided to NHI members, must be addressed.
- To avoid a potential for moral hazard problems in the NHI, it is recommended that a strong gate-keeping system is put in place and this can be done by strengthening the primary health care system.

- The current system of funding health facilities, particularly public sector facilities, can entrench resource disparities between facilities to the detriment of poor rural facilities, and it is therefore recommended that budget allocations via the MoH/GHS to facilities take account of resource allocations via the DHIS/NHI to ensure equity and fairness.
- Currently there exist fragmented district pools of funds to the point that some district health schemes have extra funds whilst others are in deficit, and it is recommended that efforts are made to pool these funds together.
- Problems (such as lack of staff, complexity of forms, and bureaucracy in the release of funds) leading to delays in reimbursement to providers need to be urgently addressed as this has the potential of affecting the quality of services provided at the health facilities.
- Finally the government needs to embark on a national campaign to acquaint the population with these changes, especially the well-off, to help them to recognise the need for a more equitable system of health care financing which will be to the advantage of all Ghanaians.

9.4 Recommendation for future research

This dissertation has identified a number of issues that require further consideration and /or research. These are as follows:

- There is a need for regular monitoring of the incidence of taxes, particularly the earmarked tax (NHIL) which is the main funding source of the NHI. For now, it is progressive but only marginally and this could easily be threatened as the economy becomes more formalized.

- Difficulties in the implementation of some of the design features of the NHI have been highlighted, including the graduation of premiums and the exemption system. The major issue in terms of the exemption system is the identification of the poor. The thesis has suggested some ways forward on this question but there is a need to undertake a comprehensive study on how to identify the poor for exemption from both NHI contributions and user fees if not yet a member of the NHI.

- The study has indicated that there are many Ghanaians who are not financially protected from the catastrophic and impoverishment effect of direct health payments (see Chapter Six). This can be a basis for monitoring changes in the impoverishment from health care payments, which can be a clear indicator of the extent to which NHI is (or is not) providing more financial protection.

- The key challenge for the Ghana NHI highlighted in this dissertation is how to expand NHI cover in the informal sector. NHI contributions by those outside the formal sector are very regressive and there are many challenges to collecting these premiums. A study on the value of the premiums collected compared with the administrative cost of collecting them will provide empirical evidence on the net revenue from those outside the formal sector. This will contribute to consideration of the new government proposal to fund the contributions of all outside the formal sector from general tax revenue.

- This study concentrated on issues in health care financing and found inter alia that Ghana's health care financing is generally progressive. However, in order to assess overall health system equity, it is also important to assess "who are those who are benefiting from the progressive financing?" In other words: "what is the benefit incidence of health care financing in Ghana?" Fortunately, this research is already underway.

- This dissertation did not consider the redistributive effect of health care financing. This is important in determining the extent of redistribution of disposable income as a result of contributions to health care. One way of measuring this is to compare the inequality in pre-payment incomes as measured by, for instance the Gini coefficient, with inequality in post-payment incomes. It is recommended that such an analysis is undertaken.

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Start time

Appendix A: Questionnaire for SHIELD household survey

HOUSEHOLD LEVEL QUESTIONNAIRE 2008
STRATEGIES FOR HEALTH INSURANCE FOR EQUITY IN LESS DEVELOPED COUNTRIES (SHIELD)
Health Care Financing and Benefit incidence study in Ghana

\INTRODUCTION AND INFORMED CONSENT

Hello. My name is [ ]. I work for the Health Research Unit of the Ghana Health Service, and we are conducting a study about health care payment and benefits in your district. The purpose of the study is to learn how issues of health care payment and benefits affect people at the household level. The study will also be looking at the factors that affect health care payments and benefits. Critical broad questions that will be asked include who pays for health care and who benefits. As part of the questionnaire, I will be asking about all the people who reside in your household, and whether or not they have been ill in the past four weeks, and whether they have given birth or have been hospitalized in the past year. For those family members who have been ill or hospitalized or given birth, I would then like to ask some additional questions about their experience(s) receiving health care services. Issues that would be discussed with you include socio-economic and demographic characteristics, health seeking behaviour and health care payments and benefits, health insurance enrollment, household characteristics, household consumption and expenditure, and household assets. I would like to assure you that your responses will be confidential, and will only be used for the purposes of this study. You will not be penalized or lose your health insurance membership if you decide not to participate in this survey. You have the right to refuse to answer any question, and you can terminate the interview at any time. This survey is voluntary, and will take approximately 45 minutes to complete. If you have any questions or concerns about this study, you may contact the following: **Prof. John Gyapong, Bertha Garshong or James Akazili** on 021-681109

Do you agree to participate in this survey? Yes……..1 (continue), No……2 (end interview)

SECTION 1: IDENTIFICATION

H 1.1	FORM NUMBER	
H 1.2	RESPONDENT (HOUSEHOLD HEAD=1, SPOUSE= 2, OTHER ADULT=3)	1 / 2 / 3
H 1.3	SEX OF RESPONDENT	MALE….1 / FEMALE……..2
H 1.4	HOUSEHOLD LOCATION RURAL/URBAN	RURAL...1 / URBAN……..….2
H 1.5	NUMBER OF HOUSEHOLDS IN THE HOUSE	
H 1.6	HOUSE ADDRESS/NUMBER	
H 1.7	NAME OF COMMUNITY/VILLAGE/TOWN	
H 1.8	REGION	UPPER WEST……1 NORTHERN…….. 2 BRONG AHAFO……3 ASHANTI……4 GREATER ACCRA……5
H 1.9	DISTRICT	LAWRA……..1 WEST GONJA……2 BEREKUM……3 ATWIMA NWABIAGYA……....4 KPESHIE……....5 DANGME WEST……...6
H 1.10	DATE OF INTERVIEW (DD/MM/YY)	

H 1.11	ENUMERATOR'S NAME/ INITIALS		
H 1.12	RESULT OF INTERVIEW, COMPLETE		1
	OTHER(SPECIFY)_____		2
H 1.13	EDITED BY SUPERVISOR (NAME) NAME_____DATE _____/_____/_____		
H 1.14	Is this household insured (**either spouse has a valid DHIS card**)	Yes…..1	No……..2

SECTION 2: HOUSEHOLD ROSTER

I would like to ask you about all the people who live in this household (i.e. those who share meals and living arrangements in this household), starting from the head of household (the people I am asking about are those currently living here or have been absent for less than 3 months**) (Table 1)**

Line No.	**Usual Residents**	**Relationship to Head of Household**	**Age**	**Sex**	**Marital status**	**Highest level of education completed**	**Employment Status**	**Health Insurance Membership status**	**Recent use of a health service other than inpatient and delivery (screening for module 1)**	**Hospitalization (screening for mod.2)**	**Currently pregnant (Screening for mod.3)**	**Recent Birth (Screening for module 3)**
	First Name	HH head…..….1 Spouse…….2 Child……3 Grandchild…...4 Other relative…5 Domestic wker..6 Friend……7 In-law..…….8 Other……...….96	How old is this person in completed years?	Male……1 Female…….2	Married…….1 Never married……..2 Divorced……3 Windowed….4 Separated…..5 Living together……6 Child…….7 Other……...96	None….....1 Child……2 Pre-primary...3 Primary.....4 Middle/JSS…5 Tech/voc…...6 Secondary…7 Tertiary……8	Employed (Full time)……..1 Self employed...2 Casual……....3 Unemployed…..4 Pensioner……...5 Student/learner..6 Child ……7 Apprentice……8 Other…….. 96	Registered for DHIS……1 Other HIS….2 Both DHIS & other HIS…..3 Former member DHI.4 Never member.....5	Has anyone in this household used any health service in the past month? Yes……..1 No……2	Has [name] been hospitalized in the past 12 months? Yes….1 No.....2	Yes……..1 No…….....2 NA……...9 **(only women between 12 to 55 years old)**	Has [woman] given birth in the past 12 months? Yes...……..01 No……...02 NA……..99 **(only women between 12 to 55 years old)**
H2.1	**H2.2**	**H2.3**	**H2.4**	**H2.5**	**H 2.6**	**H2.7**	**H2.8**	**H2.9**	**H2.10**	**H2.11**	**H2.12**	**H2.13**
1.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
2.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
3.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
4.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
5.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐

Line No.	Usual Residents	Relationship to Head of Household	Age	Sex	Marital status	Highest level of education completed	Employment Status	Health Insurance Membership status	Recent use of a health service other than inpatient and delivery (screening for module 1)	Hospitalization (screening for mod.2)	Currently pregnant (Screening for mod.3)	Recent Birth (Screening for module 3)
	First Name	HH head…..….1 Spouse…….2 Child……3 Grandchild…...4 Other relative…5 Domestic wker..6 Friend……7 In-law..…….8 Other……...…96	How old is this person in completed years?	Male……1 Female…….2	Married…….1 Never married……..2 Divorced……3 Windowed….4 Separated…..5 Living together……6 Child…….7 Other……...96	None….....1 Child……2 Pre-primary...3 Primary.....4 Middle/JSS…5 Tech/voc…...6 Secondary…7 Tertiary……8	Employed (Full time)……..1 Self employed...2 Casual……....3 Unemployed…..4 Pensioner……...5 Student/learner..6 Child ……7 Apprentice……8 Other…….. 96	Registered for DHIS……1 Other HIS….2 Both DHIS & other HIS…..3 Former member DHI.4 Never member.....5	Has anyone in this household used any health service in the past month? Yes……..1 No……2	Has [name] been hospitalized in the past 12 months? Yes….1 No.....2	Yes……..1 No……...2 NA……...9 **(only women between 12 to 55 years old)**	Has [woman] given birth in the past 12 months? Yes...……..01 No……...02 NA……..99 **(only women between 12 to 55 years old)**
6.												
7.												
8.												
9.												
10.												
11.												
12.												

Line No.	Usual Residents	Relationship to Head of Household	Age	Sex	Marital status	Highest level of education completed	Employment Status	Health Insurance Membership status	Recent use of a health service other than inpatient and delivery (screening for module 1)	Hospitalization (screening for mod.2)	Currently pregnant (Screening for mod.3)	Recent Birth (Screening for module 3)
	First Name	HH head…..….1 Spouse…….2 Child……3 Grandchild…...4 Other relative…5 Domestic wker..6 Friend……7 In-law..…….8 Other……...…96	How old is this person in completed years?	Male……1 Female…….2	Married…….1 Never married……..2 Divorced……3 Windowed….4 Separated…..5 Living together……6 Child…….7 Other……...96	None…….....1 Child……2 Pre-primary...3 Primary.....4 Middle/JSS…5 Tech/voc…...6 Secondary…7 Tertiary……8	Employed (Full time)……..1 Self employed...2 Casual……....3 Unemployed…..4 Pensioner……...5 Student/learner..6 Child ……7 Apprentice……8 Other…….. 96	Registered for DHIS……1 Other HIS….2 Both DHIS & other HIS…..3 Former member DHI.4 Never member.....5	Has anyone in this household used any health service in the past month? Yes……..1 No……2	Has [name] been hospitalized in the past 12 months? Yes….1 No.....2	Yes……..1 No……...2 NA……...9 **(only women between 12 to 55 years old)**	Has [woman] given birth in the past 12 months? Yes...……..01 No……...02 NA……..99 **(only women between 12 to 55 years old)**
13.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
14.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐
15.		☐	☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐☐

H2.14 Total number of household members: ☐☐

H 2.15 Total number of household members in DHIS: ☐☐
(count all for whom H2.9 =1,3 or 4)

Table 2

No	First name	Chronic Illness	Type of chronic illness	Taking drugs for chronic illness	Reasons for not taking drugs for chronic illness	General Health Status	Recent Illness	Type of illness	If ill, did ***name*** seek care?	If ***name*** did not seek care, why did ***name*** not seek care?
	Name (**the same order as above**)	Has any household member been taking a drug regularly for the past **6 months** or more prescribed by a doctor/nurse for blood pressure or any long term illness? Yes…….....1 No……..2 Don't know…...88 (**If 2 or 88 skip to H2.20**)	What type of chronic illness does this household member suffer from?	Is household member currently on drugs, for the chronic illness? Yes……1 No…….2 DK……...88 NA……...99 (**If 1 or 88 skip to H2.20**)	Why is household member not on drugs for the chronic illness?	What is (NAME) health in general? Very good...1 Good……2 Average…...3 Poor…….4	Has (**name**) been ill or injured in the past month? Yes…….1 No…….....2 **(If 2 skip to H 3.1)**	What illness?	If ill, did ***name*** seek care? Yes……..1 No……...2 NA……..9 **(If yes skip to H 3.1)**	
		H2.16	**H 2.17**	**H2.18**	**H2.19**	**H2.20**	**H2.21**	**H2.22**	**H2.23**	**H2.24**
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

No	First name	Chronic Illness	Type of chronic illness	Taking drugs for chronic illness	Reasons for not taking drugs for chronic illness	General Health Status	Recent Illness	Type of illness	If ill, did ***name*** seek care?	If ***name*** did not seek care, why did ***name*** not seek care?
	Name (**the same order as above**)	Has any household member been taking a drug regularly for the past **6 months** or more prescribed by a doctor/nurse for blood pressure or any long term illness? Yes…….....1 No……..2 Don't know…...88 (**If 2 or 88 skip to H2.20**)	What type of chronic illness does this household member suffer from?	Is household member currently on drugs, for the chronic illness? Yes……1 No…….2 DK……...88 NA……...99 (**If 1 or 88 skip to H2.20**)	Why is household member not on drugs for the chronic illness?	What is (NAME) health in general? Very good...1 Good……2 Average…...3 Poor…….4	Has (**name**) been ill or injured in the past month? Yes……1 No…..….....2 **(If 2 skip to H 3.1)**	What illness?	If ill, did ***name*** seek care? Yes……..1 No……...2 NA……..9 **(If yes skip to H 3.1)**	
13										
14										
15										

Codes for H2.17	**Codes for H2.19**	**Codes for Illness (H2.22)**	**Codes for not seeking care (H2.24)**
Diabetes…….1 Hypertension ……2 Arthritis…….3 Gastric ulcer……..4 Gout…….....5 Schizophrenia .....6 Asthma ……7 Sinusitis…….….8 Other (specify).....96	Drugs expensive……...1 Don't know that drugs are supposed to be taken……....2 Drugs not available in community…3 No money to buy……....4 No need for drugs……5 Feel ok……...6 Other (specify)_____96 DK……88 NA……99	Malaria……1 ARI…….2 Diarrhea……..3 Skin disease……4 Fracture……...5 Aches and pains…..6 Other (specify)……96 NA……..99	Thought it was not serious……....1 Could not afford transport costs…….……...2 Could not afford health care costs…….3 Health facility/provider too far……..4 Could not get time off work……..5 Could not afford to take time off work……6 Queues too long at the health facility……...7 Care available unlikely to make me get better…..8 Will not be treated respectfully…….……9 Facility does not offer the services needed……10 Facility can't solve my particular health problem..11 Other (Specify)……..…….……96 NA……99

SECTION 3: DISTRICT MUTUAL HEALTH INSURANCE MEMBERSHIP

Please copy the line number (H2.1) and name (H2.2) of each person in the Household Roster who is registered with the DHIS. That is, everyone for whom H2.9 = 1, 3 or 4.

The total number of people recorded in this table should be equal to H2.15.

Line No.	Name of Person	When was the last time this person was registered for the DHIS?	Was s/he exempt from paying DHIS premium for this registration?	How much did you pay for this person's DHIS premium?	How much did you pay for this person's DHIS registration fee?	Total amount paid for DHIS membership for last registration?	Did s/he receive the DHIS card for this last registration?	When did s/he receive this DHIS card?
Enumerator, copy (from Household Roster) the line number and name only for the members of the DHIS (H 2.9=1, 3 or 4)		**Record Month and Year** Don't know…………..88 NA…………………...99	YES………………..1 NO…………………2 Don't know………88 NA……………….99	**Record amount in old Cedis** Don't know………888 NA……………….999	**Record amount in old Cedis** Don't know………..888 NA………………...999	**Record amount in old Cedis.** Don't know……..888 NA………………999	YES……………...1 NO……………. 2 Don't know…….88 NA……………..99	**Record Month and Year** Don't know………….88 N/A(Did not receive card)……………..….99
H3.1	H3.2	H3.3	H3.4	H3.5	H3.6	H3.7	H3.8	H3.9
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐
		Month ☐☐ Year ☐☐	☐	…………………	…………………	…………………	☐	Month ☐☐ Year ☐☐

Line No.	Name of Person	When was the last time this person was registered for the DHIS?	Was s/he exempt from paying DHIS premium for this registration?	How much did you pay for this person's DHIS premium?	How much did you pay for this person's DHIS registration fee?	Total amount paid for DHIS membership for last registration?	Did s/he receive the DHIS card for this last registration?	When did s/he receive this DHIS card?
Enumerator, copy (from Household Roster) the line number and name only for the members of the DHIS (H 2.8=1, 3 or 4)		**Record Month and Year** Don't know…………..88 NA…………………...99	YES………………..1 NO…………………2 Don't know………88 NA………………99	**Record amount in old Cedis** Don't know………888 NA………………999	**Record amount in old Cedis** Don't know………..888 NA………………...999	**Record amount in old Cedis.** Don't know……..888 NA……………...999	YES……………...1 NO……………. 2 Don't know…….88 NA……………..99	**Record Month and Year** Don't know…………88 N/A (Did not receive card)…...…………….99
		Month Year		…………………	…………………	…………………		Month Year
		Month Year		…………………	…………………	…………………		Month Year
		Month Year		…………………	…………………	…………………		Month Year
		Month Year		…………………	…………………	…………………		Month Year
		Month Year		…………………	…………………	…………………		Month Year
H3.10 Total Paid for All (in old Cedis)				…………………	…………………	…………………		

SECTION 4: NATIONAL HEALTH INSURANCE

(Now I would like to ask you more issues concerning the national health insurance scheme)

H4.1	Have you heard of the DHIS? **Ask only those who have never been members of DHIS; Circle 99 for former and current members**	Yes……...1 No……..……2 NA……..99	**If 2 go to H4.4**
H4.2	From which **main** source did you hear about DHIS? **(ask if 4.1 is 1…Yes and 99….NA)**	At the health facility/provider..…….....1 Over the radio……..2 On TV……..3 Health Insurance agent……4 From a relative…….5 From a friend……...6 From an information van……..7 Other (Specify)…….96 DK……88 NA……99	
H4.3	What do you know about DHIS?	Prepayment for health care……1 Paying tax to government……..2 Free health care delivery by gov't…….....3 Other (specify)_____96 NA…….99	
H4.4	What criteria do you think should be used to identify a poor person? (**CIRCLE ALL MENTIONED**)	The disabled……..……..……..1 Old/aged people……..2 Unemployed/cannot earn a living……...3 Those with no say/voice ……4 Those who cannot provide own need…….5 One with many children……..6 Homeless……..7 Person who cannot get food ……..……..8 Person in tattered clothing……..……...…9 Person without farm or animals……..…..10 Other (specify)_____96	
Households that are currently insured with the DHIS			
H4.5	Why did you or members of your household join the scheme?	Financial protection against unforeseen illness…….…....1 I believe it is a better alternative to the cash and carry …….....2 A relative/friend asked me to join……3 Other (Specify)_____96 NA…….……...99	
H4.6	Why are some household members enrolled in the DHIS and others not? **ASK, IF SOME HOUSE HOLD MEMBERS ARE NOT PART OF THE DHIS IN H2.9**	Insured only those exempt from premiums…1 Coverage elsewhere (e.g. employer)……..2 Can only afford to insure some members…..3 Have insured sick/ill members only……..4 Financial difficulties…….……..5 Card not ready……...6 Other (specify)_____96 Don't Know……..88 NA…….……99	

H4.7	As an insured household, what are the benefits that you expect from the scheme? **MULTIPLE RESPONSES ALLOWED**	Early attendance at health facilities……..…1 Prompt treatment and services……..2 Availability of drugs……..3 Good attitude of health staff……..4 Free health care in times of need……...5 Other (Specify)_____ 96 DK …….....88 NA …….....99	
H4.8	Do you know whether you need to renew the DHIS membership for your household members?	Yes, need to renew……1 Don't need to renew/only need to register once……...2 DK……88 NA……99	**If 2 or 88 go to H4.11**
H4.9	Do you know how often you need to renew membership with the DHIS?	Yes……1 No……2 DK……88 NA……...99	**If 2 or 88 go to H4.11**
H4.10	How often do you need to renew DHIS membership?	Every year……1 Other (Specify)_____96 DK……88 NA……..99	**Ask if 4.9 is Yes=1**
H4.11	How do you **find the registration fee**?	High ……..…….…..…1 Moderate/Affordable……...……2 Low……..……...3 DK……..……..……...88 NA……..…99	
H4.12	How do you find the premium level? **(Ask all members and find from formal workers how they find the 2.5% deduction)**	High ……..……...1 Moderate……..……2 Low……..…….....3 DK……88 NA……..…….....99	
H4.13	What would you like to be done about the current premium levels?	The current levels should be maintained…..1 It should be revised upwards……..……..2 It should be revised downwards……3 Other (specify)_____96 DK……88 NA……99	
H4.14	How do you find the timing of premium collection and registration? **(ask all members and find out from formal sector workers their monthly deductions)**	Appropriate ……1 Inappropriate ……...2 NA……..……..99	**If 1 go to H4.16**
H4.15	When should it be? **(ask all members and find from formal sector workers the monthly deductions)**	First quarter of the year……..1 Second quarter of the year…….…....2 Third quarter of the year…….……3 Last quarter of the year…….....4 Throughout the year…….…....5 Yearly……6 Other (specify)_____ 96 NA……..…….99	

H4.16	From what source/s of money did you pay the registration fees and premiums? **MULTIPLE RESPONSES ALLOWED**	SALARY ……1 SOLD AGRICULTURAL PRODUCE …….2 SOLD ASSETS (HOUSEHOLD TOOLS)…….3 TOOK MONEY FROM SAVINGS (BANK) …4 TOOK MONEY FROM SUSU COLLECTOR.5 BORROWED FROM FRIEND/RELATIVE…6 BORROWED FROM MONEY LENDER…... 7 RECEIVED A GIFT ……....8 OTHER (SPECIFY)_____96 DK…….88 NA……..99	
H4.17	Have you or any member of your household **used your ID cards to seek health care** in a hospital, health centre or clinic?	Yes…….....1 No……..……..2 DK……..…88 NA……..…99	**If 2 skip to H 4.21**
H4.18	Why did you or any member of your household **seek health care** after joining the scheme?	Was genuinely ill……1 Just testing the scheme……..…2 Once paid I had to go……....3 Other (specify)_____96 NA…….....99	
H4.19	Were you or other members of the household **satisfied** with the services provided at the health facility?	Yes…….....1 No……..……..2 NA…….99	**If 1 skip to H4.21**
H4.20	Why were you or any member of your household **not satisfied** with the services at the health facility? **(MULTIPLE RESPONSES)**	Did not get drugs in the facility……1 Refuse drugs because scheme owes facility..2 Bad attitude of the health staff……...3 Long waiting period…….....4 Other (specify)_____96 NA…….....99	
H4.21	For **how many years** have you been a member of the scheme? **FOR THE RESPONDENT**	Less than one year……1 One year……..……2 Two years……..….....3 Three years……..……....4 Four years…….5 Five years……..6 More than five years……..……..…...7 NA…….....99	
H4.22	Do you know the benefits you and your household are entitled to as members of the DHIS?	YES……...1 NO……2 DON'T KNOW…….……88 NA…….99	**If 2 or 88 skip to H4.24**
H4.23	What are the benefits that you and your household are entitled to?	FREE HEALTH CARE FOR ALL ILLNESSES…..…..1 FREE HEALTH CARE FOR SELECTED ILLNESSES……..2 OTHER (SPECIFY)_____96 NA……..…..99	
H4.24	Has joining the District Health Insurance Scheme been beneficial to you?	Yes..... 1 No ..... 2 NA……...99	**If 2 skip to H4.26**

H4.25	What has been the benefit(s)? **MULTIPLE RESPONSES ALLOWED**	Saved money from paying hospital bills…...1 Did not need to borrow to pay for hospital bills…….2 Was not afraid using health facilities because of cost…….3 Can now use health services to prevent illness becoming severe…….4 Other (specify)_____96 NA…….....99	**If ANY skip to H 4.27**
H4.26	Why has joining the DHIS not been beneficial to you?	Does not cover everything…….1 Never use the health service after joining….2 My choice of health facility excluded……...5 Health facility too far……4 Other (specify)_____96 NA…….99	
H4.27	Do you know about the exemption package under the DHIS	Yes…….....1 No……..……..2 NA…….....99	**If 2 go to H4.31**
H4.28	What is your perception about the exemption package?	Adequate……1 Inadequate…..…….....2 Other (specify)_____96 NA…….99	
H4.29	What would you like to be done about the exemptions package?	Should be maintained…….…..1 Should be enlarged……..2 Should be reduced……...3 Other (specify)_____96 DK……..88 NA……..99	
H4. 30	Who in your opinion should be exempted under the health insurance scheme? **MULTIPLE RESPONSES ALLOWED**	The poor in general…….1 Widowed...…….....2 Aged ……..…….....3 Mental patients…...…….....4 The disabled……..……...….....5 Pregnant women…..…….....6 Children (U5)……..……..…..7 From 5 to 17 years old……8 Other (specify)_____ 96 NA…….....99	
H4.31	Will you continue to be a member of the District Health Insurance Scheme?	Yes…….....1 No……..……...2 NA……..…….99	**If 2 go to H4.33**
H4.32	Why will you like to continue to be member of the DHIS?	Financial protection against unforeseen illness…….....1 I believe it is a better alternative to the cash and carry …….....2 Other (specify)……..3 NA……99	**If 1, 2 or 3 skip to H4.42**

H4.33	Why would you not continue to be a member of the District Health Insurance Scheme? I don't see why I should continue Has not been sick Amount (premium) being paid is high Not getting the services I needed I still buy drugs after the service Other (Specify)	Yes No DK Don't see why I should Continue……1 2 88 Not been sick……..1 2 88 Premium too high……1 2 88 Not getting services I need…… 1 2 88 Still buys drugs after Service…….1 2 88 Other (Specify)_____96 NA……99	
Former members of the NHIS			
H4.34	Why have you not renewed your membership? No money No confidence in scheme again… Not satisfied with provider(s) Premium too expensive Registration fee expensive Inappropriate timing of premium Benefit package inadequate Did not use services previous year Not available at time of registration Difficulty in accessing services Waiting period too long Poor quality of care Other (specify)	Yes No DK No money…… 1 2 88 No confidence in scheme again… .1 2 88 Not satisfied with provider(s)...…..1 2 88 Premium too expensive……..1 2 88 Registration fee expensive...……...1 2 88 Inappropriate timing of premium…1 2 88 Benefit package inadequate……..…1 2 88 Did not use services previous year...1 2 88 Not available at time of registration.1 2 88 Difficulty in accessing services… 1 2 88 Waiting period too long……... 1 2 88 Poor quality of care……..…… 1 2 88 Other (specify)_____96 NA…… ……..99	
H4.35	What would make you rejoin the health insurance scheme?	Availability of drugs……..1 Improved attitude of health staff...…….2 Improving the benefit package……...3 Reducing premium……....4 If health facility is closer …….……...5 Other (specify)_____96 NA…….....99	
H4.36	What is the **main** reason **no one** from your household is enrolled in the district health insurance scheme?	Not aware of district HI scheme……..1 Just recently learned of HI scheme…….2 Premiums is unaffordable……...3 Benefits/services are not adequate……..4 Not confident in scheme…….5 Don't trust provider……6 Waiting period too long……..7 Registration point not accessible……....8 Covered elsewhere(e.g. employer)…….9 No perceived need for insurance……...10 Prefer to go to private provider/not participating in DHIS……..11 Card just expired…….12 Other (specify)_____96 DK……88 NA……...99	

H4.37	Why are some household members enrolled in the DHIS and others not? **ASK, IF SOME HOUSE HOLD MEMBERS ARE PART OF THE DHIS**	Insured only those exempt from premiums…1 Coverage elsewhere (e.g. employer)……..2 Can only afford to insure some members…..3 Have insured sick/ill members only……..4 Financial difficulties……..5 Other (specify)_____96 DK……88 NA……99	
H4.38	Are there **other reasons** why no one from your household is enrolled? **MULTIPLE RESPONSES ALLOWED**	Not aware of district HI scheme……..1 Just recently learned of HI scheme…….2 Premiums is unaffordable……...3 Benefits/services are not adequate……..4 Not confident in scheme……5 Don't trust provider……6 Waiting period too long……..7 Registration point not accessible……....8 Covered elsewhere(e.g. employer)…….9 No perceived need for insurance……...10 Prefer to go to private provider/not participating in NHIS……..11 Don't understand the scheme…….12 Other (specify)_____96 DK……88 NA……...99	
Never been members (not insured) of the NHIS			
H4.39	Why are you or members of your household not insured (**never been insured**) with the scheme? (**MAIN REASON**)	Not heard about NHIS…….....1 No Scheme in the area…..…….....2 Timing of premium collections inappropriate……...3 Poor quality of care…….4 Premiums unaffordable……...5 Inadequate benefit package…..……..…...6 Waiting period too long……..…….……7 Don't trust providers…….....8 No confidence in scheme…….……9 No money…….....10 Prefer out of pocket payment……...11 Registration point not accessible…….12 Covered by a private health insurance…….13 Other(specify)_____96 NA…….……..99	
H4.40	Why are some household members enrolled in the DHIS and others not? **ASK IF SOME HOUSEHOLD MEMBERS ARE PART OF THE DHIS**	Insured only those exempt from premiums…1 Coverage elsewhere (e.g. employer)……..2 Can only afford to insure some members…..3 Have insured sick/ill members only……..4 Financial difficulties……..5 Other (specify)_____96 DK……88 NA……99	
H4.41	What would make you join the health insurance	Availability of drugs……1	

	scheme? (**Main reason**)	Improved attitude of health staff...……..2 Improving the benefit package………….3 Reducing premium……………….........4 If health facility is closer ……….…….…5 Active purchasing of services by insurers…….……………………….……...6 Attitude of DHIS staffs…………………..7 Other (specify)____________________96 NA……………………………………..99	
FOR ALL RESPONDENTS (INSURED AND UNINSURED MEMBERS)			
H4.42	What **aspects** of good quality care at **public clinics or health centres (HC)** would give you trust and confidence in the service? I will read out a list; please can you tell me which is most important to you, which is the second most important and so on. **WRITE 1 FOR THE MOST IMPORTANT, 2 FOR THE NEXT MOST IMPORTANT ETC**	If I knew that nurses at clinics or HC are properly trained to treat my illness	
		If I was sure that I would be referred to see a doctor if the clinic or HC nurse could not treat my illness	
		If I only had to wait ½ hour before being treated at the clinic or HC	
		If I could see the same nurse at the clinic or HC every time I go there	
		If the staff at the clinic or HC are kind and understanding	
		If the clinic or HC always had the drugs that I needed	
H4.43	What **aspects** of good quality care at **public hospitals** would give you trust and confidence in the service? I will read out a list; please can you tell me which is most important to you, which is the second most important and so on. **WRITE 1 FOR THE MOST IMPORTANT, 2 FOR THE NEXT MOST IMPORTANT ETC**	If the hospital was clean	
		If I could make an appointment to see a doctor at the hospital at a specific time	
		If I was sure that I would be listened to and understood by doctors and nurses and that I would understand what they tell me about my condition and treatment	
		If I was sure that hospital staff would keep my health problems confidential	
		If transport was provided to and from a hospital if I was referred there	
H4.44	What **other aspects** of good quality care at **public hospitals** would give you trust and confidence in the service? I will read out a list; please can you tell me which is most important to you, which is the second most important and so on. **WRITE 1 FOR THE MOST IMPORTANT, 2 FOR THE NEXT MOST IMPORTANT ETC**	If the staff at the hospital are kind and understanding	
		If I only had to wait one hour before being treated at the hospital	
		If I was able to see a nurse or doctor and discuss my health problems in private	
		If the hospital always had the drugs that I needed	
		If I could lay a complaint about the service I received and knew that it would be acted on	

ATTITUDES TOWARDS THE NATIONAL HEALTH INSURANCE SCHEME

	Statement	Strongly agree	Agree	Disagree	Strongly disagree	Don't Know
H4.45	Insured members are given poor quality drugs	1	2	3	4	88
H4.46	Insured are not treated well as those who are not insured	1	2	3	4	88
H4.47	Too much time is spent at the public health facility therefore it is better to visit private health facilities.	1	2	3	4	88
H4.48	It is not useful to insure if you don't fall sick often	1	2	3	4	88
H4.49	Only those who fall sick often should pay to get insured with the NHIS.	1	2	3	4	88
H4.50	It's good to pay to become an NHIS member even if I don't fall sick.	1	2	3	4	88
H4.51	The benefit package is not broad enough.	1	2	3	4	88
H4.52	It is good to renew my membership by paying every year even if I don't use the facility within the insurance year.	1	2	3	4	88
H4.53	I think those who are uninsured get better care at the health facility.	1	2	3	4	88
H4.54	I think members of the scheme should be free to go to which ever facility they choose to go to.	1	2	3	4	88
H4.55	Staff attitude towards insured clients is bad.	1	2	3	4	88
H4.56	Insured clients spend too much time in the health facility compared to the uninsured.	1	2	3	4	88
H4.57	If I or a family member were to become ill and had to go to the hospital we would be able to afford the bill of the doctor, tests and medicines prescribed.	1	2	3	4	88
H4.58	I would agree to pay a small amount of money each year for free medical care when I need it even if I'm not sick now.	1	2	3	4	88
H4.59	The District Health Insurance Schemes act in the best interest of their members.	1	2	3	4	88
H4.60	People should get equal treatment whether you are an insured member or not	1	2	3	4	88

H4.61	**<u>I will like to ask you about your views on how much different people should pay towards health care</u>** The DHIS is in place to provide full cost of the day to day health care needs of the people. Payments to enrol as a member are in various categories. On this card, there are three classes of people and each has a different income. Which of these options do you think best indicates what you think each person should contribute towards the health insurance scheme? (**SHOW CARD A and write option number in the box)**	

SECTION 5
SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT AND HOUSEHOLD

(*Either household head or an adult member of household if household head is absent*)

No	Questions	Coding category	Skip
H5.1	What is your ethnic background?	Dagare……1 Wala……2 Akan……3 Ga……4 Dangme……5 Dagomba……6 Gonja……7 Ewes……8 Mamprusis……9 Other(specify)_____96	
H5.2	What is your religion?	Traditional……1 Christian……2 Muslim……3 Other (specify)_____96	
H5.3	What is your **main** occupation?	Subsistence farmer……1 Large scale farmer……2 Trader……3 Government worker……4 Private formal worker……5 At school……6 Artisan……7 None……8 Other (specify)_____96	
H5.4	Is the house you are staying in your own, family house or rented?	Own……1 Family house……2 Rented……3 Other (specify)_____96	
H5.5	How many rooms, including kitchens does your home have?	☐☐	
H5.6	How many sleeping rooms are in your household?	☐☐	
H5.7	Does this household have a modern design? (i.e. zinc/aluminum roofing excluding animal pond) (**observe**)	Yes……1 No……2	
H5.8	What is the **main** material for the wall? **(observe)**	Concrete……1 Mud……2 Bricks……3	
H5.9	What is the **main** roofing material **(excluding animal compounds)**	Zinc/Aluminium……1 Concrete……2 Asbestos……3 Thatch……4 Concrete tiles……5 Other (specify)_____96	
H5.10	Does the household have electricity? **(Ask and observe)**	Yes……1 No……2	

H5.11	What cooking utensils are **frequently** used in this household?	Earth bowls…... ………. ………..…1 Aluminum pans……………………......2 Other (specify)________________ 96	
H5.12	What type of cooking fuel do you use (**main**)?	Gas………………………………...1 Electricity…………………………2 Wood……………………………...3 Charcoal………………………….4 Stalks……………………………...5 Other (specify)_______________96	
H5.13	What is the **common** toilet facility used by this household?	Free range……………………………1 Shared Pit latrine……………………2 Own Pit latrine………………………3 Shared KVIP………………………..4 Own KVIP………………………….5 Own flush toilet……………….…....6 Shared flush toilet…………………7 Other (specify)________________96	
H5.14	What is the **main source** of drinking water for this household?	Pipe borne water …………………..1 Bore-hole…………………………...2 Well water………………………….3 Dam/dugout…..……………..………4 Stream……………………………...5 Bottle water………………………..6 Sachet water……………………….7 Other (specify)________________96	
H5.15	During the season when food prices are highest, does your household face food shortage?	Yes……………………..…………1 No……………………………..………...2	
H5.16	Did you farm in the last farming season?	Yes……………………..…………1 No……………………………..………...2	**If 2 skip to H5.18**
H5.17	In the last farming season, what would be the market value of your total yield of all your farming activities? (**ESTIMATE in old Ghana cedis**)	Amount ¢_____________________ Don't Know……………………….88 NA…………………………..……..99	
H5.18	What is the main source of income in your household?	Salaries and/or wages………………1 Remittances……….…………………..2 Pensions and grants…………….….3 Sales of farm products……….......4 Other non-farm income…………....5 No income…………………….....6 Other (specify)________________96	
H5.19	**[SHOW CARD B] I would like to ask you to indicate how 'well-off' your household is compared to other households in Ghana? [WRITE NUMBER OF BLOCK ON CARD INDICATED BY RESPONDENT; I.E. 1 TO 5]**	[ ][ ]	

SECTION 6
HOUSEHOLD EXPENDITUE AND DURABLES/ASSETS

In the last month, did the household spend money on the following items? **ESTIMATES (If No…..2, enter 00 but if yes….1, provide amount but if don't know amount put 88)**

No	Item		Amount if Yes=1
H6.1	*Health care*: clinics/HC/hospitals fees, buying drugs from private/market dispensaries, traditional/herbal treatment fees. Ask, apart from **premium and registration fees payments** (for insured), **how much do you think you have incurred** for the health care of you and your household members within the past one month?	Yes……1 No……..2	
H6.2	*Malaria:* HH expenditure on malaria (**from H 6.1 ask what was spent on malaria care**)	Yes…….,1 No……..2 DK…….88 NA…….99	
H6.3	*Education:* children school fees, books and other materials, P.T.A and other school contributions	Yes……1 No……..2	
H6.4	*Farming activities:* fertilizer, insecticides, purchase of seeds, irrigation, hired labour, renting equipments, animal feeding, etc	Yes……1 No……..2	
H6.5	*Foods:* including rice, millet, maize, cassava, yam, plantain, cocoyam, beans groundnuts, salt, pepper, etc.	Yes……1 No……..2	
H6.6	*Clothing and shoes:* for both adults and children	Yes……1 No……..2	
H6.7	*Utility services:* water, electricity,	Yes……1 No……..2	
H6.8	*Fuel for transportation:* petrol, taxis and trotro/bus fares etc.	Yes……1 No……..2	
H 6.9	*Fuel for lighting and cooking:* gas for cooking, kerosene, charcoal, firewood	Yes……1 No……..2	
H6.10	*Household utensils:* bowls, pans, buckets, cutlery, pots and other kitchen utensils	Yes……1 No……..2	
H6.11	*Capital goods:* motor vehicle, motor, bicycles, radio, buildings and building materials, grinding mills, etc	Yes……1 No……..2	
H6.12	Rent (only ask if person is renting house)	Yes……...1 No……2 DK…….88 NA…….99	
H6.13	Direct taxes	Yes……1 No……..2 DK…….88	
H6.14	Drinks/cola nuts/tobacco/funeral celebration, marriages	Yes……1 No……..2	
H6.15	Paying of debts	Yes……1 No……..2	
H6.16	Others(specify)	Yes……1 No……..2	
H6.17	**Total expenditure (Excluding amount in H 6.2)**		

HOUSEHOLD DURABLE (GOODS & ASSETS) (if Yes….1, provide number, if No….2 Enter 00)

No	Items	Category	Number
H6.18	Do you or any member of this household own **functioning bicycles?**	Yes…1 No….2	
H6.19	Do you or any member of this household own **functioning motorbikes?**	Yes…1 No….2	
H6.20	Do you or any member of this household own **functioning cars/vehicles?**	Yes…1 No….2	
H6.21	Do you or any member of this household own **functioning tractors?**	Yes…1 No….2	
H6.22	Do you or any member of this household own **wooden/iron beds?**	Yes…1 No….2	
H6.23	Do you or any member of this household own **functioning radio sets?**	Yes…1 No….2	
H6.24	Do you or any member of this household own **functioning TV sets?**	Yes…1 No….2	
H6.25	Do you or any member of this household own **functioning sewing machines?**	Yes…1 No….2	
H6.26	Do you or any member of this household own **functioning electric bulbs and lanterns?**	Yes…1 No….2	
H6.27	Do you or any member of this household own **functioning traditional lamps?**	Yes…1 No….2	
H6.28	Do you or any member of this household own **functioning coal pots or kerosene stoves?**	Yes…1 No….2	
H6.29	Do you or any member of this household own **functioning electrical or gas cookers?**	Yes…1 No….2	
H6.30	Do you or any member of this household own **functioning refrigerators/deep freezers?**	Yes…1 No….2	
H6.31	Do you or any member of this household own **functioning DVD/VCD/VHS players?**	Yes…1 No….2	
H6.32	Do you or any member of this household own **functioning telephones** (landline)**?**	Yes…1 No….2	
H6.33	Do you or any member of this household use **Cell phones**?	Yes…1 No….2	
H6.34	Do you or any member of this household have **Personal**	Yes…1	

	computer?	No….2	
H6.35	Do you or any member of this household have **bank account**?	Yes…1 No….2	
H6.36	Do you or any member of this household own **cattle?**	Yes…1 No….2	
H6.37	Do you or any member of this household own **sheep?**	Yes…1 No….2	
H6.38	Do you or any member of this household own **goats?**	Yes…1 No….2	
H6.39	Do you or any member of this household own **pigs?**	Yes…1 No….2	
H6.40	Do you or any member of this household own **donkeys?**	Yes…1 No….2	

End time				

THANK YOU VERY MUCH FOR YOUR RESPONSES

MODULE 1

INDIVIDUAL WHO ***USED ANY HEALTH SERVICES*** OTHER THAN FOR DELIVERIES OR INPATIENT CARE QUESTIONNAIRE 2008

STRATEGIES FOR HEALTH INSURANCE FOR EQUITY IN LESS DEVELOPED COUNTRIES (SHIELD)

Health Care Financing and Benefit incidence study in Ghana

SECTION 1: IDENTIFICATION

U 1.1	FORM NUMBER								
U 1.2	RESPONDENT [THE INDIVIDUAL **(User of health service)**=1, CARETAKER=2]					1		2	
U 1.3	HOUSEHOLD LOCATION RURAL/URBAN					RURAL...1		URBAN...…….2	
U 1.4	NAME COMMUNITY/VILLAGE/TOWN								
U 1.5	REGION	UPPER WEST……1 NORTHERN…….. 2 BRONG AHAFO…….3 ASHANTI……4 GREATER ACCRA……5							
U 1.6	DISTRICT	LAWRA……..1 WEST GONJA…….2 BEREKUM……..3 ATWIMA NWABIAGYA……..…….....4 KPESHIE……...5 DANGME WEST…..……..6							
U 1.7	DATE OF INTERVIEW (DD/MM/YY)								
U 1.8	ENUMERATOR'S NAME/ INITIALS								
U 1.9	RESULT OF INTERVIEW, COMPLETE							1	
	OTHER(SPECIFY)_____							2	
U 1.10	EDITED BY SUPERVISOR (NAME) NAME_____DATE _____/_____/_____								

SECTION 2

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF USER OF HEALTH SERVICES

No	Questions	Coding category	SKIP
U 2.1	Which code in H2.1 is the user of health service?		
U 2.2	What is user's ethnic background?	Dagare……1 Wala...…….…..2 Akan…….3 Ga……4	

		Dangme…….…….....……5 Dagomba.....6 Gonja.....7 Ewes…….…….8 Mamprusis……9 Other(specify)_____96	
U 2.3	What is user's current marital status?	Married……..……..……1 Never married…… ……..…..…2 Divorced……..…..…3 Widowed……..…..…..…4 Separated…… ……..……5 Living together…….……..6 Child …….7 Other (specify)_____ 96	
U 2.4	What is user's religion?	Traditional……..…..……..1 Christian……2 Muslim……..……3 Other (specify)_____96	

U 2.5 During the past month did (name) use any of the following:

U 2.6 Total cost of use

1 = Public hospital [**Specify name of hospital**] 2 = Public clinic/Community Health Centre 3 = Clinic at workplace 4 = Private General Practitioner/nurse 5 = Private specialist 6 = Private hospital 7 = Private Dentist 8 = Private pharmacy shop 9 = Chemical seller with prescription	10= Chemical seller without prescription 11 = Community health worker 12 = Private Midwife 13 = Traditional birth attendant 14 = Traditional Healer/herbalist 15= Spiritualist 16=Drug Peddlers 17 = Treated self with herbs/or left over drugs at home. 96 = Other [Specify] 99= NA

IF NOT USED CODE 0

If used then record the number of visits, e.g. 1 for one visit, 2 for two visits and so on.

Use/cost	1	Specify Hospital/place you sought treatment	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Other Specify	Grand total
Number of use/visits																				
Total cost (indicate for all use except for the most recent use)																				

U 2.7 The most recently used informal care (write code in box (10 to 17 + 96) | | |

U 2.8 The most recently used formal care (write code in box) (1-9 + 96) | | |

SECTION 3

A	MOST RECENTLY USED INFORMAL HEALTH CARE (including self treatment at home)		SKIP
U 3.1	Where did you go for the informal treatment for (NAME)?	Self treatment with orthodox medicines. ..1 Self treatment with herbs……..……..2 Traditional healer/spiritualist…….……3 Chemical seller with prescription……...4 Chemical seller without prescription……..5 Pharmacy……6 Other(Specify)_____96 NA……99	
U 3.2	Did (NAME) have to pay for the treatment in cash (that is out-of-pocket)?	Yes……..…...1 No……...……..…..…2 Don't Know……..88 NA……..……99	**If 2 skip to U 3.4**
U 3.3	How much in cash did (Name) or the household pay for treatment at this place? **(record in old cedis)**	Amount in ¢_____ Don't Know……..8888 NA……..……9999	
U 3.4	Did you make any in-kind payment for (Name) treatment?	Yes……..1 No……...……2 Don't Know……..88 NA……99	**If 2 or 88 skip to U 3.6**
U 3.5	What was the value of the in-kind payment? **(record in old cedis)**	Amount in ¢_____ Don't Know……..8888 NA……9999	
U 3.6	Why did (Name) or the household **not** have to pay for treatment at this place?	Service was offered free of charge ....1 Given drug on credit……...2 Other (Specify) _____96 NA……99	
U 3.7	Did you pay for transport to this place for (Name)?	Yes……..1 No……...……2 NA……99	**If 2 skip to U4.1 if applicable**
U 3.8	How much did (Name) pay? **(record in old cedis)**	Amount in ¢_____ Don't Know……..8888 NA……9999	
END INTERVIEW HERE IF NO FORMAL CARE WAS SOUGHT FOR [NAME]			

SECTION 4

	MOST RECENTLY USED FORMAL CARE		
U 4.1	**(If person used more than one provider, ask)** Where did (NAME) seek treatment from **most recently**?	Regional Hospital……………….……..1 District Hospital……………………2 Private hospital……………………..3 Health Centre…………………….....4 Public Clinic…………………….…..5 Private clinic…………………..……..6 CHPS compound…………………....7 Other (specify)………………………96 NA………………………………….99	
U 4.2	Why was (NAME) taken there instead of other facility (**main reason**)?	Nearness……………………………….…1 Quick service…………..……..………..2 Less medical bill………..……..……….3 Less waiting time………..…………….4 Good quality service………..………….5 Emergency/was taken there…………..….6 Do not have to pay…………………………7 Told to go there by doctor/nurse…………..8 Told to go there by DHIS……………….9 Know care available will help me get better.10 Know I will be treated respectfully…………11 Other(specify)________________________96	
U 4.3	Who took the decision?	Self………………………………….1 Spouse ……………….…………….2 Household head…………….……….3 Relative/friends/Neighbours….……..4 Referral health worker………..…...5 Other(Specify)_________________96 DK……………………………..….88 NA………………………………….99	
U 4.4	How many days after illness was the decision taken?	Same day……………..…………..1 Next day……………..……………2 Third day……………………………3 Fourth day…………………..……….4 After fourth day…………..………5 Other(Specify)_________________96 DK…………………………………88 NA………………………………….99	
U 4.5	How serious was the illness/injury?	Very serious………………….……..1 Serious…………………….….…..2 Not serious……………..……..…..3 Other(Specify)_________________96 DK…………………………………88 NA…………………………………99	
U 4.6	Did (NAME) or household have to pay for the treatment in cash (that is out-of-pocket)?	Yes…………………………………..1 No………...………………………2 DK…………………………………..88 NA…………………………………..99	**If 1 skip U 4.8**
U 4.7	Why did (NAME) or the household **not** have to pay for treatment at this place? (**If 4.6 is 2**)	Service was offered free of charge….1 Covered by health insurance………..2 Exempted due to inability to pay……3 Other (specify)__________________96 DK…………………………………..88	

		NA……..99	
U 4.8	How much did (NAME) or the household pay for this visit in cash (that is out-of-pocket)? **(record in old cedis)**	Amount in ¢_____ DK……8888 NA……9999	
U 4.9	Did (NAME) or household have to make any unofficial payment to the service provider (that is under-the-table)?	Yes……..1 No……...……2 DK……..88 NA……..99	**If 2 or 88 skip to U 4.11**
U 4.10	How much did you pay (under-the-table payment)?	Amount in ¢_____ DK……8888 NA……9999	
U 4.11	How long did it take (NAME) to travel from home to this facility/provider? **TIME IN MINUTES**	Time in minutes_____ DK……8888 NA……9999	
U 4.12	Did (NAME) or household have to pay anything for transport to this facility/ provider?	Yes……..1 No……...……2 DK……..88 NA……..99	**If 2 skip to U 4.14**
U 4.13	How much did (NAME) or household pay for transport to this facility? **(record in old cedis)**	Amount in ¢_____ DK……8888 NA……9999	
U 4.14	Were you or (NAME) accompanied by somebody or persons to the health facility?	Yes……..1 No……..2	**If 2 skip to 4.17**
U 4.15	How much did the person(s) who accompanied you pay for transport?	Amount in ¢_____ DK……8888 NA……9999	
U 4.16	What would the lead (If more than one person accompanied) person have used the time for, if s/he/they had not accompanied you or NAME to the health facility (**main used**)?	On the farm……...……..1 Trading ……...…2 Resting……...3 At the office (government)……4 DK……88 Other (Specify)…….96 NA……99	
	PAYMENT FOR SERVICES AT FORMAL HEALTH FACILITY (indicate if you receive this service and how much you paid)		

	Services	U 4.17 During this Visit/inpatient admission; did (**Name**)/you receive any of the following services? Yes……1 No……2 DK…....88 NA..…..99	U 4.18 Were you asked to pay for the service? **(If 2 skip to U 4.21)** Yes……..1 No……...2 DK…….88 NA ……...99	U 4.19 How much did you pay for the service? **(record in old cedis)** Amount in ¢ DK…...8888 NA …..9999	U 4.20 **(For insured clients only)** Why did you pay for the service? Disease not covered by HI…….1 Drugs not covered by HI……..…2 Forgot to take my card…….3 Lost the HI card……..4 Other (specify)…..96 NA……..99 **(If provided skip to U4.22)**	U 4.21 Why did you not pay for this service? Exempted…1 Covered by HI……2 Could not afford.....3 Covered by employer….4 Other (specify) _ 96 NA ….....99	
	Consultation	☐	☐	¢_____	☐	☐	
	Laboratory	☐	☐	¢_____	☐	☐	
	X-ray	☐	☐	¢_____	☐	☐	
	Scan	☐	☐	¢_____	☐	☐	
	Other (specify)	☐	☐	¢_____	☐	☐	

	DRUGS (now lets talk about drugs)		
U 4.22	Did you get prescription for drugs?	Yes……...1 No……...……2	**If 2 skip to U 4.30**
U 4.23	Did you **receive** all the prescribed drugs from this facility?	Yes, all drugs……....1 Some drugs……..2 None of the drugs……...3 Other (specify)_____96 DK……..88 NA……..99	**If 3 skip to U 4.28**
U 4.24	Did you have to pay for the prescribed drugs received?	Yes……...1 No……...……2	**If 2 skip to U 4.26**
U 4.25	How much **did** you pay for the drugs you received? **(record in old cedis)**	Amount in ¢_____ DK……8888 NA……9999	**If amount is given skip to U 4.27**
U 4.26	Why did you not pay for the drugs you received? **(if person did not pay (pays nothing) i.e. 00**	Exempted ……1 Covered by HI scheme……2 Could not afford the drugs……..3 Covered by employer……..4 Other (Specify)……96 NA……...99	
U	How **satisfied** were you that these drugs helped to	Very satisfied……..……1	

4.27	improve your health?	Satisfied……………..……………..2 Somewhat satisfied………………….3 Dissatisfied…………..………………4 Very dissatisfied……..………………5 DK……………………..………….88 NA………………………………..99	
U 4.28	If you **did not** get all drugs from the health facility, did you purchase the rest of your drugs elsewhere?	Yes…………………………………..1 No………...…………………………2 NA………………………………..99	**If 2 skip to U 4.30**
U 4.29	How much did you pay for the drugs elsewhere? **(record in old cedis)**	Amount in ¢____________________ DK……………………………8888 NA……………………………9999	
U 4.30	Did you **pay for transport** to buy drugs elsewhere?	Yes…………………………………..1 No…………………………………2 DK………………………………..88 NA………………………………..99	**If 2 skip to U 4.32**
U 4.31	How much did you pay for transport to get to this place? **(record in old cedis)**	Amount in ¢__________________ DK……………………………8888 NA……………………………9999	
U 4.32	Did you or (NAME) have to pay for supplies (i.e. gauze, syringe, plaster, disinfectants, etc) either in the facility or outside the facility?	Yes………………………………...1 No…………………………………….2 DK……………………………………88 NA……………………………………99	**If 2 skip to U4.34**
U 4.33	How much did you or (Name) pay for the supplies?	Amount in ¢____________________ DK……………………………8888 NA……………………………9999	
U 4.34	Did you have to pay for **special food** which contributes to the treatment of (NAME) illness?	Yes…………………………………..1 No………...…………………………2 DK………………………………..88 NA………………………………..99	**If 2 or 88 skip to U 4.36**
U 4.35	If 4.34, is **1**, how much did you spend on this special food for (NAME) illness? **(record in old cedis)**	Amount in ¢____________________ DK………………………………8888 NA………………………………9999	
U 4.36	Is there any **other expenditure** related to the illness/injury of (NAME) that you have incurred?	Yes…………………………………..1 No………...…………………………2 DK………………………………..88 NA………………………………..99	**If 2 or 88 skip to U 4.38**
U 4.37	If 4.36, is **1**, how much was this? **(record in old cedis)**	Amount in ¢__________________ DK………………………………8888 NA………………………………9999	

	REFERRALS		
U 4.38	Were you referred to go to another facility?	Yes…………………………………..1 No………...…………………………2 NA………………………………..99	**If 2 skip to U 4.46**
U 4.39	Did you go to the referral point?	Yes…………………………………..1	**If 2 skip to U 4.43**

		No……...……2 NA……..99	
U 4.40	Did you pay at the point of referral for treatment?	Yes……..1 No……...2 NA……..99	**If 2 skip to U 4.42**
U 4.41	How much did you have to pay at this referral point?	Amount in ¢_____ DK……8888 NA……9999	**If amount provided skip to U4.44**
U 4.42	Why did you **not** pay at the point of referral?	Service was offered free of charge….1 Covered by health insurance……..2 Exempted due to inability to pay……3 Other (specify)_____96 DK……..88 NA……..99	
U 4.43	What was the reason for not going to the referral point?	Do not have money……1 Distance too far……..2 Condition became better…….3 Do not like the referred place…….4 Other (specify)_____ 96 NA……99	
U 4.44	Did you and your household have enough cash in the home to pay your bill?	Yes……..1 No……...2 NA……..99	**If 1 skip to U 4.46**
U 4.45	If U 4.44 is 2, how did you and your household get money to pay for this (**main source**)?	Sold agricultural produce……...1 Sold assets(household tools)……..2 Took money from savings (Banks)…3 Took money from Susu collector.....4 Borrowed from friend or relative…...5 Borrowed from money lender……6 Received a gift……...7 Paid bill in instalments…….……...8 Bill left unpaid……...9 Other (specify)_____96 NA……99	
	QUALITY OF CARE		
U 4.46	How do you rank the attitude of health providers?	Very good……..…….1 Good ……2 Satisfactory……..3 Fair……..…….....4 Poor…….5 Other (Specify)_____ 96 DK……88 NA……99	
U 4.47	How satisfied were you with the **cleanliness** at the health facility?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied…….3 Dissatisfied…….……4 Very dissatisfied…….……5 DK……..…….88 NA……..99	
U 4.48	How satisfied were you that you were treated with respect and dignity by the facility staff?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied…….3	

		Dissatisfied……4 Very dissatisfied……5 DK……88 NA……99	
U 4.49	Will you visit the health facility again?	Yes……1 No……2 NA……99	**If 2 skip to U 4.51**
U 4.50	If **U 4.49 is 1,** what will be the **main reason** that will make you visit this facility again?	Good attitude of health staff……1 Cleanliness of the facility……2 Prompt care/treatment……3 Easy access to doctor/nurse……4 Other (specify)_____96 NA……99	**If ANY skip to D 3.48**
U 4.51	If **4.49** is **2**, what is the **main reason** why you will not visit this facility again?	Staff were rude/poor manner……1 Waiting time too long……2 Drugs were not available……3 Services were too expensive……4 Lack of privacy……5 Staff did not explain treatment……6 Facility was not clean……7 Did not get to see a Doctor……8 No injection given……9 Other (specify)_____96 NA……99	
U 4.52	How satisfied were you with the overall quality of care received there?	Very satisfied……1 Satisfied……2 Somewhat satisfied……3 Dissatisfied……4 Very dissatisfied……5 DK……88 NA……99	**If 4.52 is 1 or 2 END Interview**
U 4.53	Why were you **not fully satisfied** with the care provided? (**Ask if 4.52 is 3, 4. or 5**) MULTIPLE RESPONSES ALLOWED	Staff were rude/poor manner……1 Waiting time too long……2 Drugs were not available……3 Services were too expensive……4 Lack of privacy……5 Staff did not explain treatment……6 Facility was not clean……7 Did not get to see a Doctor……8 No injection given……9 Other (specify)_____96 NA……99	

MODULE 2

INDIVIDUAL (HOSPITALISED) LEVEL QUESTIONNAIRE 2008

STRATEGIES FOR HEALTH INSURANCE FOR EQUITY IN LESS DEVELOPED COUNTRIES (SHIELD)

Health Care Financing and Benefit incidence study in Ghana

SECTION 1

IDENTIFICATION

P1.1	FORM NUMBER								
P1.2	RESPONDENT (THE INDIVIDUAL **(Person Hospitalised or Admitted)** =1, CARETAKER=2)					1		2	
P1.3	HOUSEHOLD LOCATION RURAL/URBAN					RURAL...1		URBAN...…….2	
P1.4	NAME COMMUNITY/VILLAGE/TOWN								
P1.5	REGION	UPPER WEST……1 NORTHERN…….. 2 BRONG AHAFO…….3 ASHANTI……4 GREATER ACCRA……5							
P1.6	DISTRICT	LAWRA……..1 WEST GONJA…….....2 BEREKUM…….3 ATWIMA NWABIAGYA…….…….....4 KPESHIE……....5 DANGME WEST…..……..6							
P1.7	DATE OF INTERVIEW (DD/MM/YY)								
P1.8	ENUMERATOR'S NAME/ INITIALS								
P1.9	RESULT OF INTERVIEW, COMPLETE							1	
	OTHER(SPECIFY)_____							2	
P1.10	EDITED BY SUPERVISOR (NAME) NAME_____DATE _____/_____/_____								

SECTION 2

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT

No	Questions	Coding category	SKIP
P 2.1	Which code in H2.1 is the person hospitalised/admitted?	☐☐	
P 2.2	What is the ethnic background of the person hospitalised/admitted?	Dagare……1 Wala……2 Akan……3 Ga……4 Dangme……5 Dagomba……6 Gonja……7 Ewes……8 Mamprusis……9 Other(specify)_____96	
P 2.3	What is the current marital status of the person hospitalised/admitted?	Married……1 Never married……2 Divorced……3 Widowed……4 Separated……5 Child……6 Other (specify)_____ 96	
P 2.4	What is the religion of the person hospitalised/admitted?	Traditional……1 Christian……2 Muslim……3 Other (specify)_____96	

SECTION 3

HOSPITALISATION WITHIN THE PAST ONE YEAR

No	Questions	Coding category	Skip
P 3.1	For what **main** sickness were you hospitalized within the past one year?	Malaria……1 ARI……2 Diarrhoea……3 Skin disease……4 Other (specify)_____96 DK……88	
P 3.2	In which health facility were you hospitalized for (NAME OF AILMENT) within the past one year?	Regional Hospital……1 District Hospital……2 Health Centre……3 Public Clinic……4 Private clinic……5 CHPS compound……6 DK……88 Other (specify)……96	
P 3.3	In the past year, that is since [July 2007) how many different times has <u>name</u>/you been admitted to a hospital/clinic for one night or more?	Write the number of admissions ☐☐	

P 3.4	I would like to ask some questions about the most recent stay in hospital/clinic for one night or more. Which hospital/clinic was … admitted to?	Name of hospital/clinic here.					
P 3.5	Who took the decision?	Self ……1 Spouse. ……2 Household head……3 Relative/friends/Neighbours…..4 Referral health worker…….5 Other(Specify)_____96 DK……88					
P 3.6	Did you have to pay transport to this facility?	Yes……...1 No……...……2 DK……...88					**If 2 or 88 skip to 3.8**
P 3.7	If 3.6 is 1, how much did you pay for transport to this facility?	Amount in ¢_____ DK……8888 NA……9999					
P 3.8	How many nights were you admitted?	☐☐☐☐☐☐					
P 3.9	Were you detained after discharge because you were unable to pay for services rendered?	Yes……...1 No……2					**If 2 skip to 3.11**
P 3.10	How many nights were you detained after discharge because you were unable to pay for services rendered?	☐☐					
	PAYMENT FOR SERVICES AT FORMAL HEALTH FACILITY (indicate if you receive this service and how much you paid)						
	Services	**P 3.11** During this visit/inpatient admission, did (NAME) /you receive any of the following services?	**P 3.12** Were you asked to pay for the service? Yes …….1	**P 3.13** How much did you pay for the service? **(record in old cedis)** Amount in ¢……. DK……...88 NA……...99	**P 3.14** **(For insured clients only)** Why did you pay for the service? Disease not covered by HI……....1 Drugs not covered by HI……2 Forgot to take my card……..……3 Other	**P 3.15** Why did you not pay for this service? Exempted…..1 Covered by HI……2 Could	

		Yes……1 No……..2 DK……88 **If 2 go to next**	No…..2 DK……88 **(If 2 skip to P 3.15)**		(specify)……..96 NA……..99 **(If provided skip to P 3.16)**	not afford ……...3 Other_____96 NA……..99	
	Consultation	☐	☐	¢_____	¢_____	☐	
	Laboratory	☐	☐	¢_____	¢_____	☐	
	X-ray	☐	☐	¢_____	¢_____	☐	
	Scan	☐	☐	¢_____	¢_____	☐	
	Hospitalisation/admission	☐	☐	¢_____	¢_____	☐	
	Other (specify)	☐	☐	¢_____	¢_____	☐	
	DRUGS (now lets talk about drugs)						
P 3.16	Did you get prescription for drugs?	Yes……...1 No……...…….2					**If 2 skip to 3.22**
P 3.17	Did you receive all the prescribed drugs from this facility?	Yes all drugs……1 Some drugs……..2 None of the drugs……3 Other (specify)_____96 NA……..……99					**If 2 or 3 skip to 3.20**
P 3.18	How much did you pay for the drugs you received? **(record in old cedis)**	Amount in ¢_____ DK……8888 NA……9999					
P 3.19	How **satisfied** were you that these drugs helped to improve your health?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied…….3 Dissatisfied…….……4 Very dissatisfied…….……5					

		DK……..…….88 NA……..99	
P 3.20	If you **did not get all drugs** from the health facility, did you purchase the rest of your drugs elsewhere?	Yes……...1 No……...…….2 NA……..99	**If 2 skip to 3.24**
P 3.21	How much did you pay for the drugs elsewhere? **(record in old cedis)**	Amount in ¢_____ DK…….8888 NA…….9999	
P 3.22	Did you pay for transport to go elsewhere for the drugs?	Yes……...1 No……...…….2	**If 2 skip to 3.24**
P 3.23	How much did you **pay for transport** to get to this place? **(record in old cedis)**	Amount in ¢_____ DK…….8888 NA…….9999	
P 3.24	Were you or (Name) accompanied by somebody to the health facility?	Yes……..1 No……...……2	**If 2 skip 3.27**
P 3.25	How much did the person who accompanied you pay for transport?	Amount in ¢_____ DK…….8888 NA…….9999	
P 3.26	What would the person have used the time for, if s/he had not accompanied you to the health facility?	On the farm……..……....1 Trading ……2 Resting…… 3 At the office (government)……..4 Other (Specify)…….…….96 DK…….88 NA…….99	
P 3.27	Did you have to pay for **special food** which contributes to the treatment of (NAME) illness?	Yes……...1 No……...…….2 NA…….99	**If 2 skip to 3.29**
P 3.28	How much did you spend on these for (NAME) illness? **(record in old cedis)**	Amount in ¢_____ Covered by Health Insurance……1 DK…….8888 NA…….9999	
P 3.29	Is there any **other** expenditure related to the illness of (NAME) that you have incurred?	Yes……..1 No……...……2 DK……88 NA……99	**If 2 skip to 3.31**
P 3.30	How much was this? **(record in old cedis)**	Amount in ¢_____ DK…….8888 NA…….9999	
	SOURCE OF MONEY TO PAY BILLS		
P 3. 31	Did you and your household have enough cash in the home to pay your bill?	Yes……..1 No……...2 NA……..99	**If 1 skip to P 3.33**

P 3.32	If P 3.31 is 2, how did you and your household get money to pay for this (**main source**)?	Sold agricultural produce……...1 Sold assets(household tools)……..2 Took money from savings (Banks)…3 Took money from Susu collector.....4 Borrowed from friend or relative…...5 Borrowed from money lender……6 Received a gift……...7 Paid bill in instalments…….……...8 Bill left unpaid…….……...9 Other (specify)_____96 NA……99	
	QUALITY OF SERVICE AT FACILITY		
P 3.33	What was your **main reason** for choosing this health facility?	Nearness……1 Quick service……..……..…..2 Less medical bill……..……..….3 Less waiting time……..……4 Good quality service……..…….5 Emergency/was taken there…….…….6 Do not have to pay……7 Told to go there by doctor/nurse……...8 Told to go there by DHIS……..9 Know care available will help me get better……...10 Know I will be treated respectfully…11 Other(specify)_____96	
Now I want to ask you about hospital services. Please tell me how satisfied you are with the following aspects of the hospital service. Rate your satisfaction using a five point scale where one is very satisfied and five is very dissatisfied.			
P 3.34	How **satisfied** are you with **services** given by this facility?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied……..…….3 Dissatisfied……..……4 Very dissatisfied……..……5 DK……..……..…….88	
P 3.35	How **satisfied** were you with the **cleanliness** at the health facility?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied……..…….3 Dissatisfied……..……4 Very dissatisfied……..……5 DK……..……..…….88	
P 3.36	How **satisfied** were you that you were **treated with respect and dignity** by the facility staff?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied……..…….3 Dissatisfied……..……4 Very dissatisfied……..……5 DK……..……..…….88	
P 3.37	How do you **rank** the attitude of health providers?	Very satisfied……..……1 Satisfied……..……..2 Somewhat satisfied……..…….3 Dissatisfied……..……4	

		Very dissatisfied……5 DK……88	
P 3.38	How **satisfied** were you that you received **medical attention as soon as possible**, i.e. without having to wait unnecessarily?	Very satisfied……1 Satisfied……2 Somewhat satisfied……3 Dissatisfied……4 Very dissatisfied……5 DK……88	
P 3.39	How **satisfied** were you that these drugs helped to improve your health?	Very satisfied……1 Satisfied……2 Somewhat satisfied……3 Dissatisfied……4 Very dissatisfied……5 DK……88	
P 3.40	Would you visit this health facility **again** for hospitalization?	Yes ……1 No……2	**If 1 skip to 3.42**
P 3.41	What is the **main reason** why you will **not visit** this facility again?	Staff were rude/poor manner……1 Waiting time too long……2 Drugs were not available……3 Services were too expensive……4 Lack of privacy……5 Staff did not explain treatment……6 Facility was not clean……7 Did not get to see a Doctor……8 No injection given……9 Other (specify)_____96 NA……99	
P 3.42	How **satisfied** were you with the **overall quality** of care received there?	Very satisfied……1 Satisfied……2 Somewhat satisfied……3 Dissatisfied……4 Very dissatisfied……5 DK……88	
P 3.43	Why were you **not fully satisfied** with the care provided? (**Ask if 3.42 is 3, 4. or 5**) MULTIPLE RESPONSES ALLOWED	Staff were rude/poor manner……1 Waiting time too long……2 Drugs were not available……3 Services were too expensive……4 Lack of privacy……5 Staff did not explain treatment……6 Facility was not clean……7 Did not get to see a Doctor……8 No injection given……9 Other (specify)_____96 NA……99	

MODULE 3

INDIVIDUAL (PREGNANCY/DELIVERY) LEVEL QUESTIONNAIRE 2008

STRATEGIES FOR HEALTH INSURANCE FOR EQUITY IN LESS DEVELOPED COUNTRIES (SHIELD)

Health Care Financing and Benefit incidence study in Ghana

SECTION 1: IDENTIFICATION

D 1.1	FORM NUMBER							
D 1.2	RESPONDENT (PREGNANT ……….1, DELIVERED….2)	1	2					
D 1.3	HOUSEHOLD LOCATION RURAL/URBAN	RURAL...1	URBAN...…….2					
D 1.4	NAME COMMUNITY/VILLAGE/TOWN							
D 1.5	REGION	UPPER WEST…………………………1 NORTHERN……………………….….. 2 BRONG AHAFO……………………….3 ASHANTI…………………………….…4 GREATER ACCRA……………………5						
D 1.6	DISTRICT	LAWRA……………………………..1 WEST GONJA….………………….……2 BEREKUM……………………………..3 ATWIMA NWABIAGYA.……..……....4 KPESHIE…………………………….....5 DANGME WEST….…………………..6						
D 1.7	DATE OF INTERVIEW (DD/MM/YY)							
D 1.8	ENUMERATOR'S NAME/ INITIALS							
D 1.9	RESULT OF INTERVIEW, COMPLETE	1						
	OTHER(SPECIFY)_______________________________	2						
D 1.10	EDITED BY SUPERVISOR (NAME) NAME_____________________________DATE _____/_____/______							

SECTION 2

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT

No	Questions	Coding category	SKIP
D 2.1	Which code in H2.1 is the respondent (person pregnant or recently delivered)?	☐☐	
D 2.2	What is the ethnic background of person pregnant or recently delivered?	Dagare……………………………………….1 Wala..…………..…......................................2 Akan……………………..........................3 Ga…………………………………………4 Dangme……………….....................……….5 Dagomba...6 Gonja...7 Ewes………………………………………….8 Mamprusis……………………………………9 Other(specify)__________________________96	
D 2.3	What is the current marital status of person pregnant or recently delivered?	Married……………………….………….……1 Never married…… ……………………..….…2 Divorced……………………………..…..…3 Widowed…………………………….….….…4	

		Separated…… ……..……5 Other (specify)_____ 96	
D 2.4	What is the religion of person pregnant or recently delivered?	Traditional……..…..……..1 Christian……2 Muslim……..……3 Other (specify)_____96	

SECTION 3
DELIVERY WITHIN THE PAST ONE YEAR AND CURRENTLY PREGNANT

No	Questions	Coding category	Codes/skip
D 3.1	How many children have you **ever** given birth to (both dead and alive; excluding miscarriages and stillbirths)?	Number of children ☐☐	**If 00 skip to D3.4**
D 3.2	How many of your children are alive?	Children alive ☐☐	
D 3.3	How old is your most recent child?	Days ☐☐ Weeks ☐☐ Months ☐☐ Years ☐☐ DK ..……..……..88 NA ..……..99	
D 3.4	Did/Do you have complications with this pregnancy?	Yes ……..1 No…….…2	
D 3.5	How old is this pregnancy (**for pregnant women only**)?	WEEKS ☐☐ MONTHS ☐☐ NA……..99	
	ANC SERVICES		
D 3.6	Did/do you receive ANC during the/this pregnancy?	Yes ……..……..1 No…….....……..2	**If 1 skip to D 3.8**
D 3.7	If no, why did/are you not attend(ing) ANC?	Long distance to facility…....1 Attitude of health providers…2 No money……...3 Not Sick……..4 Not facing complications……5 Other(Specify)_____96 DK…….…….....88 NA…….99	**IF ANY skip to D 3.27**
D 3.8	How old was/is the pregnancy when you began attending ANC?	DAYS ☐☐ WEEKS ☐☐ MONTHS ☐☐ DK…….88 NA ……..…99	
D 3.9	How many ANC visits did you make before delivery/How many ANC visits have you made so far?	Number of visits ☐☐ NA…….99	
D 3.10	Where did/do you obtain the ANC	Regional Gov't Hosp……1	

	services?	District Hosp…….....2 Health Centre…….3 Private clinic…….....4 Private hospital…….....5 Private maternity home…….....6 CHPS Compound……...7 At home…….....8 Other (Specify)_____96	
D 3.11	What is/was your main reason for choosing this health facility for your ANC services?	Nearness……..……1 Quick service……..2 Less medical bill…….3 Less waiting time……4 Quality service……5 No other option……..6 Other(Specify)_____96 NA……..99	
D 3.12	Who did/do you primarily consult for ANC?	A doctor……...……1 A nurse…….....2 A midwife……...3 A trained TBA……4 An Untrained TBA…….5 Other(Specify)_____96 DK……..…….88 NA……99	
D 3.13	Are/Were you always **physically examined** by the person who attended to you on each visit?	Yes……..1 No……....2 NA……..99	
	PAYMENT FOR ANC SERVICE		
D 3.14	Are/Were you asked to **pay** for this ANC service?	Yes……..1 No……2 NA……..99	**If 2 skip to D 3.17**
D 3.15	How much did you pay for ANC service	Amount in ¢_____ NA……9999 DK……8888	
D 3.16	From which **source** did you get money to settle your bill?	Sold agricultural produce……...1 Sold assets(household tools)……..2 Took money from savings (Banks)3 Took money from Susu collector...4 Borrowed from friend or relative...5 Borrowed from money lender……6 Received a gift……....7 Paid bill in instalments……...8 Bill left unpaid……...9 Other (specify)_____96 NA……99	**If ANY skip to D 3.18**
D 3.17	Why were you **not asked to pay** for ANC?	ANC is free……1 Covered by NHIS……2 Exempted due inability to pay.3 Other(Specify)_____96 NA……99	

	TRANSPORTATION FOR ANC SERVICE		
D 3.18	How far is the **distance** from your home to the health facility where you obtain/obtained ANC?	Less than 1km……..……...1 1 to less than 3 km…….....2 3 km……...3 More than 3km……...4 Other (Specify)_____ 96 DK……..……...88 NA…….99	
D 3.19	Do/Did you have to **pay for transportation** on each ANC visit?	Yes……..1 No…….……..2 NA…….99	**If 2 skip to D 3.22**
D 3.20	If yes, **how much** did/do you have to pay on each visit as transport expenses?	Amount in ¢_____ DK……8888 NA……9999	
D 3.21	Is transportation **cost a hindrance** to you seeking ANC?	Yes……1 No……..2 NA……99	
	DRUGS		
D 3.22	Are/Were some drugs prescribed for you on each visit?	Yes ……..……..……1 No……..……...2 NA……99	**If 2 skip to D 3.26**
D 3.23	How much did you pay in total for drugs provided at this facility **(if yes in D3.22 but had no drugs at facility record 00 for amount paid)**	Amount in ¢_____ DK……..8888 NA……..9999	
D 3.24	Did/Do you have to buy drugs outside this facility in addition to what was obtained from the health facility?	Yes ……..……..……1 No……..……..……...2 NA…….99	**If 2 skip to D 3.26**
D 3.25	How much did you pay in total for drugs outside this facility for ANC?	Amount in ¢_____ DK……..8888 NA……..9999	
	DELIVERY (Do not ask women who are currently pregnant)		
D 3.26	**Where** did you go to **give birth** to your child?	Regional Gov't Hosp……1 District Hosp…….....2 Health Centre…….3 Private clinic…….....4 Private hospital…….....5 Private maternity home…….....6 CHPS Compound……...7 At home…….....8 Other (Specify)_____96 NA…….99	**If 8 skip to D 3.28**
D 3.27	If at the health facility, who assisted you to deliver?	A medical doctor.…….....1 A nurse……..2 A midwife…….....3	

		A community health nurse…….4 A health professional…..……5 Other(Specify)_____ 96 DK……..……..88 NA…….……99	
D 3.28	Were there complications during delivery?	Yes……..……...1 No……..…….…… .2	
D 3.29	Was your baby delivered normally or surgically (by caesarean delivery)?	Normally……..……....1 Surgical…….....2 Other (Specify)_____ 96 NA…….……99	
	PAYMENT FOR DELIVERY (Do not ask women who are currently pregnant)		
D 3.30	Did you have to pay for the delivery services?	Yes……..……...1 No……..……..2 NA…….……99	**If 2 skip to D 3.32**
D 3.31	How much did you and your family pay for the delivery? **(record in old cedis)**	Amount in ¢_____ DK…….. 8888 NA…….. 9999	
D 3.32	Why did you and your family **not** pay for the delivery services? **(ask if 3.30 is No=2)**	Delivery is free…….……...1 Delivered by a relative/friend….2 Covered by the NHIS……3 Paid by a Philanthropist…….4 Other (specify)_____96 NA…….……99	
D 3.33	Did you have to make any **under-the-table** payment for the delivery at the facility?	Yes……..……...1 No……..……..2 DK…….……88 NA…….……99	**If 2 or 88 skip to D 3.35**
D 3.34	How much was this **under-the-table** payment? **(record in old cedis)**	Amount in ¢_____ DK…….. 8888 NA…….. 9999	
D 3.35	Did you have to make any in-kind payment for the delivery (**applicable to all places of birth** D 3.26)?	Yes……..……...1 No……..……..2 DK…….……88 NA…….……99	**If 2 or 88 skip to D 3.37**
D 3.36	What was the value of the in-kind payment	Amount in ¢_____ DK…….. 8888 NA…….. 9999	
D 3.37	From which source did you and your family get money to pay these bills? (**Only ask if 3.30 is Yes=1 or 3.33 is Yes=1 or 3.35 is Yes=1)** **MULTIPLE RESPONSES ALLOWED**	Sold agricultural produce……...1 Sold assets(household tools)……..2 Took money from savings (Banks)3 Took money from Susu collector...4 Borrowed from friend or relative…5 Borrowed from money lender……6 Received a gift……...7 Paid bill in instalments……...8 Bill left unpaid……...9 Other (specify)_____96 NA…….……99	**If ANY skip to D 3.36**
	POSTNATAL SERVICE		

	(Do not ask mothers who are pregnant or whose babies are less than six weeks)		
D 3.38	After delivery, did you go back to the facility or any other facility at six weeks for **Postnatal care**?	Yes……..…….....1 No……..……...2 NA……99	**If 1 skip to D 3.40**
D 3.39	Why did you **not** go back to the facility or any other facility for postnatal care?	Staff were rude/poor manner….....1 Waiting time too long……2 Drugs were not available……..….3 Services were too expensive……..4 Lack of privacy……..5 Staff did not explain treatment…..6 Facility was not clean……7 Did not get to see a Doctor…….…8 No injection given…….9 Other (specify)_____96 NA……..……...99	**If any skip to D 3.44**
D 3.40	If **1** in **D3.38**, did **you pay** for the postnatal services?	Yes……..……...1 No……..…….....2 NA…...…….99	**If 2 skip to D 3.42**
D 3.41	How much did **you pay for the postnatal services**?	Amount in ¢_____ DK……8888 NA …….....9999	
D 3.42	Why did you **not** pay for the postnatal services?	Post natal service is free...….....1 Covered by the NHIS……..2 Paid by a Philanthropist…….3 Other (specify)_____ 96 NA…….....99	
D 3.43	How much did you pay as **transport cost** to seek postnatal care?	Amount in ¢_____ DK……8888 NA …….....9999	
	QUALITY OF CARE (ANC) **(ASK ALL: both currently pregnant and women who have given birth)**		
D 3.44	How **satisfied** are you with services given by this facility?	Very satisfied……..…….1 Satisfied……..2 Somewhat satisfied……..…..3 Dissatisfied…….……4 Very dissatisfied……..…5 Other(specify)_____ 96 DK……..…….88 NA……..99	
D 3.45	How satisfied were you with the **cleanliness** at the health facility?	Very satisfied……1 Satisfied……2 Somewhat satisfied……3 Dissatisfied……4 Very dissatisfied…….……5 Other(specify)_____ 96 DK……..……88 NA……..99	
D 3.46	How do you **rank the attitude** of health providers?	Very good……...……...1 Good……..2	

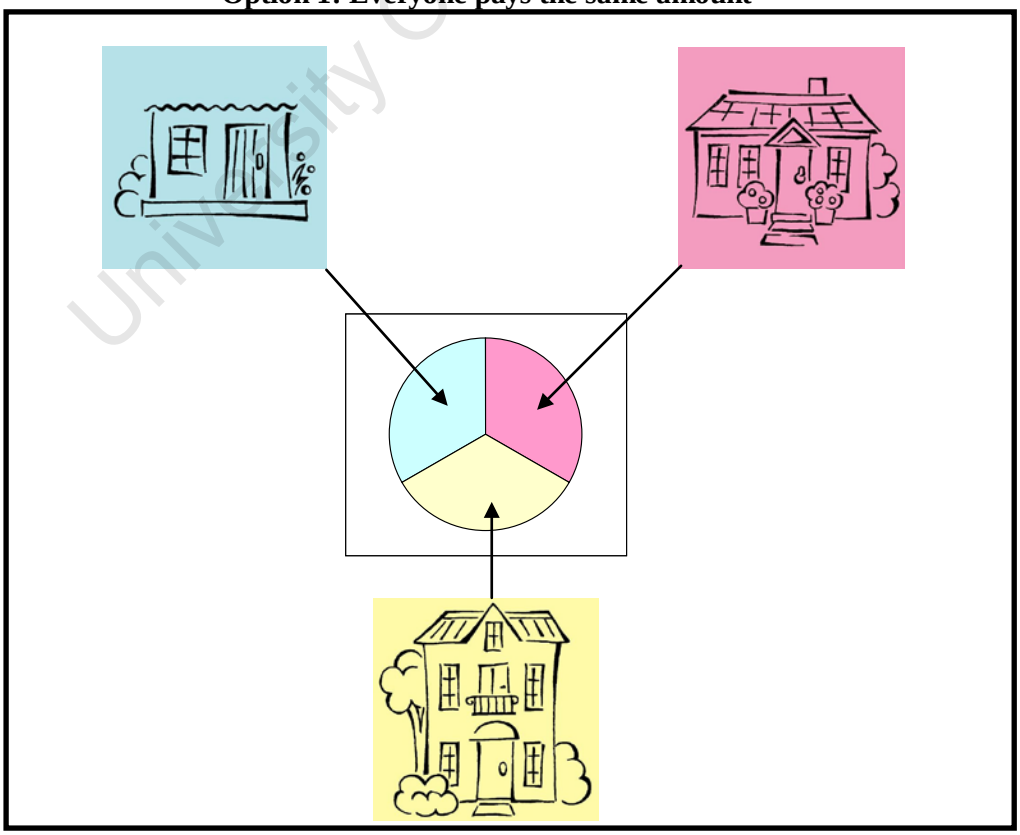
		Satisfactory……..……..3 Fair…….…….....4 Poor…….……..5 Other (Specify)_____96 DK…….……88 NA…….……99	
D 3.47	Would **you visit** this health facility **again** for ANC services?	Yes ……1 No…….…….2 NA……..99	**If 2 skip to D 3.49**
D 3.48	If **yes in D 3.47**, what will be the **main reason** that will make you visit this facility for **ANC** services again?	Good attitude of health staff……1 Cleanliness of the facility……2 Prompt care/treatment……..3 Easy access to doctor/nurse…….4 Other (specify)_____96 NA……..99	**If ANY skip to D 3.50**
D 3.49	What is the **main reason** why you **will not visit** this facility again for ANC services?	Staff were rude/poor manner…....1 Waiting time too long……2 Drugs were not available……..….3 Services were too expensive……..4 Lack of privacy……..5 Staff did not explain treatment…...6 Facility was not clean……7 Did not get to see a Doctor……8 No injection given……9 Other (specify)_____96 NA……..…….....99	
	QUALITY OF CARE (DELIVERY SERVICES) (Do not ask women who are currently pregnant)		
D 3.50	How **satisfied** are you with services given to you during your delivery by this facility?	Very satisfied…..……1 Satisfied…….……...2 Somewhat satisfied……...3 Dissatisfied…….…..…4 Very dissatisfied…….……..…5 Other(specify)_____96 DK…….…..….88 NA……99	
D 3.51	How satisfied were you with the **cleanliness** at the health facility?	Very satisfied……1 Satisfied……2 Somewhat satisfied…….……3 Dissatisfied…….……4 Very dissatisfied…….……....5 Other(specify)_____ 96 DK…….……88 NA…….....99	
D 3.52	How do you **rank the attitude** of health providers during delivery at this facility?	Very good……...……...1 Good……..2 Satisfactory……..3 Fair…….…….....4 Poor…….……..5 Other (Specify)_____96 NA……99	
D 3.53	Would **you visit** this health facility **again** for delivery?	Yes ……1 No…….…….2 NA……99	**If 2 skip to D 3.55**

D 3.54	If **yes in D 3.53**, what will be the **main reason** that will make you visit this facility for **delivery** services again?	Nearness……..……..…1 Quick service……..……..2 Less medical bill……..……3 Less waiting time…..…….…..4 Good quality service…….……..5 Emergency/was taken there…….6 Do not have to pay…….……7 Told to go there by doctor/nurse...8 Told to go there by DHIS……..9 Know care available will help me get better……....10 Know I will be treated respectfully……..11 Other(specify)_____96 NA……99	
D 3.55	What is the **main reason** why you **will not visit** this facility **again** for delivery services?	Staff were rude/poor manner…....1 Waiting time too long……2 Drugs were not available……..….3 Services were too expensive……..4 Lack of privacy……..5 Staff did not explain treatment…..6 Facility was not clean……7 Did not get to see a Doctor…..……8 No injection given…….9 Other (specify)_____96 NA……..……...99	
QUALITY OF CARE (POST NATAL SERVICES) **(Do not ask mothers who are pregnant or whose babies are less than six weeks)**			
D 3.56	How **satisfied** are you with services given by this facility during post natal services?	Very satisfied……1 Satisfied……2 Somewhat satisfied……..3 Dissatisfied……4 Very dissatisfied……..……5 Other(specify)_____96 DK……88 NA……99	
D 3.57	How satisfied were you with the **cleanliness** at the health facility?	Very satisfied……1 Satisfied……2 Somewhat satisfied……...3 Dissatisfied……..4 Very dissatisfied……..……..5 Other(specify)_____96 DK……..88 NA……..99	
D 3.58	How do you **rank the attitude** of health providers during post natal services?	Very good……...……...1 Good……..2 Satisfactory……...……..3 Fair……..…….....4 Poor……..5 Other (Specify)_____96 NA……99	
D 3.59	Would **you visit** this health facility **again** for postnatal services?	Yes ……1 No……..2 NA……99	**If 2 skip to D 3.61**
D 3.60	If **yes in D 3.57**, what will be the **main reason** that will make you visit	Nearness……..……..…1 Quick service……..……..2	**If ANY <u>END</u>**

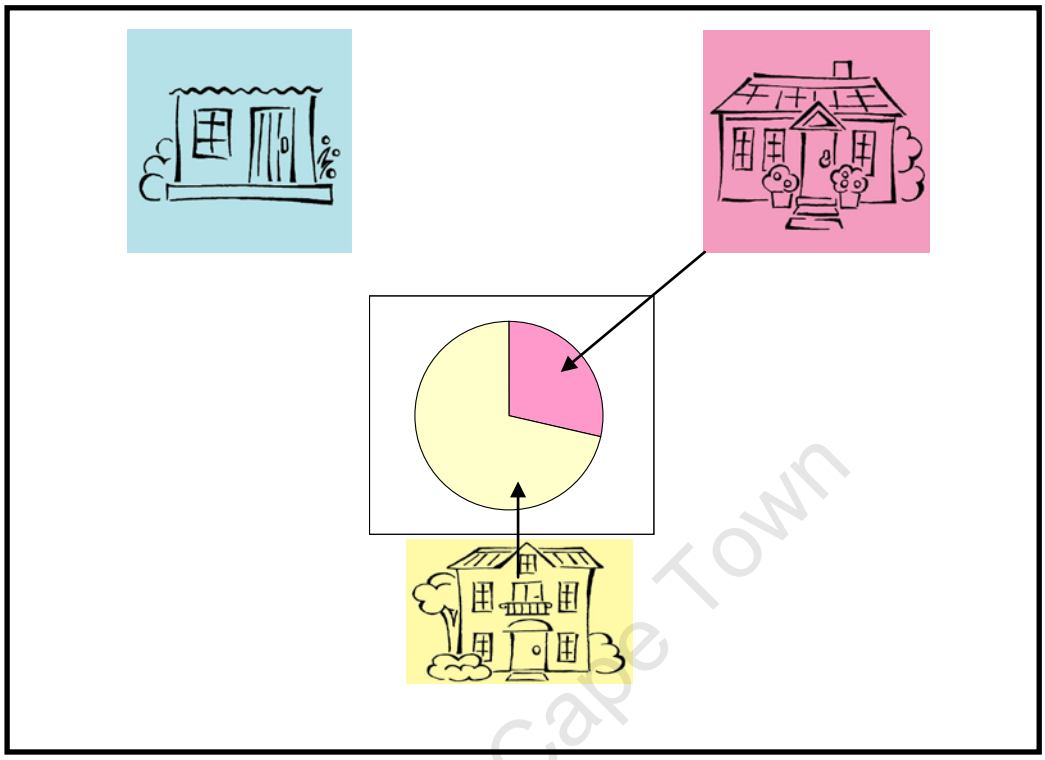
	this facility for **postnatal** services again?	Less medical bill……..……3 Less waiting time…..…….…..4 Good quality service……..……..5 Do not have to pay……6 Told to go there by doctor/nurse...7 Told to go there by DHIS……..8 Know care available will help me get better…….....9 Know I will be treated respectfully.10 Other(specify)_____96 NA……99	**interview**
D 3.61	What is the **main reason** why you **will not visit** this facility again for post natal services?	Staff were rude/poor manner…....1 Waiting time too long……2 Drugs were not available……..….3 Services were too expensive……..4 Lack of privacy……..5 Staff did not explain treatment…..6 Facility was not clean……..……7 Did not get to see a Doctor…….…8 No injection given…….……9 Other (specify)_____96 NA……..……...99	

THANK YOU VERY MUCH FOR YOUR TIME

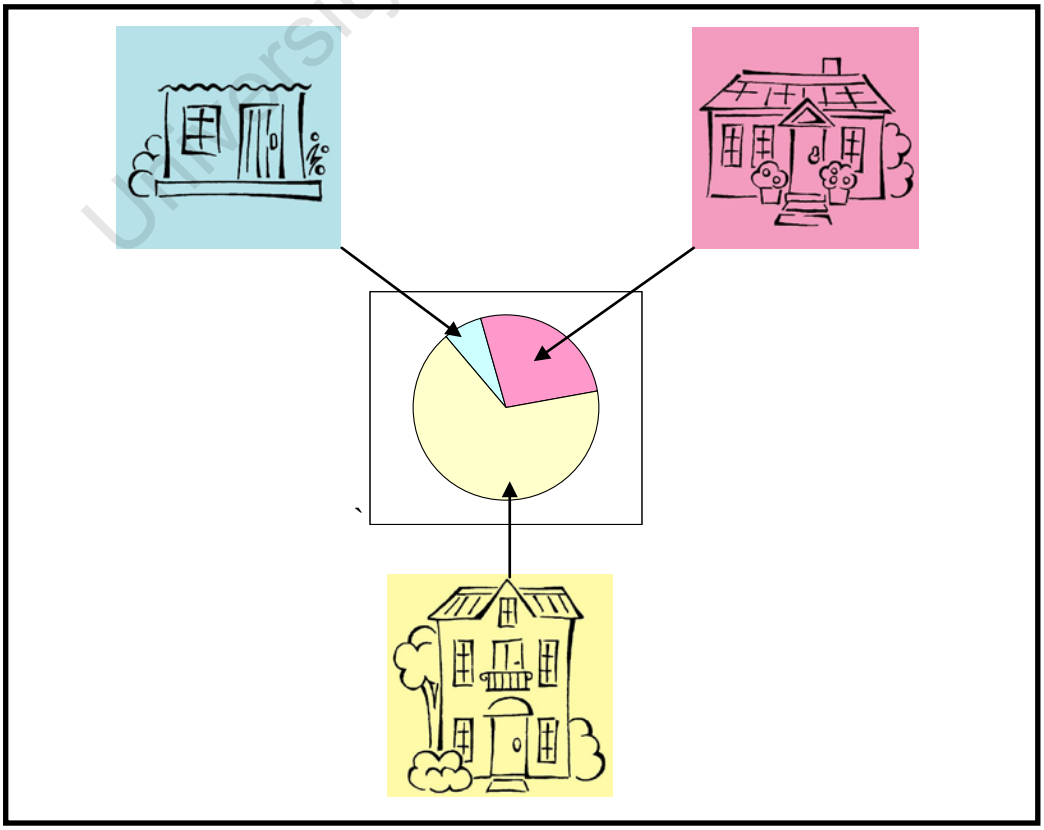
Question H4.61
CARD A: Card on contribution levels to DHIS
Option 1: Everyone pays the same amount



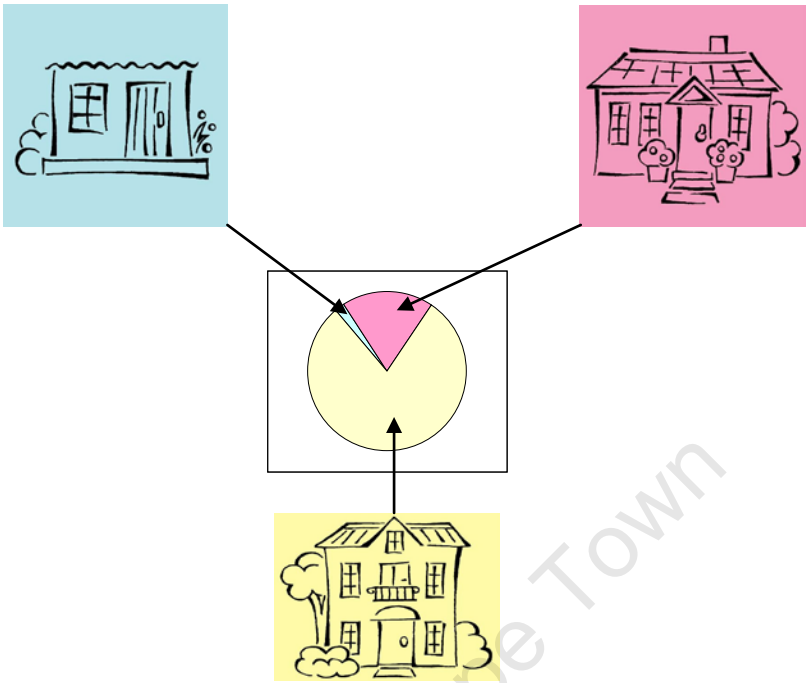
Option 2: The poorest don't have to pay



Option 3: All must pay something, but pay according to their income



Option 4: All must pay something, but the poorest pay very little



Question H 5.19

CARD B: Card on perceived place in socio-economic hierarchy

1	2	3	4	5

Appendix B: Focus Group Discussion guide for insured and uninsured

Focus Group Discussion (FGD) for Un-Insured members

A. Knowledge of the NHIS

1. Do you know about the NHIS?
2. What do you know about it? (*Probe for, Premium, waiting period and the benefit package)*
3. How did you learn about the NHIS?
4. Can you please describe what the NHIS is? How does it work?
5. Do you know why the NHIS was created by the government?
6. Do you know what services are covered by the NHIS?
7. Do you know about the NHIS exemption policy and procedures? If **yes**, how does the exemption system work?

B. Attitudes towards the NHIS

1. Why have you not joined the scheme?
2. What will attract you to join the scheme?
3. What do you think about the NHIS? (**Probe for whether it is Pro-poor**)
4. Any suggestions as to how best the scheme should operate.

C. Utilization of Health Services

1. Where do you go for health services?
2. Can you share some of your thoughts about the services you received from health facilities that participate in the NHIS? (**Probe for experience with staff attitude to clients, waiting time and availability of drugs.**)
3. Do you think you receive better or poorer services at the health facility, compared to NHI members?
4. Are you satisfied with the health facility you use in this district? Why and why not?

D. Community Involvement/ownership

1. Do you know if they hold meetings on the insurance scheme?
2. Have you attended any NHIS meetings since its inception in your area?
3. If yes how many times have you attended such meetings? If **not**, why did you not attend?
4. What are the key things discussed at the meeting(s)?

E. Access to Health Services (Affordability, Availability, Acceptability)

1. Is your non-membership of the NHIS a result of your inability to afford the premium and the registration fees? Why and why not?
2. Is the distance to the registration point a hindrance to you being a member of the scheme? Why and why not?
3. Is the distance to the health facility a hindrance to you being a member of the scheme? Why and why not?
4. Is your non-membership of the NHIS a result of the poor quality of service at the health facility? Why and why not?
5. Is the operation or design of the scheme (i.e. premium collection, level of premium, registration fees, waiting time for cards) a hindrance to you being a member of the scheme? Why and why not?

Focus Group Discussion (FGD) for Un-Insured members

A. Knowledge of the NHIS

1. Do you know about the NHIS?
2. What do you know about it? (*Probe for, Premium, waiting period and the benefit package)*
3. How did you learn about the NHIS?
4. Can you please describe what the NHIS is? How does it work?
5. Do you know why the NHIS was created by the government?
6. Do you know what services are covered by the NHIS?
7. Do you know about the NHIS exemption policy and procedures? If **yes**, how does the exemption system work?

B. Attitudes towards the NHIS

1. Why have you not joined the scheme?
2. What will attract you to join the scheme?
3. What do you think about the NHIS? (**Probe for whether it is Pro-poor**)
4. Any suggestions as to how best the scheme should operate.

C. Utilization of Health Services

1. Where do you go for health services?
2. Can you share some of your thoughts about the services you received from health facilities that participate in the NHIS? (**Probe for experience with staff attitude to clients, waiting time and availability of drugs.**)
3. Do you think you receive better or poorer services at the health facility, compared to NHIS members?
4. Are you satisfied with the health facility you use in this district? Why and why not?

D. Community Involvement/ownership

1. Do you know if they hold meetings on the insurance scheme?
2. Have you attended any NHIS meetings since its inception in your area?
3. If yes how many times have you attended such meetings? If **not**, why did you not attend?
4. What are the key things discussed at the meeting(s)?

E. Access to Health Services (Affordability, Availability, Acceptability)

1. Is your non-membership of the NHIS a result of your inability to afford the premium and the registration fees? Why and why not?
2. Is the distance to the registration point a hindrance to you being a member of the scheme? Why and why not?
3. Is the distance to the health facility a hindrance to you being a member of the scheme? Why and why not?
4. Is your non-membership of the NHIS a result of the poor quality of service at the health facility? Why and why not?
5. Is the operation or design of the scheme (i.e. premium collection, level of premium, registration fees, waiting time for cards) a hindrance to you being a member of the scheme? Why and why not?

THANK YOU FOR YOUR TIME

Appendix C: Indepth interview guide for DHIS managers

IDI with District Scheme Mangers

1. Name, Educational qualification, No of years with the scheme, name of scheme, region

2. How does the scheme operate? Probe for registration period, specify months of the year when registration is under taken.
- ♦ What is the current premium level?
- ♦ Do different people pay different premiums? Can you give me specific examples and what is the basis for the different premiums?
- ♦ What is the criterion for granting exemptions in this district? Are there other mutual health insurance scheme(s) (private mutual and private commercial) in this district?

3. Is there a range of premiums payable in your district? What is the reason for the range?
- ♦ How do you identify different income groups especially for those in the informal sector? What is the average payment?
- ♦ How are premiums collected? ***(Probe for payment upfront or instalment basis***).
- ♦ Are exempt categories issued with the same type of insurance cards? Why and why not?

4. Are there challenges with regards to the issuance of cards?
- ♦ What are the problems and how do you envisage solving this?
- ♦ What is the average waiting period between registration and issuance of insurance card?

5. W hat checks do you put in place for providers' claims for reimbursement?
- ♦ On average how long does it take to reimburse them?
- ♦ In your opinion, are there delays in the reimbursement process?
- ♦ What do you think accounts for the delays in reimbursement to service providers?

6. What are the processes and indicators you use to identify the poor to be exempted?

7. How is the DHI funded? (Sources of funding).
- ♦ Do you get funding from the NHIS headquarters (from National Health Insurance Fund-NHIF)?
- ♦ How are funds transferred from NHIF meant for (*Probe: cross-subsidisation, SSNIT members, indigents, exempt group, administrative issues*). What can you say about the funding support from NHIF (adequacy and timing)?
- ♦ What other funding sources are available to the scheme?

8. How do you ensure that clients are getting the monies worth of services (ensuring purchasing of adequate and qualitative services from providers)

9. Have you had supervisory visits or monitoring from NHIS headquarters? (Probe: What are the purpose of these visits or why no visits)

10. Has the scheme got mass support from the populace in general (if yes, why enrolment is not more than what it is now and if no why?)

11. What in your opinion can be done to ensure the sustainability of the scheme?

12. What is your opinion about the benefit package (adequate, inadequate and why?)

13. How does the community participate in the running of the scheme? Do you have a Board? Is the board active (how?).

- What has the Board done to support the scheme?

14. What are the challenges (registration, logistics, satisfaction of clients, attitude of your staff, administrative, etc) you are facing and what can be done to tackle them?

15. Anecdotal information has it that registration agents collect bribes from people to register them as indigents so that they can exempted-is this a problem in your scheme. If this is true, how have you dealt with it or how will you deal with it?

- Do you know of other schemes that have encountered this problem or similar problems?

THANK YOU FOR YOUR TIME

Appendix D: Indepth interview guide for NHIS headquarters

A. Perception of NHIS

1. What are your perceptions about the NHIS?
   - ♦ Is it a pro-poor financial arrangement?
   - ♦ Why do you say it is (or not) a pro-poor financial arrangement?
2. What is the major health problem (among the health problems) that NHIS stands to address? (If malaria, why?)

B. Premiums and registration fees

3. Do you think Ghana is in a position to sustain this NHIS? (why or why not)
4. You propose a sliding scale payment of premiums according to ATP, is it the case? (If YES how effective is its implementation and if NO why?)
5. Are there variations in the amount of premium levels among districts (If YES is this acceptable?)
6. How does the premium affect the number of people who enroll in the scheme?
7. Who determines how much should be charged as registration fee?
8. What is the purpose of the registration fee and are there variations in the registration fee charged among districts (If YES is this acceptable?)
9. What is your opinion about the timing of premium collections in the districts (is it appropriate, why or why not?)

C. Waiting time and support for scheme

10. What is the average waiting period (after payment and being able to access health care), how does this affect enrolment especially among the poor?
11. Has the scheme got the mass support from the populace in general (if yes, why enrolment is not more than what it is now if no why)?
12. Does the scheme also enjoy support (financial) from International organizations? (If high donor support, how sustainable is NHIS if donor pool out?)
13. Can those on payroll opt out of the NHIS (why or why not)?

D. Monitoring

14. How do you monitor the performance of the DHIS (the criteria used to monitor)?
    - ♦ What are the indicators of good or poor performance of a DHIS
    - ♦ What is the reward for good performing DHIS and how do you support poor performing DHIS to improve on their performance?
    - ♦ How do you check the authenticity of exempted list from DHIS?
    - ♦ What are the criteria for exemptions?

E. Subsidy and benefit package

15. Do you support the DHIS with subsidy? (How is this done? money to cover SSNIT contributors at the district level or subsidy for indigents?)
16. How is the subsidy to the DHIS arranged (through need based, historical basis)?
17. Timing of subsidy (how early are DHIS subsidized?)
18. What do the DHIS need to do to enable them get the subsidy quickly?
19. How are the DHIS suppose to use the subsidy? (accountability of the subsidy)
20. Do you extend subsidy to Private Voluntary and Commercial Health Insurance Schemes? (Why or why not?)
21. What is your opinion about the benefit package (adequate, inadequate and why?)
22. So far what is the percentage of enrolment of the country and is this what was anticipated (are you on target and if not on target why)?
23. What are your views on how NHIS could be restructured to make it possible for more people especially the low income groups to join?

F. Challenges of the scheme

24. What are the challenges facing the NHIS?
25. What can be done to tackle these challenges?

G. Operation of NHIS (questions for the executive secretary of the NHIS)

26. When did NHIS start operating? (month and year)
27. What is the organizational structure of the NHIS and what are the various roles and responsibilities of the sub-structures of NHIS?
28. How does the NHIS collaborate with GHS and MOH in the financing and delivery of health services? (how adequate is this relationship and what can be done to strengthen the collaborations)
29. Is NHIS independent from political interferences? (How independent and if is not independent why?)
30. How is the NHIC formed (who appoints and based on what criteria?)
31. What are the duties of the NHIC and how effective have they performed these roles and responsibilities so far?
32. What is the objective of NHIF and how does NHIF work? (Re-insurance and risk equalization roles and how effective NHIF performed these roles)

THANK YOU VERY MUCH FOR YOUR COOPERATION AND TIME!

Appendix E: Consent forms for all interviewees

Consent form for SHIELD household survey

HEALTH RESEARCH UNIT
GHANA HEALTH SERVICE

CONSENT FORM
Equity in health care financing

Household Survey-Heads of household

Purpose: The Health Research Unit of the Ghana Health Services is carrying out this study with the aim of understanding the existing health care system differences and looking at the difficulties of health care payments at the household level and also looking at the causes of the difficulties of health care payments in Ghana. Information that will be obtained from this study will help policy makers in the formulation of suitable and fair policies for a more effective and fair health care payments system that will impact positively on major diseases like malaria. This study is also part of a PhD thesis of James Akazili, a Ghanaian and student of the University of Cape Town-South Africa. Issues that would be discussed with you include socio-economic and demographic characteristics, health seeking behaviour and health care payments, health insurance enrollment, household characteristics, household consumption and expenditure, and household assets.

Procedures: You are being asked to participate in an interview, which will take about 1½ hrs to 2hrs. I will be asking you questions related to the purpose of the study outlined above over a month recall period. There are no correct answers to these questions. You are free to answer or not to answer.

Risks and discomforts: The risks to you for participating in this study are minimal. However, some of the issues that may be discussed are of a personal and sensitive nature. If at any time you do not want to answer questions, you are not obliged to do so.

Benefits: Your participation in this study may not benefit you directly, but it may benefit your household and community in the future.

Confidentiality: We do not intend to ask you about your very personal private issues. You should not feel under any obligation to answer all these questions. On the other hand, if you do wish to share your personal experiences for any reason, feel free to do so, the research team will ensure absolute confidentiality in whatever information you will provide. Your name or that of members of your household will not be mentioned on any written document. Nobody will be able to trace anything we discuss back to you.

Right to refuse or withdraw: Before our discussion, please understand that your participation in the study is voluntary. You do not need to answer questions or to participate in the research if you do not want to. You can stop participating in this study at any time without losing any benefit from any health facility.

Do you have any questions?
Do you agree to participate in this study?

If at any time following this interview you have any questions or would like to speak to someone involved in this study, please feel free to contact the following persons:

James Akazili (Principal Investigator)
Navrongo Health Research Centre
Ghana Health Service

Prof. Diane McIntyre (Supervisor)
Health Economics Unit
Faculty of Health Sciences

P.O. Box 114
Navrongo, Upper East Region
Ghana
Tel +233 244834435
akazjames@yahoo.com

Anzio Road, Observatory 7925
University of Cape Town
South Africa
Tel: +27 824962345
dimc@iafrica.com

Statement of consent

I have read all of the above or I have had all of the above read and interpreted to me, asked questions and received answers concerning areas I did not understand and I am willing to participate in this study. I would not have waived any of my rights by signing/thumb printing this consent form.

Name of respondent_____

Signature/thumbprint_____

Certification of individual seeking consent

I certify that I have explained to the individual the nature and purpose of this study. I have answered all questions that have been raised and I have witnessed the above signature/thumbprint on the date indicated below.

Name of individual obtaining consent:_____

Signature:_____Date:_____

Witness' Statement

I have witnessed the verbal presentation of the information summarized on this form to the respondent. The respondent has had a chance to ask questions.

Name of witness: _____

Signature:_____Date:_____

Consent form for FGD (Insured and uninsured members)

FGD-Community members

Purpose: The Health Research Unit of the Ghana Health Services is carrying out this study with the aim of understanding the existing health care system differences and looking at the difficulties of health care payments at the household level and also looking at the causes of the difficulties of health care payments in Ghana. Information that will be obtained from this study will help policy makers in the formulation of suitable and fair policies for a more effective and fair health care payments system that will impact positively on major diseases like malaria. This study is also part of a PhD thesis of James Akazili, a Ghanaian and student of the University of Cape Town-South Africa. Issues that would be discussed with you include socio-economic and demographic characteristics, health seeking behaviour, health insurance enrollment, household characteristics, household expenditure, and household assets.

Procedures: You are being asked to participate in a group discussion which will take about 1½ hrs. I will be asking you questions related to the purpose of the study outlined above over a month recall period. There are no correct answers to these questions. You are free to answer or not to answer.

Risks and discomforts: The risks to you for participating in this study are minimal. However, some of the issues that may be discussed are of a bit personal and sensitive nature. If at any time you do not want to answer questions you are not obliged to do so.

Benefits: Your participation in this study may not benefit you directly, but it may benefit your household and community in the future.

Confidentiality: We do not intend to ask you about your very personal matters and you should not feel under any obligation to answer all these questions. On the other hand if you do wish to share your personal experiences, the research team will ensure absolute confidentiality. Your names will not be mentioned on any written document. Nobody will also be able to trace anything we discuss back to you.

Right to refuse or withdraw: Before our discussion, please understand that your participation in the study is voluntary. You do not need to answer questions or to participate in the research if you do not want to. You can stop participating in this study at any time and will not face any sanctions or denied any treatment at a health facility.

Do you have any questions?
Do you all agree to participate in this study?

If at any time following this interview you have any questions or would like to speak to someone involved in this study, please feel free to contact the following persons;

James Akazili (Principal Investigator)
Navrongo Health Research Centre
Ghana Health Service
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dimc@iafrica.com

Statement of consent

I have read all of the above or I have had all of the above read and interpreted to me, asked questions and received answers concerning areas I did not understand and I am willing to participate in this study. I would not have waived any of my rights by signing/thumb printing this consent form

Name of respondent_____Signature/thumbprint_____

Name of respondent_____Signature/thumbprint_____

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Name of respondent_____Signature/thumbprint_____

Name of respondent_____Signature/thumbprint_____

Name of respondent_____Signature/thumbprint_____

Name of respondent_____Signature/thumbprint_____

Certification of individual seeking consent

I certify that I have explained to the individual the nature and purpose of this study. I have answered all questions that have been raised and I have witnessed the above signature/thumbprint on the date indicated below.

Name of individual obtaining consent:_____

Signature:_____Date:_____

Witness' Statement

I have witnessed the verbal presentation of the information summarized on this form to the respondent. The respondent has had a chance to ask questions.

Name of witness: _____

Signature:_____Date:_____

Consent form for in-depth interview of DHIS managers

In-depth Interview (IDI)-District scheme managers

Purpose: The Health Research Unit of the Ghana Health Services is carrying out this study with the aim of understanding the existing health care system inequities and evaluating the burden of health care financing and the factors influencing the incidence of health care financing with emphasis on the national health insurance in Ghana. Information obtained from this study will help policy makers in the design of appropriate and more equitable policies on the implementation of an effective and equitable health insurance scheme that will impact positively on major diseases like malaria. This study is part of broader project [Strategies for Health Insurance for Equity in Less Developed countries (Ghana, South Africa, Tanzania)-SHIELD] and a PhD thesis of James Akazili, a Ghanaian and a student of the University of Cape Town-South Africa. Issues that would be discussed with you include contribution rates, structure, and timing of premium collections, waiting period, quality of care, provider payment mechanisms, reimbursement, implementation challenges at the district level and how to overcome the challenges and make the DHI more equitable. Data on enrolment levels; amount of premium and registration fees collected and disbursement will also be required from you.

Procedures: You are being asked to participate in an interview, which will take about 1½ hrs to 2hrs. I will be asking you questions related to the DHI and how it can be made more pro-poor by expanding coverage. There are no right or wrong answers to these questions.

Risks and discomforts: The risks to you for participating in this study are minimal. If at any time you do not want to answer questions you are not obliged to do so.

Benefits: Your participation in this study may not benefit you directly, but may benefit the district and the entire country in the future.

Confidentiality: We do not intend to ask you about your personal private matters or private issues, and you should not feel under any obligation to answer all these questions. On the other hand if you do wish to share your personal experiences, the research team will ensure absolute confidentiality. Your name will not be mentioned on any written document.

Right to refuse or withdraw: Before our discussion, please understand that your participation in the study is voluntary. You do not need to answer questions or to participate in the research if you do not want to. You can stop participating in this study at any time.

Do you have any questions?
Do you agree to participate in this study?

If at any time following this interview you have any questions or would like to speak to someone involved in this study, please feel free to contact the following persons;

James Akazili (Principal Investigator)
Navrongo Health Research Centre
Ghana Health Service
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Faculty of Health Sciences
Anzio Road, Observatory 7925
University of Cape Town
South Africa
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Statement of consent

I have read all of the above or I have had all of the above read to me, asked questions and received answers concerning areas I did not understand and I am willing to participate in this study. I would not have waived any of my rights by signing this consent form.

Name of respondent_____

Signature_____

Certification of individual seeking consent

I certify that I have explained to the individual the nature and purpose of this study. I have answered all questions that have been raised and I have witnessed the above signature on the date indicated below.

Name of individual obtaining consent:_____

Signature:_____Date:_____

Witness' Statement

I have witnessed the verbal presentation of the information summarized on this form to the respondent. The respondent has had a chance to ask questions.

Name of witness: _____

Signature:_____Date:_____

Consent form for in-depth interview of NHIS headquarters

In-depth Interview (IDI)-Officials of NHIS at headquarters

Purpose: The Health Research Unit of the Ghana Health Services is carrying out this study with the aim of understanding the existing health care system inequities and evaluating the burden of health care financing and the factors influencing the incidence of health care financing with emphasis on the national health insurance in Ghana. Information obtained from this study will help policy makers in the design of appropriate and more equitable policies on the implementation of an effective and equitable health insurance scheme that will impact positively on major diseases like malaria. This study is part of a broader project [Strategies for Health Insurance for Equity in Less Developed countries (Ghana, South Africa, Tanzania)-SHIELD] and a PhD thesis of James Akazili, a Ghanaian and a student of the University of Cape Town-South Africa. Issues that would be discussed with you include contribution rates, structure, and timing of premium collections, waiting period, quality of care, provider payment mechanisms, reimbursement, sustainability of the scheme, implementation challenges and how to overcome the challenges and make the NHIS more equitable. Data on enrolment levels, sources of financing of the NHIS and amount of subsidy to various DHISs will also be collected.

Procedures: You are being asked to participate in an interview, which will take about 1½ hrs to 2hrs. I will be asking you questions related to the NHIS and how to position it to achieve universal coverage by rapidly expanding coverage to the informal sector. There are no correct or wrong answers to these questions.

Risks and discomforts: The risks to you for participating in this study are minimal. If at any time you do not want to answer questions you are not obliged to do so.

Benefits: Your participation in this study may not benefit you directly, but it may benefit the entire country in the future.

Confidentiality: We do not intend to ask you about your personal private matters or private issues, and you should not feel under any obligation to answer all these questions. On the other hand if you do wish to share your personal experiences, the research team will ensure absolute confidentiality. Your name will not be mentioned on any written document. Nobody will also be able to trace anything we discuss back to you.

Right to refuse or withdraw: Before our discussion, please understand that your participation in the study is voluntary. You do not need to answer questions or to participate in the research if you do not want to. You can stop participating in this study at any time.

Do you have any questions?
Do you agree to participate in this study?

If at any time following this interview you have any questions or would like to speak to someone involved in this study, please feel free to contact the following persons;

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Name of respondent_____

Signature_____

Certification of individual seeking consent

I certify that I have explained to the individual the nature and purpose of this study. I have answered all questions that have been raised and I have witnessed the above signature on the date indicated below.

Name of individual obtaining consent:_____

Signature:_____Date:_____

Witness' Statement

I have witnessed the verbal presentation of the information summarized on this form to the respondent. The respondent has had a chance to ask questions.

Name of witness: _____

Signature:_____Date:_____

Appendix F: Table showing some indices use to measure inequities

Indices		definition	strengths	weakness
1	Range ratio	-express a magnitude of quantities relative to each other -ratio of two quantities indicates how many times the first quantity is contained in the second	-very simple to apply and understand	-limited in used because it does not go beyond simple comparisons of quantities -Takes no account of the sizes of the groups being compared and this can lead to misleading results
2	Lorenz curve	-a graphical representation of the cumulative distribution function of the empirical probability distribution of wealth	-**Simple and easy to comprehend**	-Quite limited because certain variables such as age and other household dynamics are not factored into measurement
3	Gini coefficient	Is a ratio of the area that lies between the line of equality and the Lorenz curve	-Can be used to generate a single summary statistic of the income distribution	-Lorenz curve may understate the actual amount of inequality if richer HHs use income efficiently than lower income HHs and vice versa
4	Concentration curve	-twice the area between the concentration curve, and the line of equality (the 45º line running from the bottom-left corner to the top-right)	- it takes account of the socio-economic dimension of inequality in health (unlike the Gini coefficient for example - It reflects the experience of the entire population rather than two extreme groups on the socio-economic scale	-has the disadvantage of lacking a straightforward interpretation -it can yield the same correlation given two populations with different health gradients across socio-economic groups
5	Slope index	A linear regression that shows the relation between the level of health or the frequency of a health problem in each socio-economic category and the hierarchical ranking of each socioeconomic category on the social scale	-A reliable measure used to reflect the socioeconomic dimension to inequalities in health	-sensitive to the mean health status of the population

6	Robin Hood index (Pietra ratio)	-is the proportion of money to be transferred from the rich to the poor to achieve equality	-conceptually it is one of the simplest measure of inequality	-Unlike other measures Robin Hood index does not incorporate a sensitivity parameter
7	Suit Index	-Unlike Kakwani index Suits' index is based on relative concentration curves -It plots the cumulative proportion of pre-tax income against the cumulative proportion of pre-tax income rather than the cumulative proportion of population (as in Kawkani index)	The overall index fr a tax system consisting of two or more taxes is a weighted average of the indices for the individual taxes.	-Because of life time income smoothing, consumption is a better measure which is not considered in Suits' index -Gives greater weight to departures from proportionality that occur among higher income groups than lower income groups