



Making financial markets work for the poor

Literature review on health microinsurance schemes

Report for FinMark Trust

18/06/2014



Draft report 18/06/2014

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Acknowledgements:

The author would like to thank Roseanne da Silva and Janice Angove (Wits University) for their guidance, as well as David Saunders (Cenfri), Jeanna Holtz (ILO Microinsurance Innovation Facility), Rick Koven (Microinsurance Center), Kumar Shailabh, Nancy Ampah (NMH in Ghana) and others who provided valuable inputs and information.

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Abbreviations

ARI	Acute respiratory infection
BPL	Below the poverty line
CBHF	Community-based health financing
CBHI	Community based health insurance
Cenfri	Centre for Financial Regulation and Inclusion
CIDR	Centre International de Développement et de Recherche
COTU	Congress of Trade Unions
CR	Contributory Regime (Colombia)
CS	Caesarean Section
CTC	Scientific Technical Committee (Colombia)
DALY	Disability-adjusted life year
DMHIS	District Mutual Health Insurance Schemes (Ghana)
EAC	East African Community
EPS	<i>“Empresas Promotoras de Salud”</i> ; Health promoting entity in the contributory regime
EPSS	<i>“Empresas Promotoras de Salud”</i> ; Health promoting entity in the subsidised regime
FFS	Fee for service
FMT	FinMark Trust
FOSYGA	Solidarity and Guarantee Fund; <i>“Solidarity and Guarantee Fund (El Fondo de Solidaridad y Garantía”</i> (Colombia)
GDP	Gross Domestic Product
G-DRG	Ghana Diagnosis-related Group
GNEMHO	Network of Mutual Health Organizations of Ghana
HMI	Health Microinsurance
HMO	Health Management Organisations
ILO	International Labour Organisation
IP	Inpatient
IRA	Insurance Regulatory Authority
IPS	Healthcare providers; <i>“Instituciones Prestadoras de Servicios”</i> (Colombia)
IRDA	Insurance Regulatory and Development Authority (India)
JBHI	Jamii Bora Health Insurance
JSY	Janani Suraksha Yojana
KCBHFA	Kenya Community Based Healthcare Financing Association
KEPH	Kenya Essential Package for Health
KTDA	Kenya Tea Development Agency
LMIC	Low and Middle Income Countries
MBP	Mandatory Benefit Package
MDGs	United Nations Millennium Development Goals
MFI	Microfinance Institution
MILK	Microinsurance Learning and Knowledge
MIN	Microinsurance Network
MIPs	Medical insurance providers (Kenya)
MOHFW	Ministry of Health and Family Welfare
NCDs	Non-communicable diseases
NGO	Non-Government Organisation
NHIF	National Health Insurance Fund (Kenya)
NHIA	National Health Insurance Authority (Ghana)
NHIC	National Health Insurance Council (Ghana)
NHIL	National Health Insurance Levy (Ghana)
NIC	National Insurance Commission (Ghana)
NPCDCS	National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke
NRHM	National Rural Health Mission (India)

NSSO	National Sample Survey Organization
OECD	Organisation for Economic Co-operation and Development
OOPs	Out-of-pocket payments
OP	Outpatient
PACS	Primary Agriculture Cooperative Societies
PAHO	Pan American Health Organization
PHI	Private Health Insurer
RAHA	<i>Raigarh Ambikapur Health Association</i>
RSBY	Rashtriya Swasthya Bima Yojana
SEWA	Self Employed Women's Association
SGSSS	General System of Social Security in Health (Colombia)
SMEs	Small and Medium Enterprises
SISBEN	Selection System of Beneficiaries for Social Programs (Colombia)
SOGC	Quality Assurance System " <i>Sistema Obligatorio de Garantía de la Calidad</i> "
SR	Subsidized Regime (Colombia)
SSNIT	Social Security and National Insurance Trust (Ghana)
THE	Total health expenditures
WHO	World Health Organisation
YLDs	Years living with disability
YLLs	Years of life lost

Executive summary

One of the problems often found in health microinsurance (HMI) ventures is a lack of data on which to base premium determination. This study of published articles and data from other studies, investigated the usefulness of available data as a basis for developing a pricing model to assist those who wish to provide prepaid health insurance products to low-income markets. It is hoped that such a tool will reduce the product-development and pricing costs associated with setting up a HMI product.

For this purpose, four countries were selected that we believe are largely representative of more than 80% of the world's developing nations. These countries are Kenya, Ghana, Colombia and India. We then reviewed published material that we could use to see what has been done in these countries to make health insurance available to below poverty line (BPL) families, looking at public, private and community level initiatives. We then tried to identify useful commonalities in respect of the risk factors that contribute to the high level of failures in HMI as well as the factors that may be useful in formulating a pricing model.

This study therefore looked at the various public, private and community schemes that provide access to healthcare in the study countries with a focus on membership, benefits, contributions, service delivery, proportion of costs covered and out-of-pocket expenses. In spite of their efforts, we find that in all four countries health insurance has so far largely failed to become sustainable without external subsidies, even though most of the available covers continue to focus only on inpatient benefits. These countries are experiencing significant challenges with regard to penetration of prepaid healthcare and persistently high levels of out-of-pocket payments.

We then analysed the key cost drivers, looking at claims experience, causes and incidence of claims and tried to identify common features between the different countries. Here we find that in all four countries, there is a high level of common communicable diseases as well some similarity in the incidence of the events that have an impact on the need for treatment. As expected, the cost of treatment is strongly influenced by the location of the point of treatment, for example urban areas are more costly than rural. Surprisingly we also find that in some cases, public district hospitals can be more expensive than other facilities and that private for-profit healthcare facilities play an important role in providing access to healthcare for the poor (*Flessa et al, 2011*).

We also looked at issues such as product design and provider network management. In this regard we find that although the most pressing need for BPL families is to transfer the risk of outpatient events, most schemes currently offer only inpatient benefits, which contributes to high levels of out-of-pocket expenses.

Successful health financing depends on prudent design of resource collection, pooling and purchasing. One of the critical purchasing design issues is the provider payment mechanism and the remuneration rates, which need to set appropriate incentives to health providers (*Mathauer, 2011*). In this regard, the lack of common standards for diagnosis and treatment complicates tariff setting which contributes to high costs of claims management. Pooling and

purchasing are issues that impact strongly on cost certainty and bringing about common standards will play an important role in enabling more sustainable HMI developments.

Further study will be required in some areas, particularly in respect to formulating a basic basket of treatment for the most commonly found outpatient and inpatient events that can be used for indexing a basic tariff guideline. However, overall, we believe that sufficient common areas exist that allow for the development of a pricing tool for health microinsurance.

Section 1.5 provides an overview of the structure of this report for ease of reference.



1. Section 1: Rationale and approach

1.1. Background

Health insurance is one of the most widely sought after microinsurance products in many regions of the developing world. However, most health insurers have struggled to achieve sustainability without public or donor support. Lack of data and expertise to develop an appropriate pricing model for health microinsurance is a significant contributing factor to the limited success of health microinsurance schemes. These schemes usually have limited or no trained resources to price and monitor program solvency, and no sound information on the frequency and severity of covered medical care services to guide their risk managers. Another important factor is the formation and management of healthcare provider networks.

FinMark Trust (FMT) commissioned this report as a literature review of current practice in the field of health microinsurance in selected regions around the world (henceforth referred to as HMI). It is hoped that the experience in these regions will help to set out a best-practice approach for health microinsurance pricing and management that incorporates the lessons learned.

1.2. Objectives and challenges for this study

There are four principles that an actuary must follow in setting the premium rate of health insurance products: adequacy, reasonableness, competitiveness and equity. The annual claim cost for particular products should therefore be estimated. This is based on the expected frequency of claims and the amount of the average claim, which is informed by the events that are most likely to cause claims and the trend in the likelihood of such events taking place. The cost of management is another important aspect for which the premium of any insurance product must provide. This is even more important in respect of HMI, due to the low premium levels of HMI products and the administrative burden that is caused by high volumes of health insurance claims.

Health insurance is a link in a complex healthcare value chain, and the challenges that the health system as a whole faces must be accounted for in product design and premium setting. This study focuses more specifically on data that can assist in accounting for the risk of incurring treatment costs in the premium setting exercise for HMI.

It has been extremely difficult to obtain sufficient reliable HMI data from health insurers and HMI companies, due to the lack of data availability and experience. The lack of data results from a number of factors, such as:

- Health insurance has only started being viewed as a separate class of insurance business in recent years. Previously, any data in respect of health insurance was often aggregated with personal accident insurance. Few private (commercial) insurers that have ventured into HMI have continued to offer this type of insurance due to the unsustainability of the results that they have had.
- Health insurance analytics was previously not seen as a priority, and investment in management information systems has been lacking.

This project was therefore launched with the objective of collecting suitable data on a global scale to enable the development of a pricing tool for HMI that will enable more sustainable health insurance products to be developed to meet the un-met demand for affordable health insurance in emerging markets.

A broad range of people and institutions who are involved in health insurance and HMI world-wide were approached for assistance in obtaining experience data on health insurance programmes in general and HMI programmes in particular.

Unfortunately only one health insurer responded positively and insufficient data was obtained from previous studies. As a result, it was decided to change the focus of this study to collect data from published sources and to collate this into a format that may be used as a first step in the development of more effective price setting for HMI.

1.3. Data collection

Designing valuable, sustainable HMI products is inherently more complex than for other types of microinsurance. The design and pricing of HMI products requires a holistic view of the key components of the healthcare value chain – demand, financing and administration as well as the delivery of healthcare services. Numerous studies and articles have emphasised both the need for and the lack of meaningful data that is available to inform this process (*Ahmed et al, 2005; ILO, 2005; Dror D, 2001 & 2009; Morgan & Meerschaert, 2010; Wipf et al, 2010*).

Some of these studies have advocated a number of different approaches (such as through surveys and focus groups) to the collection of data as the starting point for premium determination in HMI. However, such data collection is inevitably bound to be based on small samples and often embeds failures that exist within the health systems of the target markets into the design and pricing of programmes. The limited success of HMI programmes everywhere is probably a reflection that the approach to premium setting needs to be reviewed.

The choice of a health insurance plan and the extent to which households become involved are driven by the characteristics of the plan itself, and the personal, household and community characteristics of the individual making the choice. The characteristics of the insurance plans involve the type of medical services offered, the degree of freedom to choose providers and the extent of compensation given, the quality of care given by the chosen provider and perceived credibility of the insurer (*Shaw and Ainsworth, 1995*). The extent to which the interests of the insured, the insurer and the service provider can be kept aligned must therefore also be an important element in the pricing of HMI programmes.

This report therefore focuses on key elements of health insurance risk that can practically be taken into account in price setting, and to explore the extent to which open sources of relevant data can be used to a greater extent to develop a more consistent approach for the process of premium determination for HMI.

The findings presented in this paper are from a review of published data, mainly in respect of the following countries:

- i. Kenya
- ii. Ghana
- iii. India
- iv. Colombia

In each of these countries, those at the bottom of the income pyramid represent a significant proportion of the population. Furthermore, Figure 1 shows that these countries largely share a similar climate and environmental burden of disease, as is defined by a tropical location. They also share challenges of inadequate health systems that are common to emerging market economies.

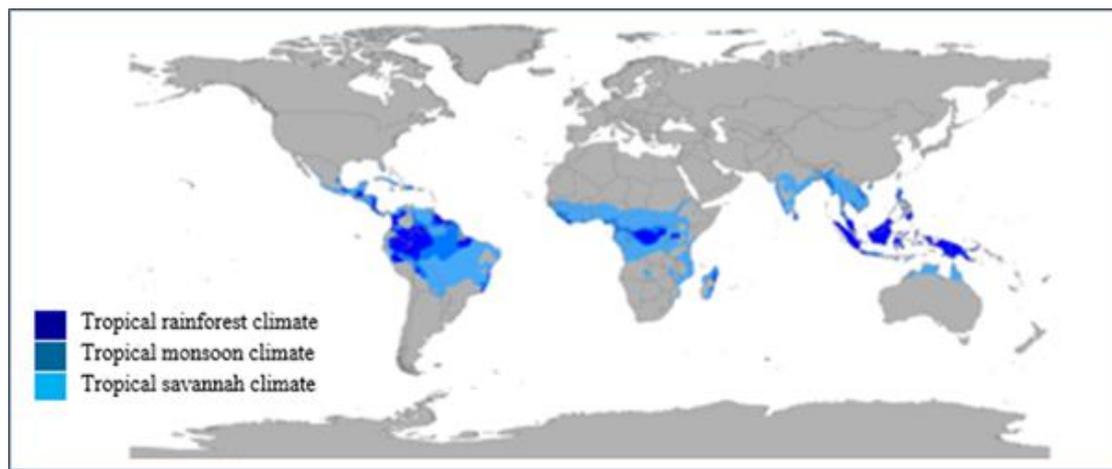


Figure 1: Emerging market countries in a tropical climate

Source: http://en.wikipedia.org/wiki/File:Koppen_World_Map_Af_Am_Aw.png

These countries have been at the forefront of experiments with HMI and have been widely studied. It was therefore more likely that representative data would be available for this study.

Numerous organisations that are involved with microinsurance were approached in order to obtain data for this study. This included people and institutions that collaborate with the International Labour Organisation (ILO), the microinsurance working group of the International Actuarial Association, a number of Non-Government Organisations (NGOs), as well as insurers that have had exposure to health microinsurance in Africa, Latin America and Asia.

Very limited data was obtained in this way, which will generally be more useful to compare general experience from published sources with experiences of specific schemes. In addition to these direct approaches, more than 300 websites, articles, surveys and other reports, that are available on the Internet, were consulted and reviewed and information gathered in this way, form the basis of this report.

1.4. Health risk indicators

Health insurance is a mechanism for spreading the risks of incurring health care costs over a group of individuals or households. This definition is only concerned with the outcome of risk sharing and subsequent cross-subsidisation of health care expenditures among the

participants and not on the nature of the administrative arrangements (*Arhin-Tenkorang, 2001*).

Health risks in this context can be seen as factors that raise the probability of adverse health outcomes. The number of such factors are countless, but five risk factors are responsible for one quarter of all deaths in the world: childhood underweight, unsafe sex, alcohol use, unsafe water and sanitation, and high blood pressure (*Kenya Health Policy Framework, 1994 – 2010*). A scheme sponsor (insurer, community, employer etc.) will also incur the potential cost of a number of risks that are unrelated to health outcomes. Although these are not the main focus of this study, some comments will be made about the way in which product design and management of the provider supply chain may impact on claims.

The objective of this study is to find and collate available data that can be used in the formulation of a pricing tool for HMI. This includes identifying sources of data that are consistent and easily accessible for use in HMI premium setting. Two indicators have been identified:

- i. The United Nations Millennium Development Goals (MDGs) are eight goals that all 194 UN Member States have agreed to, in terms of the United Nations Millennium Declaration, to try and achieve by the year 2015. This commits world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. These MDGs are as follows:

Goal 1: Eradicate extreme poverty and hunger.

Goal 2: Achieve universal primary education.

Goal 3: Promote gender equality and empower women.

Goal 4: Reduce child mortality.

Goal 5: Improve maternal health.

Goal 6: Combat HIV/AIDS, malaria and other diseases.

Goal 7: Ensure environmental sustainability.

Goal 8: Develop a global partnership for development.

These MDGs all have specific targets and indicators, with progress towards achieving them being tracked by the World Health Organisation (WHO). It has been suggested that the extent to which developing countries are successful in meeting the MDGs can be used as an objective indicator to determine the systemic risk of illness within a country that result from the environmental factors that the MDGs aim to improve.

Detailed MDG profiles are available for most countries (*World Health Statistics, 2013*) which track the change in indicators over time. These are too numerous to fit into this report but *World Health Statistics (2013)* contains the WHO's annual compilation of health-related data for its Member States and includes a summary of the progress made towards achieving the health-related Millennium Development Goals (MDGs) and associated targets (*World Health Organisation, 2013a*)¹.

- ii. Another measure that can be used to evaluate the impact of country specific burdens of disease is that of the **disability-adjusted life year (DALY)**. This is a

¹See: http://www.who.int/gho/publications/world_health_statistics/2013/en/

measure of the overall disease burden expressed as the number of years lost due to ill-health, disability or early death. This measure was first conceptualized by Murray and Lopez (1996) in work carried out with the WHO and the World Bank, known as the global burden of disease study. It is now a key measure employed by the United Nations and the WHO in such publications as its Global Burden of Disease. Figure 2 illustrates the concept:

- iii. Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Ghana, for example, the top three causes of DALYs in 2010 were malaria, HIV/AIDS, and lower respiratory infections. It also shows where there may be changes taking place in the risk profile. For example, in Ghana 2 of the 10 leading causes of DALYs in 2010, iron-deficiency related anaemia and cerebrovascular disease, were not significant causes of DALYs in 1990.

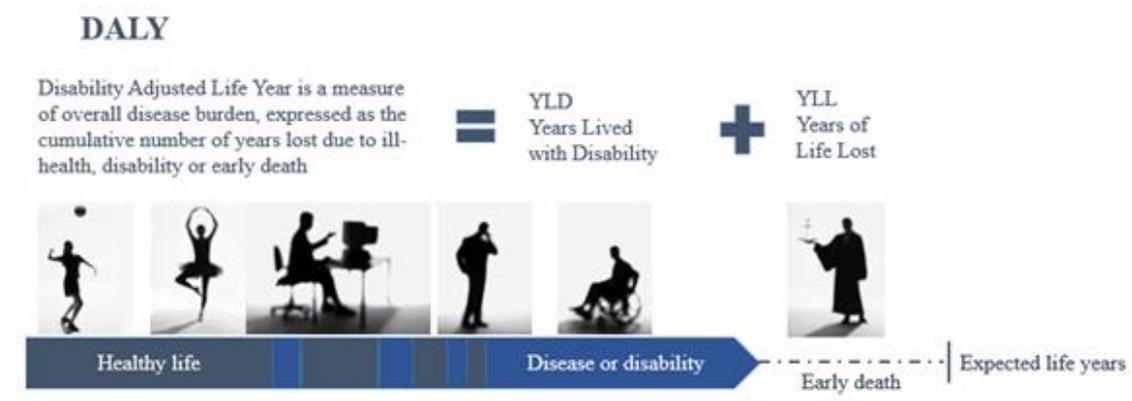


Figure 2: Disability adjusted life years (DALY) illustrated

Source: adapted from wikipedia.org/wiki/Disability-adjusted_life_year

Disease burden profiles such as defined by MDGs or as DALYs, may therefore be useful for determining a basis of risk rating for different countries when determining premiums for HMI products, and are available for each of the countries under review (Institute for Health Metrics and Evaluation, 2014)².

Addendum A and Addendum B provide examples of sources of data on the burden of disease.

1.5. Structure of this report

As referred to in section 1.2, this study has focused on some of the key factors that directly impact on health insurance claims, how we may be able to draw on past experiences in order to devise better ways of dealing with these factors, and how we may be able to more effectively include these in our determination of HMI premiums.

²See: <http://www.healthmetricsandevaluation.org/gbd/country-profiles>

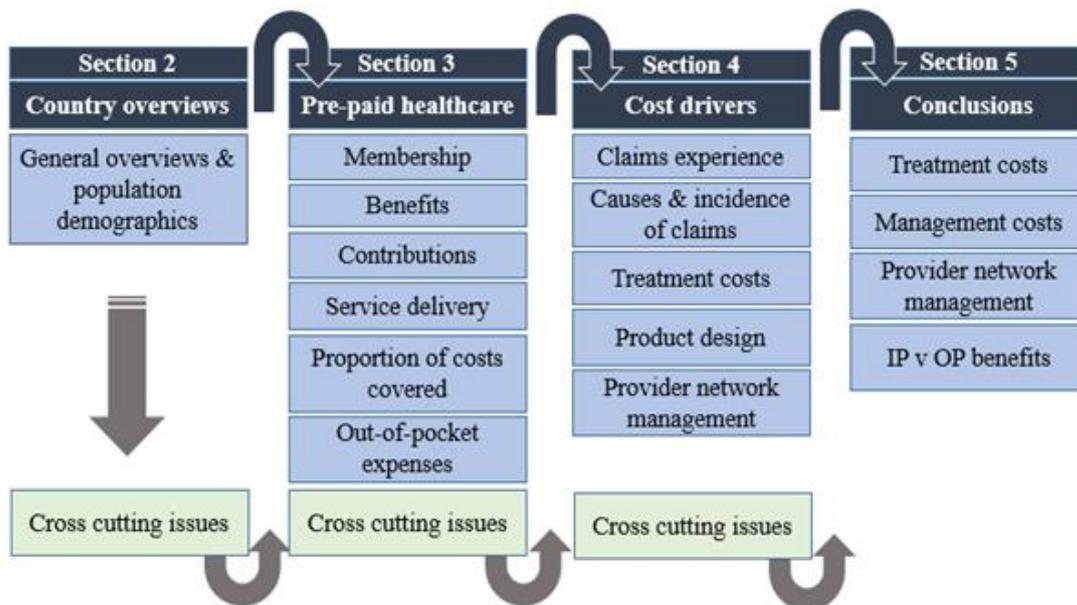


Figure 3: Structure and flow of this report

The rest of this report therefore examines the extent to which commonalities and differences in respect of factors that drive health insurance claims may show patterns that can guide us in premium determination. The report, in section 2, examines the selected countries and their population demographics. Section 3 looks at pre-funded health insurance within each country and section 4 examines the claim experience and the factors that seem to cause claims. Section 5 attempts to bring all the issues that have been highlighted in the previous sections together in order to draw conclusions that can be used in future premium determination exercises. Figure 3: Structure and flow of this report illustrates the structure and flow of the remainder of this report for ease of reference.

General overviews and the population demographics of target markets provide a great deal of useful information that can inform on premium setting. For example, a largely young population is likely to suffer from different illnesses, and possibly less so than an older population. Experience has also shown that urbanised areas are likely to have a higher claim frequency than rural areas.

Information about economic performance, the size of the informal sector, access to financial services and the state of the health system can have a significant impact on the success of HMI. We therefore provide a very brief overview for each of the countries that were selected for this study.

2. Section 2: Country overviews

2.1. Kenya

Although Kenya is still considered a low-income country by international standards, it is seen as one of the leading economies in the East African Community (EAC), a customs union between Kenya, Tanzania, Uganda, Rwanda and Burundi. Kenya's Gross Domestic Product (GDP) per capita, at USD 1 802 is among the highest of the region. However, this figure masks great disparities between Kenya's small and rich elite and the majority who live in poverty. Kenya's economy is characterised by a relatively small formal sector with about 1.9 million employees and a large and growing informal sector with over 8.3 million employees. Total GDP was USD 75 billion in 2012 with growth of 4.7% and inflation (CPI) of 9.4% (*Economic Survey, 2010; Heritage foundation, 2013*).

The estimated population was 44 037 656 in 2013, of which 50.12% were female. Kenya's population has been growing rapidly and in just the last four decades, the population has nearly quadrupled in size, from 11 million people in 1969 to more than 44 million in 2013 of whom 35% live in urban areas and 27% have a secondary education. By 2030 the total population is expected to grow to 68 million people. Figure 4 shows that the population under the age of 25 is expected to grow from 27 million to 40 million, with 43% of the population under the age of 14 by 2030 (Kenya National Bureau of Statistics, 2013)³.

The average Kenyan is healthier, more educated and enjoys better infrastructure services than a decade ago, but a large proportion of the population continues to live in fragile conditions with sub-standard access to water, sanitation and energy. The growing size of the elderly population is also likely to shift healthcare needs over time towards lifestyle diseases, like hypertension and diabetes, which require more long term treatment. Measured by the number of years of life lost (YLLs) due to premature death in Kenya, HIV/AIDS, lower respiratory infections, and malaria were the highest ranking causes in 2010, although the incidence of lower respiratory infections had reduced by 21% compared to 1990.

Kenya's health sector faces enormous deficiencies in coverage and infrastructure. Due to the poor quality of the public sector offering, Kenyans increasingly look to the private sector for quality and value for their money. As a result, Kenyan consumers spend a greater proportion of their income on healthcare than they did a decade ago.

³ See: http://www.knbs.or.ke/index.php?option=com_phocadownload&view=category&id=2:2009-census-documents&Itemid=637

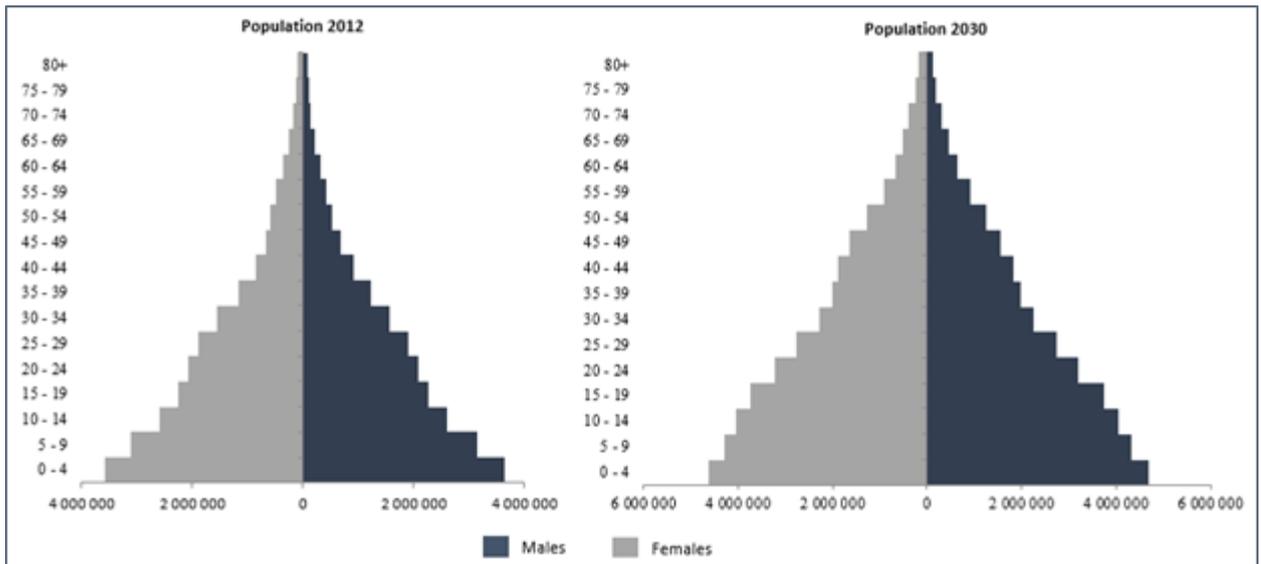


Figure 4: Kenya's Population by age group 2012 – 2030

Source: KNBS, Kenya Population and Housing Census Vol. 1B, 2010

2.2. Ghana

Ghana is located on the Gulf of Guinea, only a few degrees north of the Equator and has a land area of 239 000 square km that is made up of two broad ecological zones - a high forest zone covering much of the southern third of the country, and a savannah zone over the considerably drier northern two thirds. The southern half of the country is more densely populated than the northern half, and almost half of Ghana's population of 25 million currently live in urban areas.

Ghana is classified as a middle income country with vast natural resources and is West Africa's second largest economy after Nigeria. Total GDP came to USD 82.4 billion in 2012, with compound annual growth over 5 years of 8.3% and per capital income of USD 3 305. Inflation was 9.2% in 2012 (*Heritage Foundation, 2013*).

The country has recently discovered petroleum in commercial quantities, and started producing oil and gas towards the end of 2010. Ghana has a thriving informal sector and small and medium enterprises (SMEs) play a significant role in the economy. In 2011 the SME sector employed close to 80% of Ghana's total workforce and contributed approximately 20% to GDP. However, the Ghanaian insurance sector has not kept pace with the rapid expansion of banking and payment services and the population continues to be mostly un-served by insurance.

The 2010 Census found that Ghana has a population of 24 658 823 across 5 467 136 households. A large proportion (38.3%) of the population are children under 15 years, with the elderly (65 years and older) only accounting for a small proportion of the population.

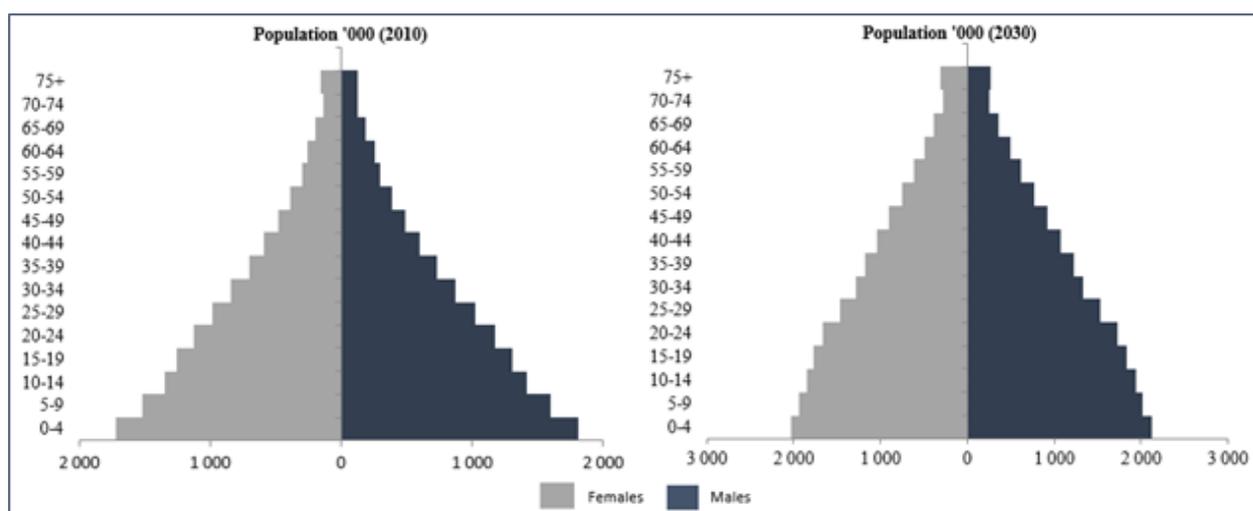


Figure 5: Ghana population pyramids, 2010 and 2030

Source: World Bank

The structure of the country's population is basically shaped by the effects of high fertility rate and a decreasing mortality rate. Currently 50.9% of the population live in urban areas (90.5% of them in Greater Accra), 42.4% of household members are children and 11.9% are older relatives in the household. Ghana's population will increase approximately 40% by 2030—and the number of people aged 65 and older will increase by 90%, as illustrated in Figure 5.

Population growth and structural changes will strongly affect Ghana's health financing needs as well as its ability to meet those needs, with the emphasis moving from non-communicable to communicable diseases.

Ghanaians suffer from a high burden of disease, especially malaria, as well as high rates of maternal and infant mortality. While some national indicators for health status have been improving over recent decades, Ghana still suffers from great health disparities between different groups within the country.

2.3. Colombia

Colombia is located on the north western corner of the South American Continent. Although located on the equator, it has five different climatic zones consisting of tropical rainforests, savannah, steppes, deserts and mountains.

Colombia has outperformed the majority of its regional peers and has experienced steady economic growth in the past decade registering Gross Domestic Product (GDP) growth averaging over 4% p.a. Total GDP came to USD 502.9 billion in 2012 and per capita income was USD 10 792 (*Heritage Foundation, 2013*). With vast natural resources, strengthened fiscal policy since 2012, and a number of new free trade agreements, Colombia is well positioned to continue experiencing economic growth. However, income inequality is among the worst in the world, and according to the national census of 2005, 49.2% of the Colombian population live below the national poverty line and 17.7% were indigent.

The current population is estimated to be about 47 million people. Young people have dominated Colombia's demographic composition during the last century. At its peak in 2012, people under 20 years accounted for 37% of the population. However, this percentage is projected to decline as a result of the fact that the birth rate has fallen to just about replacement level.

A large wave is therefore expected to move through Colombia's population age structure as the large cohorts of young people start to age and the size of the working age group starts to peak over the years from 2033 to 2056. After this the working population is expected to decline as illustrated by Figure 6 and Figure 7.

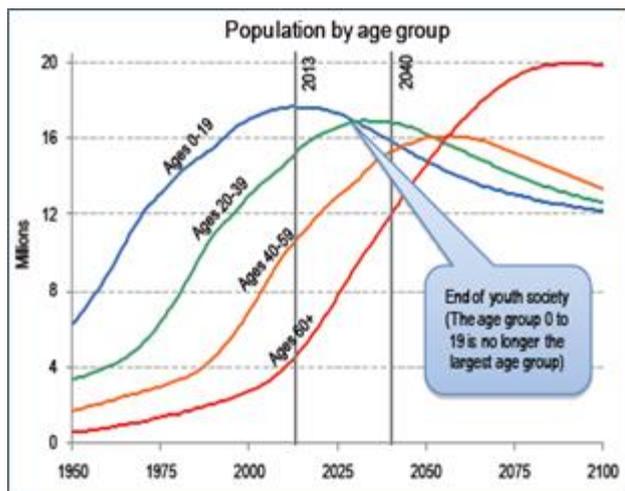


Figure 6: Changing age demographics

Source: Donehower, 2013

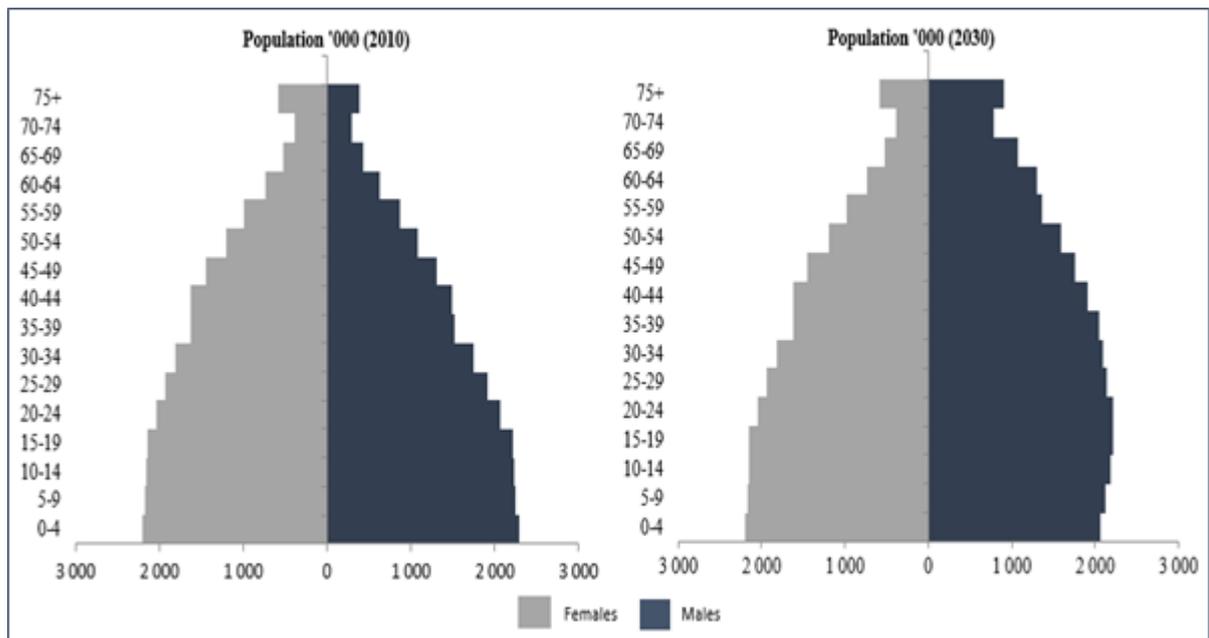


Figure 7. Colombia's Population by age group, 2010 and 2030

Source: World Bank

Despite decades of internal conflict and drug related security challenges, Colombia maintains relatively strong democratic institutions characterized by peaceful, transparent elections and the protection of civil liberties. Almost 60% of the economically active population in Colombia work in the informal sector and this percentage is growing as a result of the long term consequences of the global financial crisis of 2007/08.

Forced displacement remains prevalent because of violence among guerrillas, paramilitary groups, and Colombian security forces and it is estimated that 3.6 million have been displaced since 2000 (*The World Factbook, 2014*). The displaced population is particularly vulnerable to the effects of vector-borne diseases, foodborne diseases, waterborne diseases, and serious chronic malnutrition. Pregnant women among the displaced also have greater risks of complications during pregnancy and even greater probability of perinatal deaths.

2.4. India

The Republic of India occupies most of the Indian subcontinent in Southern Asia. India is one of the world's most populous nations and is considered the world's largest democracy. India consists of 26 states with virtually every kind of landscape imaginable. From its northernmost point on the Chinese border, India extends a good 2 000 miles (3 200 km) to its southern tip. India's climate is varied but is tropical in the south and mainly temperate in the north. The country has a pronounced monsoon season from June to September in its southern portion.

India has a burgeoning urban middle class and has made great strides in fields such as information technology. Having restored macroeconomic and financial stability following the global financial crisis, it now has one of the fastest growing economies in the world. Total GDP came to USD 4.7 trillion in 2012, with five year annual compound growth of 6.8% and per capita income of USD 3 830 (*Heritage Foundation, 2013*).

However, India's economic growth remains constrained by inadequate infrastructure, bureaucracy, labour market rigidities, and regulatory and foreign investment controls. These structural impediments to growth and persistently high inflation remain key concerns (*IMF Country Report No. 14/57, 2014*).

Investment in India's healthcare sector is developing quickly and is expected to reach USD 160 billion by 2017. The Indian hospital services sector generated revenue of over USD 45 billion in 2012, and this is expected to increase at a compound annual growth rate of 20% over the period 2012 to 2017 (IBEF, 2014).

This growth in the health care industry can be attributed to increasing sales of generic medicines under the country's USD 5.4 billion policy to provide free generic medicines to the Indian people (Reuters, 2012), continued growth in chronic therapies and a greater penetration in rural markets. Other growth drivers are heightened health awareness, increasing affluence, changing lifestyles resulting in higher incidence of related diseases, and increasing government expenditure on health care (Deloitte Touche Tohmatsu Limited, 2014). Greater penetration of health insurance has also aided the growth in health care spending. The Indian government plans to cover health insurance for 80% of the population by 2020 under its Health Insurance Vision 2020 (Hindu Businessline, 2013). India experienced very rapid population growth between 1960 and 2000 – from 448 million to

1.04 billion, continuing to 1.21 billion in 2010. India's population is currently growing at a rate of 1.4% per year, far surpassing China's rate of 0.7%. This is expected to result in India surpassing China with respect to population size in less than 20 years.

Demographic change in India is opening up new economic opportunities as declining infant and child mortality effectively results in a temporary baby boom. As this cohort reaches working age, India will find itself with a potentially higher ratio of workers to dependents, as illustrated in Figure 8. In the past, rapid population growth caused a substantial burden of youth dependency on the Indian economy. More recently, India's demographic profile has begun to evolve in a way that is potentially more favourable to economic growth, provided the large numbers of people reaching working age are able to be productively employed.

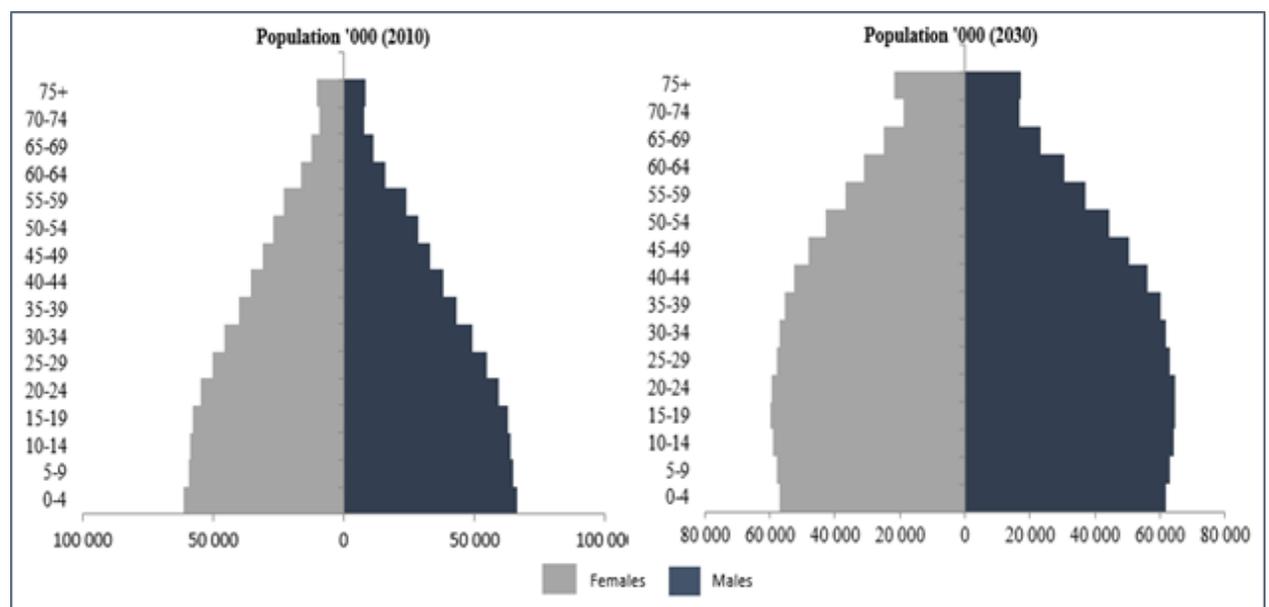


Figure 8. India's Population by age group, 2010—2030

Source: World bank

Although macroeconomists and economic policymakers have traditionally viewed population health as a social indicator that improves only after countries become wealthy, new thinking views health itself as an instrument of economic growth, not simply a consequence of it (Bloom, 2011). Since labour is the main asset poor people have, health status is of central importance to the alleviation of poverty, with India being of no exception.

2.5. Cross cutting issues

The four countries discussed above have all been successful in delivering increasing economic growth. However, this has not translated into an improvement in the quality of life of all people. In each case, more than half of the population are unable to find employment in the formal sector of the economy and therefore do not enjoy the benefits of formal employment, such as paid sick leave and health insurance.

These countries all share tropical climates and it is immediately evident that all these countries also have in common a significant number of diseases that are related to the environment, such as vector borne and water borne diseases. Many of the low-income

groups in all four countries also suffer from a lack of clean water and sanitation. We will look at the burden of disease in more detail in section 4 of this report.

More than 3.3 billion people live in the tropics⁴, most in developing countries. Total production of the tropical economies is projected to reach USD 40 trillion by 2025 (Beattie, 2010). In spite of this, a study run by 13 institutions across 12 countries, reported that people living in the tropics are likely to die nearly eight years earlier than those in other regions and standard health indicators, such as infant mortality, are more than 20 times worse in some tropical countries than they are in the developed world (State of the Tropics, 2014).

In all four countries we also find a declining population growth rate that will in due course impact on health insurance claims as the disease profile shifts from communicable to non-communicable diseases as a result of an aging population. However, this effect is likely to take longer in Kenya which is still at the beginning of this change.

All four of the countries that we studied are part of the group of 56 “Low and Middle Income Countries” as classified by the World Bank (2014). This group represented 84% of the global population in 2010, and the populations of our study countries make up 23% of this group and roughly 40% of the populations of tropical countries.

The country profiles and demographics of Kenya, Ghana, Colombia and India can therefore be seen as broadly representative of developing economies in the tropical climate zone, and help us to develop indicators for pricing HMI that may be applied in respect of a significant proportion of all low-income people.

⁴Countries that are located between the Tropic of Cancer and the Tropic of Capricorn.

3. Section 3: Prepaid healthcare

In the world's poorest countries, most people, particularly the poor, must pay cash for healthcare when they are sick and most in need, which tends to be regressive and often impedes access to care. Since the Millennium Declaration was signed in 2000, resources remain insufficient in most low-income countries to ensure that all people have access to even a very basic set of health services. As a result, an estimated 150 million people suffer severe financial hardship and 100 million are pushed into poverty each year because they have to pay for health services out of their own pockets at the time when they receive care (World Health Organisation, 2014).

Evidence from many health systems shows that prepayment through insurance schemes leads to greater financing fairness (The World Health Report, 2010). The WHO has therefore played a significant role in efforts to promote universal healthcare (UHC)⁵ in health systems. However, mobilising adequate resources required to achieve access to an acceptable standard of healthcare for the population as a whole is a major challenge.

In particular, the challenge in revenue collection is to expand prepayment, in which public financing or mandatory insurance will play a central role. In the case of revenue pooling, creating as wide a pool as possible is critical to spreading financial risk for health care, and thus reducing individual risk and the spectre of impoverishment from health expenditures (The World Health Report, 2010).

Kenya, Ghana, Colombia and India have all adopted strategies to expand access to healthcare to their populations. Each of them have implemented different mechanisms to achieve this and to some extent all of them have employed a mixture of public and private healthcare financing and service delivery.

In this section we will review what has been done in these countries in respect of providing broad based cashless access to healthcare. We will also examine the extent to which these actions have been successful or not. In this, our objective is to determine how premium setting in health microinsurance can be done more effectively.

3.1. Kenya

There are several types of prepaid schemes in Kenya that are subject to different organisational frameworks and regulations. These include private health insurance companies, medical insurance providers (MIPs), community based health financing schemes and the National Health Insurance Fund (NHIF). The types of insurance covers and benefits covered vary significantly. Until recently there was also no regulatory differentiation between insurance and microinsurance.

⁵The World Health Report (2010) defines the concept of universal health coverage (UHC) as a target in which "all people have access to services and do not suffer financial hardship paying for them" (World Health Organisation, 2010). By this definition, the goal is clear, namely, guaranteeing access to health care and financial protection for all.

A study on prepaid health schemes in Kenya in 2010 by Deloitte Consulting (2011) estimated that only 7.8 million people, or about 20% of the total population⁶, were covered by any health insurance scheme.

Box 1 provides a summary of the different pre-paid health schemes in Kenya.

The breadth of health insurance cover in Kenya in 2012 is estimated at 9 650 000 lives (including employer sponsored schemes) or 21% of the population, 80% of which is represented by NHIF membership. The different schemes are reviewed below:

3.1.1. National Hospital Insurance Fund (NHIF)

The National Hospital Insurance Fund (NHIF) is governed by the National Hospital Insurance Fund Act No. 9 in 1998 and is the primary provider of health insurance in Kenya with a mandate to enable all Kenyans to access quality and affordable health services. The Act makes no distinction between the formal and informal sectors, and indicates that Membership is mandatory for all Kenyans over 18 years of age, irrespective of whether they are active in the formal or informal sectors. In practice, however, while Kenya has achieved high levels of coverage in the formal sector, this has not been the case in the informal sector.

<p>Risk pooling funds mobilised in 2009 in KSh:</p> <ul style="list-style-type: none"> • Private insurance companies – 5,887,151,817 • NHIF – 5,079,569,000 • MIPs – 2,000,000,000 • International Private Insurers – 1,000,000,000 - Community based schemes – 150,000,000 • Total risk pooling funds – 14,166,720,817 <p>Level of coverage 2009-2010 Estimates:</p> <ul style="list-style-type: none"> • Private insurers and MIPs – 700,000 (1.8% of population) • NHIF – 6.6 million (17% of population) • CBHF – 470,000 (1.2% of population). <p>Payout ratios range 2006 – 2009:</p> <ul style="list-style-type: none"> • NHIF – 32% to 55% • Private Insurance companies – 65% to 69% • MIP – 46% to 61% • CBHF – 95% to 102% (2003-2005) <p>Administration expenses ratio range 2006 - 2009:</p> <ul style="list-style-type: none"> • Private insurance companies – 19% to 22% • MIPs – 15% to 25% (and 14% statutory commissions). • NHIF – 39.5% to 43.5% <p>Per member ratios private insurance 2009:</p> <ul style="list-style-type: none"> • Premium per person - \$134 pa • Claims per person - \$ 94 • Administrative costs per person - \$ 22
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Box 1: Prepaid schemes key performance indicators

Source: Deloitte Consulting, 2011

3.1.2. Private health⁷ insurers and MIPs

Private insurance is regulated by Insurance Act CAP. 487 through the Insurance Regulatory Authority (IRA). In 2012, there were 46 licensed insurers and gross written premium income grew by 18.49% from USD 1 082 million recorded in 2011 to USD 1 282 million in 2012 (AKI Association of Kenya Insurers, 2012). However, the insurance industry remains underdeveloped compared to other sectors of the economy with insurance penetration remaining at around 3.16% of GDP in 2012 in spite of positive growth in all the key performance indicators.

Health insurers have had mixed results and few have achieved sustainable underwriting profits. In 2012, only 15 of the 46 licensed insurers offered health insurance⁸, generating

⁶ Kenya's total population in 2010 is estimated at 39 million people.

⁷ Although the terms "health" and "medical" are used interchangeably in different jurisdictions, in this report we will use "health" insurance for the sake of consistency.

gross written premiums of USD 154.5 million⁹. In spite of erratic results, the health insurance class of business recorded the highest growth of 46.8% in 2012.

In addition to fully fledged licensed insurers that are permitted to underwrite health insurance, Kenyan legislation also provides for so-called MIPs which is a category of institution, such as health management organisations (HMOs), that is permitted to provide pre-paid access to healthcare services for “members” and to only “insure” those treatment risks that they are not able to service within their own establishments.

There were 24 such MIPs in 2012 (down from 28 in 2011), but since MIPs are not required to submit separate reports to any regulating authority, it has not been possible to establish the level of contributions or premiums that they collect from insured lives or beneficiaries. However, the insured risk benefit premiums paid to licensed private insurers are included in the annual reports of the Insurance Regulatory Authority (IRA).

⁸ Trident Insurance reported an underwriting profit in 2012, although they had stopped writing health insurance and reported no gross written premiums for 2012.

⁹ This includes risk benefit premiums paid by MIPs.

3.1.3. Community-based health financing (CBHF)

Several community based financing schemes have been set up over time to meet the healthcare financing needs of low income earners who have traditionally been largely left out of private insurance and NHIF.

However, it is becoming increasingly difficult to differentiate pure community-based insurance from partner-agent models that are underwritten and managed by private commercial insurers. Currently there are approximately 30 community based financing schemes, nine of which are members of the Kenya Community Based Healthcare Financing Association (KCBHFA). CBHFAs vary greatly in type and scope and range from small funds run by community welfare groups to large NGO based schemes.

According to a report of the *KCBHFA (2008)*, there were 7 community-based groups that represented 178 health schemes with contributions ranging from USD 3.57 to USD 17.86 per annum and covered more than 600 000 lives at that time. Approximately 400 000 of these lives belonged to the Jamii Bora Health Insurance (JBHI) scheme. See Box 2 for a brief overview.

Box 2: Overview of Jamii Bora

The Jamii Bora Trust (JBT) Microfinance institute was established in 1999 to serve poor, self-employed informal workers who are engaged in small business and have no regular salaries. By 2010 it had over 110 branches, with over 277,000 borrowers spread all over Kenya. In 2001, JBT started the health insurance program, commonly referred to as Jamii Bora Health Insurance (JBHI), for its members in order to improve its members' access to quality health care.

In January 2007 Jamii Bora Kenya Limited took over the micro-finance operations from the JBT managing them until March 2010, when City Finance Bank acquired the assets, business and liabilities of Jamii Bora Kenya Limited and became Jamii Bora Bank Limited. Jamii Bora Trust is a significant shareholder in Jamii Bora Bank Limited.

Since 2010 there has been a significant reduction in the number of participants in the Jamii Bora Health Insurance scheme from an estimated 400 000 lives in 2008 to an estimated 32 000 lives in 2010 (Mwaura & Pongpanich, 2012).

According to Koven et al. (2014) the Jamii Bora Trust was recently shut down due to regulatory constraints. Jamii Bora now has just 200 members enrolled in a partner-agent scheme.

Anecdotal evidence suggests that it is intended that members of this scheme should join The Afya Bora scheme that is underwritten and managed by CIC Insurance, which has a strong presence in the microfinance movement.

Sources: Deloitte (2011), Mwaura & Pongpanich (2012), Koven et al (2014).

Afya Yetu is a network of 30 CBHI Schemes that brings together more than 30 000 people from around 9 000 households. The schemes provide cashless hospitalisation coverage with high cover limits. Although participation is voluntary, the program limits enrolment to November and December, with coverage beginning the following January. This aims to limit adverse selection (*Koven et al, 2014*).

Afya Bora insurance cover is a HMI product that caters for inpatient and outpatient treatment costs and is underwritten and managed by the CIC Insurance Group. Afya Bora replaced the better known Bima ya Jamii scheme, which had not performed as anticipated and was discontinued. The product is a family cover aimed at members of MFIs and other similar groups.

There is no overall financial regulation of CBHF as an insurance vehicle. The lack of an insurance regulator for CBHF institutions means that there are no regular insurance reports

on their healthcare financing activities. However, some summarized reports are made to their umbrella association, the KCBHFA. The biggest challenge facing CBHF is long-term sustainability, lack of management capacity and the limited financial protection that they offer to members.

3.1.4. Membership

Participation in the NHIF came to 7.8 million people in 2012, which accounted for 20% of Kenya's population (NHIF, 2012).

A study of prepaid health schemes in Kenya in 2010 by Deloitte Consulting (2011) estimated that only around 20% of the total population, were covered by any health insurance scheme. In spite of growth in the membership of the NHIF, the total covered population still remains close to only 20%. Table 1 provides a breakdown of the membership by scheme providers:

Prepaid scheme provider	Estimated number of scheme participants (2010)	% of the covered population	Estimated % of the total population enjoying cover	Estimated number of scheme participants (2012)	Estimated % of the total population enjoying cover
Kenya total population	<u>40,513,000</u>			<u>43,614,043</u>	
NHIF	6,926,507	80%	17,10%	7,800,000	17,88%
Private Insurance Companies, MIPs & employer in-house schemes	1,235,164	14%	3,05%	1,296,922	2,97%
CBHF ¹⁰	470,000	5%	1,16%	50,000	0,11%
Total	8,631,671	100%	21,31%	9,146,922	20,97%

Table 1: Estimates of population coverage of health insurance in Kenya

Source: KHHEUS¹¹ (2000), Deloitte Consulting (2011), 2012 estimated by author

It is important to note that there is significant overlap in membership between NHIF, private prepaid schemes and employer in-house schemes. NHIF cover is mandatory for those in the formal sector who may also purchase voluntary cover from private insurers and MIPs. The same applies to employer in-house schemes whose members are also covered by both NHIF and private prepaid schemes. Unfortunately there is no reliable data to quantify the degree of membership overlap between the various prepaid schemes.

3.1.5. Benefits

NHIF provides inpatient cover for the contributing member, his or her spouse and children in accredited facilities in the different contract categories, covering most conditions. Treatment in private facilities and high cost hospitals are subject to a co-payment by the member.

¹⁰ Since the study by Deloitte Consulting in 2011, there has been a significant reduction in the number of participants in the Jamii Bora Health Insurance scheme, about which Box 1 provides an overview.

¹¹ Kenya household health expenditure and utilisation survey.

Cover includes comprehensive maternity and a Caesarean Section (CS) package in government hospitals, the majority of mission and some private hospitals. Dialysis and family planning (vasectomy and tubal ligation) are covered at the Kenyatta National Hospital and the Moi Teaching and Referral Hospital at a rebate.

The NHIF also provides comprehensive outpatient benefits to Civil Servants and members of the Disciplined Services and their dependants. The scheme has undergone several changes over the years to include more benefits, to target informal sector households and, more recently, to extend outpatient cover to the rest of the NHIF membership.

Proposed additional outpatient benefits that have not been implemented due to the controversy and litigation about the proposed increase in contributions are as follows:

- Prescribed laboratory tests/investigations
- Drugs/medicines
- Prescribed X-rays and ultra sound diagnosis
- Treatment of Sexually Transmitted Infections
- Treatment, dressing or diagnostic testing
- Family planning
- Ante-natal and post-natal care
- Clinical counselling services
- Health and wellness education
- General consultation with general practitioners

Private health insurers (PHIs) prefer to provide inpatient cover on a group basis and few schemes provide combined inpatient and outpatient cover and individual plans. This is based on the perceived risks and costs associated with outpatient and individual plans. There is a lack of adequate actuarial information about outpatient and individual covers and this is exacerbated by a fear of adverse selection and moral hazard. Outpatient and individual covers have therefore only been provided intermittently.

Prepaid Scheme	Type	Inpatient cover	Outpatient cover only	Inpatient and Outpatient	Individual cover	Group cover
Britam (formerly Britak)	PHI	Yes	No	No	No	Yes
APA	PHI	Yes	No	Yes	Yes	Yes
Jubilee	PHI	Yes	No	Yes	Yes	Yes
UAP	PHI	Yes	No	Limited	Yes	Yes
CFC/Heritage	PHI	Yes	No	Yes	No	Yes
AAR	MIP	Yes	No	Yes	Yes	Yes
RHEA	MIP	Yes	No	Yes	Yes	Yes

Table 2: Range of benefits offered by private insurance schemes and MIPs

Source: Deloitte Consulting, 2011, *Market assessment of private prepaid health schemes*

Table 3 provides a breakdown of specific health microinsurance schemes that have been available in Kenya. All of these schemes with the exception of Kinga ya Mkulima, have been discontinued or scaled down significantly in recent times.

	CIC Bima ya Jamii ³	Pioneer FAULU Afya ¹²	Britak ¹³ Kinga ya Mkulima	Jamii Bora Health Insurance ¹⁴
Start date	2007	2010	2007	2001
Product type	IP health, AD&D, Funeral, voluntary, stand alone	IP & OP health, term life, AD&D, voluntary, stand alone	Whole life, IP health, voluntary, stand alone	IP health, AD&D, Mandatory for borrowers of JBT
Cover limits	USD 4 231 (IP health), USD 622 (hospital cash), USD 1 244 (AD&D), USD 373 (funeral)	USD 2 489 (IP & unlimited OP health), USD 1 244 (life & disability)	USD 1 244 (life), including 20% for IP health	Unlimited IP health, outstanding loan cover
Annual Premium ¹	USD 45 per family	USD 87 per family	USD 23 for member & spouse	USD 30 per family
Distribution	SACCO's & MFI's	MFI	Employer (Kenya tea growers)	MFI
Targeted segment ²	SACCO members & MFI clients USD 124 to USD 187 (rural), USD 187 to USD 373 (urban)	Urban micro entrepreneurs USD 187 to USD 373	Small-scale tea growers USD 187 to USD 373	Urban slum dwellers USD 124 to USD 249
Performance	8 300 lives (06/2010); 40% claims ratio for life; 120% claims ratio for health ; 25% renewal ratio	11 000 lives (09/2010); >100% claims ratio	78 000 lives (10/2010); 80% to 100% claims ratio ; 1% lapse rate	600 000 lives (10/2010); 80% to 100% claims ratio
¹ Premiums do not include the cost of taking a loan to purchase insurance, which is very common for all the products reviewed except Britak. ² Average monthly household income based on estimations from the providers, on-going impact study of the CIC product conducted by EUDN and Oxford University and Ana Klincic's study on Jamii Bora Trust clients. ³ CIC product sells NHIF inpatient cover and bundles it with life benefits underwritten by CIC. Note: USD 1 = KES 80; IP = Inpatient; OP = Outpatient; AD&D = Accidental death & disability				

Table 3: Illustration of key health microinsurance schemes in Kenya

Source: ILO Microinsurance Paper no. 12, 2011

The Faulu health insurance scheme was taken over by the British-American Insurance Company Kenya (Britam) in 2012 on a partner-agent model. They acknowledge that they face a big challenge to turn this into a sustainable scheme.

However, Britam's signature program is the cashless hospitalization insurance product offered through the Kenya Tea Development Agency (KTDA) to its members. The product is also known as Kinga ya Mkulima ("farmer protection" in Kiswahili). The KTDA, through its fully-owned subsidiary broker Majani, collects premiums from the tea farmers which are

¹² Pioneer withdrew from offering health insurance in 2012

¹³ Britak was rebranded as Britam in 2012

¹⁴ Membership of the Jamii Bora Health Insurance scheme has reduced significantly and is currently estimated at only 32 000 (Mwaura & Pongpanich, 2012).

deducted from member's tea income either monthly or annually, depending on the member's preference. Countrywide, KTDA has 600 000 members and "Majani insurance" covers roughly 20% of them (Koven, et al., 2014).

Employer in-house schemes tend to have a very broad range of benefits that are only restricted by the annual budget for staff medical benefits, the staff category (for segregated schemes) and the economic fortunes of the employer.

According to the 2009/10 National Health Accounts, employers contributed USD 39.3m, about 2.7% (2005/6 = 3.3%) of annual total health expenditure. In addition to financing healthcare for their staff and dependents through an annual budget, some of the employers also run their own healthcare facilities (Deloitte Consulting, 2011). Employer schemes are not required to report to an external regulator so there are no aggregated reports.

3.1.6. Contributions

In its healthcare financing role, the NHIF collects revenue, pools funds and purchases care on behalf of its members. It is also responsible for determining the contribution (premium) rates and benefits packages. A graduated contribution scale was introduced in 1990 to provide for monthly contributions ranging from USD 0.36 to USD 3.81. The maximum contribution was capped at a salary of USD 178.57 per month.

New contribution rates were to be implemented in September 2010. However, implementation of these rates were stalled after the Congress of Trade Unions (COTU) went to court to block them. After the NHIF won the court battle, the implementation again failed as a result of disputes within the management board. New contribution rates were therefore only implemented in October 2012 and provide for employees earning less than USD 71.43 to contribute USD 1.79 per month, while those earning between USD 595.24 and USD 1190.48 must contribute USD 17.86 per month. Those earning above USD 1190.48 contribute USD 23.81¹⁵.

Private health insurance products are mostly segmented into low, middle and high benefit/premium groups (excluding health micro-insurance). Private insurers and MIPs have the following averages for inpatient cover limits and premiums:

- Low benefits cover – Average Cover limit USD 1 250 to USD 2 500. The average annual premium per person is USD 112.50.
- Middle benefits cover – Average Cover limit USD 3 750 to USD 12 500. The average annual premium per person is USD 150 to 187.50.
- High benefits cover - Average Cover limit above USD 12 500. The average annual premium per person is USD 200 and above.¹⁶

It is estimated that total average spending on private health insurance per life covered was USD 152 per capita in 2009 (*Deloitte Consulting, 2011*).

Afya Yetu community members pay a premium ranging from USD 8 per year for the low cost plan up to USD 26 for the plan that includes NHIF coverage. USD 4 of this premium reverts to

¹⁵ <http://www.equityhealthj.com/content/10/1/22>

¹⁶ <http://www.jointlearningnetwork.org/content/national-hospital-insurance-fund-nhif>

the community scheme while the remainder is remitted to NHIF. The initiative receives donor support, in the form of technical assistance from the French NGO CIDR to support the administrative services it supplies to the 30 CBHIs as well as a “reinsurance” guarantee from *Bread for the World*, that applies once claims ratios from 110% to 140% of targeted claims ratio to cover catastrophic losses (Koven, et al., 2014).

Afya Bora provides inpatient cover to a maximum benefit of USD 2 950 and outpatient benefits of up to USD 590. Premiums are USD 150 per year per family (*Angove et al, 2014*). Other than similar schemes, this product does not share benefits with the NHIF. Since this product was only launched in 2012 it is too early to determine how successful it will be.

3.1.7. Service Delivery

The NHIF has three main categories of facilities, namely Government, Private and Mission and Private. Each facility is accredited to provide different levels of benefits. Recent NHIF reforms include decentralisation to ensure that services are close to the people, with 31 fully autonomous branches across the country. Each of these branches offers all NHIF services including payment of benefits to hospitals or members or employers. Smaller satellite offices and service points in district hospitals also serve these branches.

NHIF currently pays a rebate to service providers who provide services to members. The rebate is a reimbursement rate payable to contracted providers based on their types of contracts. Currently, the rebate reimburses hospitals for providing inpatient services to members.

Private health insurers, MIPs and employer schemes all make use of contracted healthcare facilities to provide their members/beneficiaries with access to healthcare services. Ease of access to and quality of service is very much dependent on the type of scheme and the location of the member due to the limitations of the health system in Kenya itself.

Kenya suffers from a lack of skilled medical professionals, especially doctors, with approximately 1.4 doctors per 100 000 people. The health care provider landscape in Kenya is dominated by dispensaries and clinics, which make up 77% of all facilities. Dispensaries and clinics are rarely run by a doctor and often run by under-trained health workers, typically a nurse or midwife. Only 21% of clinics are able to provide a full package of basic services (curative services for children, sexually-transmitted infections services, family planning, antenatal care, etc.). It is estimated that 42% of clinics do not have equipment to support quality sterilization/high-level disinfection (HLD) and shortages of equipment and medicines are common. This often leads to patients being unable to access the care needed (*Deloitte Consulting, 2011*).

Private insurance, however, plays an important role in allocating resources to healthcare facilities and as a result, help to enable improvements to the healthcare delivery infrastructure. Large private for profit providers report that more than 70% of their regular income originated from private health insurance and employer sponsored schemes. They have set up infrastructure necessary to serve these prepaid scheme members better especially with outpatient claims which tend to be large in volume but small in value (*Open Capital Advisors, 2012*).

Provider-based prepaid schemes on the other hand, usually restrict access to their own facilities, with or without availability of referral services.

3.1.8. Proportions of costs covered

The current NHIF scheme covers inpatient benefits only and the share of expenses covered is determined largely by the type of hospital. Table 4 summarises the main contract categories and the inpatient services offered under each contract and the rebates payable under each contract type.

Contract category	Types of facilities	Types of benefits covered			Minimum reimburse rate USD	Maximum reimburse rate USD	Annual benefit limits
		Inpatient	Surgical	Others			
A	Government - Public health facilities	All services - no exclusions (dependent on specific contracts e.g. referral hospitals have exclusions)	Yes	No	7,14	28,57	None
B	Small private and Faith-based (mission) hospitals	All services but co-pay on surgery	Co-pay ¹⁷	No	9,52	28,57	USD 5 000 per family
C	Private hospitals and larger FBOs	Daily bed rebate only	No	No	7,14	25,00	180 days in hospital ¹⁸ per beneficiary
N	Others	Daily bed rebate only	No	No	2,38	20,24	

Table 4: NHIF Main service provider contract categories

Source: NHIF

Most private health insurance schemes (including those provided by MIPs) do not require significant co-payments for inpatient services. Insurers pay 100% of the direct costs for inpatient healthcare on most benefit packages, subject to the overall inpatient financial cover limit. There is one provider that has a co-payment for illness claims of 10% of the treatment cost in respect of individual members. The height of coverage is therefore generally high (assuming the depth of cover is reasonable and the financial limit is reasonable for the service).

However, on some of the more affordable plans the overall benefit limit (or sub-limit) can be very low and members can easily incur out-of-pocket expenses for the cost of treatment and continuing care that exceeds the benefit limit. In the case of some inpatient plans members who breach scheme rules (such as consulting a non-accredited provider) may be penalized with a co-payment. In some cases, unreasonable exclusions may also be used to create the perception of affordable premiums.

¹⁷ For certain high cost surgeries the co-payment can be as high as 80% of the professional portion of the cost (with facility and hospitalization charges still covered with no co-payment).

¹⁸ Stays for longer than 5 days require prior authorization.

Private health insurance schemes apply varying forms of co-payment ranging from about USD 0.60 to USD 2.38 per visit. Even some micro-insurance schemes have co-payments of up to USD 2.38 per visit. In one case the level of co-payment for outpatient services in high cost facilities is USD 5.95 per visit (*Deloitte Consulting, 2011*).

Most outpatient covers have financial limits per member with or without a co-payment. The financial limits tend to be lower than for inpatient benefits and generally the premiums are higher. MIPs that own their own outpatient facilities usually do not apply financial limits for outpatient cover.

Co-payments are seen by many as a tool for reducing moral hazard and many believe that co-payments reduce over claiming, particularly in cases where the employer is paying the premium on behalf of an employee (and dependants). Such overutilization by the members in an otherwise cashless system of access to healthcare services is a major concern for insurers. However, there is debate among health economists whether co-payments really work to reduce moral hazard. In some cases they are simply viewed as additional financial barriers to access for the poor.

Indirect costs, such as transport costs and lost wages, are often ignored when discussing healthcare financing but for the poor and low income groups they present a significant barrier to access of healthcare services.

3.1.9. Our-of-pocket expenses

The Kenyan health sector relies heavily on out-of-pocket payments (OOPs) which are charged for health services sought from both the public and private sector. Approximately 33 million Kenyans lack any type of health insurance coverage (Open Capital Advisors, 2012), and even those who have are often still required to make top-up or co-payments in a health system which relies heavily on user fees at the point of service delivery. In Kenya these OOP payments make up roughly 25% of total health spending and came to a staggering USD 700 million in 2010/11 (World Bank Indicators).

3.2. Ghana

According to the Ghana National Insurance Commission's (NIC) Annual Report for 2012, there were 42 licensed insurers that generated gross written premiums of USD 415.67 million in 2011, a growth of 37.2% over the previous year. In spite of the positive growth, insurance penetration in the country is still very low and in 2010 the NIC estimated that, with the exception of the NHIS, only 4.1% of the adult population in Ghana had any form of insurance (*FinMark Trust, 2010*).

With regards to health insurance, Ghana is a good example of a country where private community-based health microinsurance (HMI) schemes formed the foundation of what became the national health insurance scheme. Community-based health insurance schemes proliferated and grew from 3 in 1999 to 259 in 2003.

The Government, in 2000 introduced regulations that created a standard benefits package for all citizens. Administration of the scheme was done at district level and existing community-based schemes were offered a choice of affiliating with the envisaged national

health insurance scheme and receiving government subsidies and other support, or remaining independent and modifying their benefits package to meet the new regulations. Most schemes opted to affiliate with the national health insurance scheme and this melding of existing community-based health insurer capacity with a national framework increased coverage rates 30-fold over a relatively short period of time, allowing Ghana to reach a penetration level of 35% by 2012 (ILO, 2013).

As a result of the widespread participation in the national health insurance scheme, private commercial health insurance in the more traditional sense has been slow to develop in Ghana and it seems that only approximately 1% of the population enjoy health insurance cover outside of the NHIS.

3.2.1. National health insurance schemes (NHIS)

Ghana's National Health Insurance Scheme (NHIS) was introduced in 2003 to replace the *cash-and-carry system* of paying for healthcare services at the point of receiving it and to provide basic healthcare services to everyone who lived in Ghana. The NHIS operates Ghana's public healthcare system and allows three different kinds of insurance plans:

- i. District Mutual Health Insurance Schemes (DMHIS);
- ii. Private mutual insurance schemes; and
- iii. Private commercial insurance schemes.

The most popular plan is the DMHIS, which operates in every district in Ghana. Each DMHIS is in charge of accepting and processing memberships, collecting premiums, and processing claims from accredited facilities. A newly created National Health Insurance Authority (NHIA) was commissioned "to secure the implementation of a national health insurance policy that ensures access to basic healthcare services to all residents".

The NHIA licenses and regulates district-level mutual health insurance schemes (DMHISs) as well as other schemes allowed under the Act, accredits providers, determines premium levels in consultation with DMHISs and generally oversees and reports on NHIS operations.

There are currently 145 district schemes, including ten that operated in the Greater Accra area during the study period (Blanchet et al., 2012). The NHIS has had impressive achievements since its creation, especially in terms of increases in coverage, availability of health services, and utilization of healthcare services.

3.2.2. Private health insurers

District mutual health insurance, private mutual health insurance and private commercial health insurance schemes are regulated by the National Health Insurance Council (NHIC). There are very few private health insurance companies (both mutual and commercial) and they cover less than 1% of the insured population, mainly a few individuals and the staff of some employers in the formal sector. However, no reports are issued about the activities of these institutions and formal supervision does not seem to be in place.

Private health insurers include, MetCare Health Plan, GLICO Health Plan, Med-X Health Systems, Summit Insurance Company, Momentum Ghana (Mutual Alliance Health Plan),

Nationwide Mutual Health Insurance, Managed Healthcare Insurance, First Fidelity Healthcare and Liberty Mutual Insurance Company.

Most private insurers pay 100% of the direct costs of treatment on most benefit packages (outpatient and inpatient) subject to the overall inpatient financial cover limit and excluded conditions. Private health insurers in Ghana largely target higher income groups and premiums on these plans range from USD 200 to USD 600 per person per year. Benefit limits range from USD 700 to USD 3000 for outpatient treatment and USD 7000 to USD 35 000 for inpatient benefits (Nationwide Mutual Health, 2014).

3.2.3. Community based health financing (CBHF)

Community-level and national-level health insurance are part of a 50-year history of health financing changes in Ghana, with influences tracing back to the country's independence in 1957. The Catholic diocese in Sunyani district was the first to experiment with community-level health insurance to improve financial access to care by launching the Nkoranza Community Health Insurance Scheme at St. Theresa's Hospital between 1989 and 1992. The Nkoranza scheme flourished and by 2000 had enrolled nearly 30% of the district's population. Despite proliferating to more than 140 schemes by 2002 and forming their own Network of Mutual Health Organizations of Ghana (GNEMHO), mutual health organisations ultimately covered only about 1% to 2% of Ghana's population prior to the creation of the NHIS.

Since schemes had to operate and pay for benefits entirely from members' very modest premium payments and registration fees, benefit packages were limited, varied across schemes, and services could only be obtained from a limited number of medical providers contracted by each specific mutual health organisation.

3.2.4. Membership

By the end of 2011, around 8.2 million people or 33% of the Ghanaian population were covered by the insurance scheme¹⁹. Before the creation of the NHIS, less than 1% of the population was enrolled in an insurance scheme (NHIA, 2011). The breakdown of the membership of the NHIS is provided in Table 5.

Category	Number of NHIS enrollees	Number of eligible population for enrolment	NHIS enrollees as % of eligible population
NHIS Contributors			
Formal sector	383 695	n/a	n/a
Informal sector	2 596 061	n/a	n/a
<i>Subtotal – NHIS contributors</i>	<i>2 979 756</i>	<i>n/a</i>	<i>n/a</i>
NHIS Exemptions			

¹⁹While the NHIS aims to be a compulsory scheme, it requires individuals to renew their enrolment through annual registration at district NHIS offices or other designated points, making enrolment effectively voluntary. As of 2010, nearly 34% of the total population were active NHIS enrollees (NHIA, 2010). However, due to administrative delays, only about 75% of NHIS enrollees are valid NHIS cardholders who are able to obtain reimbursement for their health expenses. This is attributable to a 3-6 month lag period between enrolment and receipt of an insurance card. Therefore, many NHIS enrollees are not eligible for subsidized care because they are awaiting receipt of their NHIS card (Boateng, 2009; Witter and Garshong, 2009).

Category	Number of NHIS enrollees	Number of eligible population for enrolment	NHIS enrollees as % of eligible population
Adults ≥70 years	440 841	873 661	50.5%
Children <18 years	3 894 092	11 026 524	35.3%
Pensioners	32 655	143 105	22.7%
Indigent	114 292	n/a	n/a
Pregnant women	702 079	n/a	n/a
<i>Subtotal – NHIS exemptions</i>	<i>5 183 958</i>		
Grand Total	8 163 714	24 658 823	33%

Table 5: NHIS enrollees

Source: NHIA Annual Report (2010), GSS (2012)

Note: “n/a” indicates data not available from 2010 Census

3.2.5. Benefits

The NHIS has a single benefit package that is set by Legislative Instrument 1809 and described by the NHIA as covering “95% of disease conditions” that afflict Ghanaians (*NHI Regulations, 2004; Witter & Garshong, 2009*).

The NHIS covers outpatient services, including diagnostic testing and operations such as hernia repair; most inpatient services, including specialist care, most surgeries, and hospital accommodation (general ward); oral health treatments; all maternity care services, including Caesarean deliveries; emergency care; and, finally, all drugs on the centrally-established NHIA Medicines List.

Some very expensive procedures are excluded from the benefit package, such as: organ transplants, dialysis, brain and heart surgery, most cancer treatments and non-vital services such as cosmetic surgery. Some high profile items, such as HIV antiretroviral drugs, for which there are separate programmes such as the National HIV/AIDS Programme are also excluded (*Asante and Aikins, 2007; Boateng 2009; Witter and Garshong, 2009*).

Other than the excluded services, there are few formal limits placed on NHIS members' consumption of benefits - there is no cost-sharing beyond premiums (such as co-payments, coinsurance, or deductibles), no annual or lifetime limits and little effective gate-keeping (*Blanchet et al, 2012*).

For NHIS-covered services, insured patients are not required to pay anything at the point-of-service in provider facilities that have been accredited by the NHIA.

Health services and drugs specified in the benefit package should also be provided free of charge (*NHIA, 2003; Addo-Cobbiah, n.d.*). However, anecdotal reports suggest that many providers are refusing to accept NHIS patients, due to delayed or low reimbursement from the scheme (*GhanaWeb, 2013*).

3.2.6. Contributions

The NHIS is financed from four main sources:

- i. A 2.5% value-added tax on goods and services, called the National Health Insurance Levy (NHIL);
- ii. An earmarked portion of social security taxes from formal sector workers;
- iii. Individual premiums; and
- iv. Miscellaneous other funds from investment returns, Parliament, or donors.

The NHIL is by far the largest source, comprising about 70% of revenues. Social security taxes account for an additional 23%, premiums for about 5%, and other funds for the remaining 2% (Blanchet et al, 2012; Amporfu, 2013).

Members are required to register/renew their membership and pay their premium at the district mutual health insurance schemes (DMHIS). Premiums range between USD 4.8 and USD 32 per year according to the ability to pay. There is no clear guideline regarding how much is to be paid according to a given level of income and the large informal sector makes it even more difficult for the DMHIS to obtain information on the incomes of members. A flat premium is therefore often charged to all members of a given district mutual health scheme (Amporfu, 2013).

To minimize the potential financial burden that could be imposed by the premium, several categories of members are exempt from premium payment. These include

- i. Children under 18 years of age (whose parents are registered with the NHIS);
- ii. Maternal patients (made possible by a grant from the government of UK);
- iii. Indigents and members above seventy years of age;
- iv. Adults in the formal sector who make pension contributions to the Social Security and National Insurance Trust (SSNIT) and SSNIT pensioners.

These categories of members form about 54.9% of the registered members. Only 30% of the members therefore pay the premiums which contributes only 5.0% of the total revenue.

3.2.7. Service Delivery

Providers must be accredited by the national health insurance authority (NHIA) before they can provide services to members. These can be public, mission, and private for-profit entities including pharmacies, hospitals, and clinics. At the end of 2011, there were 3 344 healthcare facilities that were accredited to serve NHIS members. Table 6 provides a breakdown of the accredited facilities:

Facilities by ownership	Number accredited
Government	1 804
Mission	202
Quasi-government	23
Private	1 315
Total	3 344

Table 6: Breakdown of accredited service providers by ownership

Source: NHIS Annual Report, 2011

These were made up by 2 319 facilities that provide primarily outpatient services, 194 facilities that provide diagnostic services and 297 pharmacies. In respect of inpatient services

there were 534 hospitals of which 307 were primary hospitals and 25 were maternity homes (NHIS Annual Report, 2011).

3.2.8. Out of pocket expenses

In spite of the “compulsory” nature of membership of the NHIS it is generally agreed that only about 35% of Ghanaians have in-force cover. A small number of people enjoy cover through private mutual and commercial health insurance schemes, but the vast majority of people have no pre-paid health cover.

Studies of sampled households in Ghana found that the insured have to pay out-of-pocket even for drugs and services that are supposed to be covered. Sometimes they even have to pay more than the uninsured population. For example, a recent study found that insured patients in the Brong Ahafo region were charged 33% more for outpatient services and 77% more for inpatient services than the uninsured (Aikins and Okang, 2006).

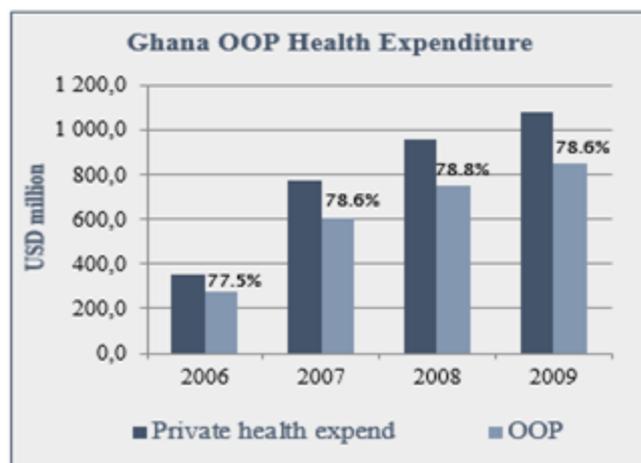


Figure 9: Ghana OOP health expenditure

Source: World Bank Indicators

It is also common for both insured and uninsured patients to make ‘informal’ payments to providers (Siadat, 2013). The result is a severe rationing of healthcare for low income households who are forced into a system of OOP payments that often leads to healthcare expenses in excess of 50% of non-food spending. Figure 9²⁰ illustrates how OOP health spending has remained at roughly 78% of private health spending. OOP payments came to more than USD 500 million in 2010/11 (World Bank Indicators).

3.3. Colombia

In Colombia, the Ministry for Social Protection oversees the social security system, while the government regulates the insurance sector through the Financial Superintendence, created by legislation in 2005. The insurance market consists of 25 non-life insurers (including two cooperatives), and 19 life insurers (IMF, 2013). The two cooperatives, *La Equidad* and *Solidaria*, who are the microinsurance pioneers, are estimated to account for 62% of the microinsurance market (Hougaard et al, 2008).

²⁰<http://www.tradingeconomics.com/ghana/health-expenditure-public-percent-of-gdp-wb-data.html>

The insurance industry has grown sharply since the beginning of this decade. In multiple years the premium growth exceeded 10% per annum, and in some cases (2001, 2002 and 2006) it was nearly 20% per annum. In 2013, Colombia's private health insurance premiums went up by 14%, however, private health insurance is still a very small portion (less than 4% according to Lloyds Market Intelligence, 2013) of the total insurance market in Colombia.

3.3.1. National health system (NHS)

Colombia created a “National Health System” in the 1970s that incorporated the network of public health services as well as many foundations and private and faith-based entities. The Ministry of Public Health had responsibility over all of these institutions, although in practice the institutions operated autonomously. This system was ineffective and up to 60% of those who required medical care did not seek treatment due to the costs they would have incurred. Throughout the 1980s, international trends and modernisation of the state led to important changes in Colombia:

- Fiscal, political, and institutional decentralization which led to devolution of power to the states, and
- the introduction of market mechanisms in the management and organisation of social and public services.

These two changes laid the political and economic foundation for the 1993 healthcare system reform through Law 100 of 1993 by unifying the existing social security, public, and private financing institutions under the umbrella of the General System of Social Security in Health (SGSSS) and created quality-centred competition among service providers and insurers by:

- Allowing insurers to negotiate service rates with both public and private providers, and
- allowing people the freedom to choose their insurer (*Joint Learning Network, 2014*).

Within the SGSSS, the reform created two parallel insurance schemes to target different sectors of the population - a Contributory Regime (CR), which targets the higher income population, and a Subsidized Regime (SR), which targets the lower income population. This is illustrated in Figure 10.

The system of managed competition has steadily boosted private sector participation in health service delivery and insurance in Colombia. Currently, five private insurance companies have a 50% share of the contributory market, and the public insurer, former Social Security, has been transformed into a mixed company with private capital (*Vargas et al, 2012*).

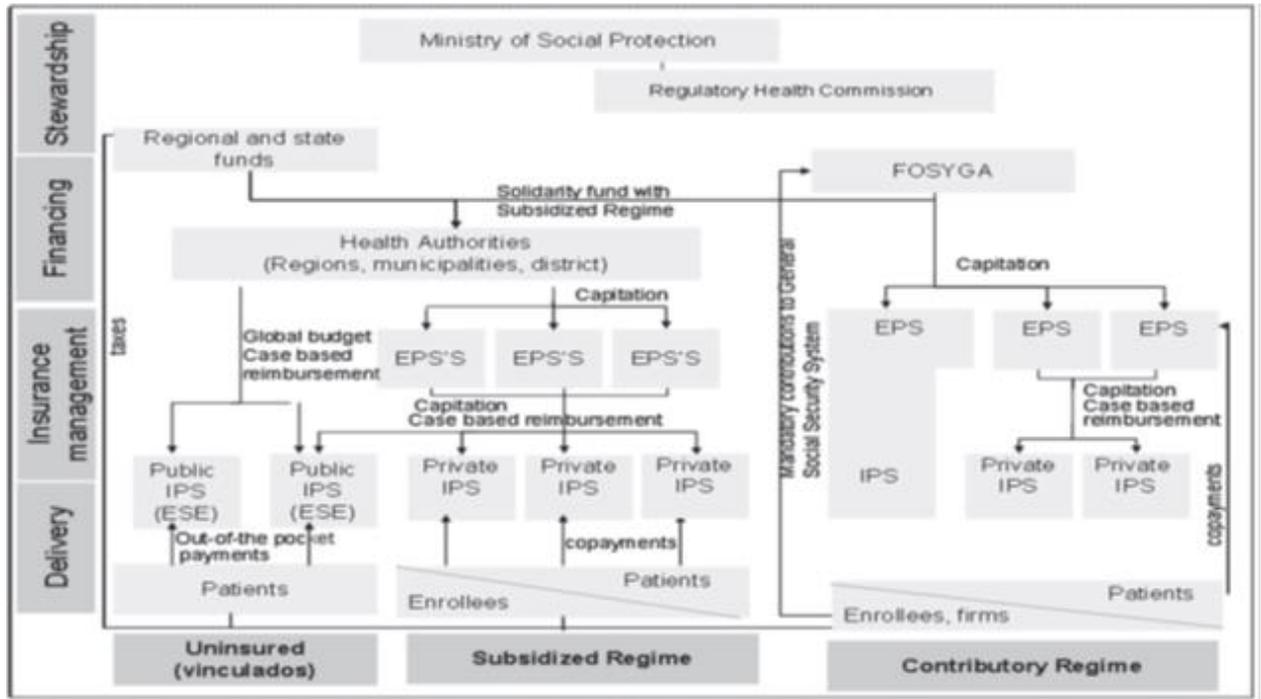


Figure 10: The National Health System of Colombia

Source: Vargas et al., 2012

3.3.2. Membership

The contributory regime (CR) is mandatory for all formal and informal workers who earn a minimum salary of USD 223 per month (2007). The subsidized regime (SR) was designed for the poor and indigent population who are identified through the Selection System of Beneficiaries for Social Programs (SISBEN). This is a proxy-means test designed to identify the most vulnerable members of a municipality. The SISBEN index is calculated at the household level through the use of a questionnaire. There are six score levels, 1 being the poorest. Levels 1, 2, and 3 qualify for the SR. As a result of the introduction of the General System of Social Security in Health (SGSSS), 90% of the population (39.7 million people) were covered by the NHS at the end of 2008 (*Joint Learning Network, 2014*) of whom more than 23 million were poor and vulnerable people who now have guaranteed access to health services (*Cabrera, 2011*). However, around 12.1% to 19.3% of the population remain uninsured²¹ (*Vargas et al, 2012*).

3.3.3. Benefits

In 2008, the Constitutional Court issued a landmark ruling (*Sentencia T-760*), which established a Health Bill of Rights in Colombia. This ruling stipulates that the Colombian government must protect all citizens by ensuring that:

- i. health services cannot be refused because of the patient’s inability to pay (including for catastrophic or high-cost procedures);

²¹ Ministerio de la Protección Social, República de Colombia (Ministry of Social Protection), 2007; Encuesta Nacional de Demografía y Salud (National Demographic and Health), 2010

- ii. health services cannot be stopped without clear medical reasons; patients must receive adequate information about their treatment options;
- iii. patients are prevented from facing unnecessarily burdensome bureaucracy or administrative procedures that might prevent access to services; and
- iv. patients must not be asked to pay separately for services that are part of an integrated treatment plan.

In essence, the Constitutional Court called on the executive and legislative branches of the government to fill a void in the stewardship of the health sector and gaps in the regulatory and legal framework. The Sentence T-760 ruling is therefore aimed at providing a link and principles to implement the right to health care (*Torres and Acevedo, 2013*). In July 2012 the government passed regulations that called for all citizens to have the same mandatory benefit package (MBP) regardless of their health insurance coverage arrangement. However, it is far from clear whether the health system's finances are sufficient to deliver on this. The Ministry of Health has estimated that the unification of the MBP will cost USD700 billion per year (*Lamprea, 2012*).

Healthcare for the uninsured (*vinculados*) and services excluded from the subsidized benefits package (SR) are provided by public providers partially funded by local authorities²². The uninsured have to pay for the services and the insured make a co-payment according to their income (*Vargas et al, 2013*).

3.3.4. Contributions

Formal sector employees contribute 12.5% of 40% of their monthly wage; 8.5% is paid by employers and 4% is paid by employees. The self-employed (or informal workers) must pay the entire 12.5% contribution. All of these contributions are collected by Health Promoting Entities (EPS), which are either private (for profit or not-for-profit) or public insurers and members can enrol with an EPS of their choice.

The insurer for those enrolled in the SR is known as a Health Promoting Entity of the Subsidized Regime (EPSS) and functions similarly to the EPS with the exception that it does not collect any contributions from those whom it insures. The Solidarity and Guarantee Fund (FOSYGA) channels 1.5% of contributions from the CR into the Subsidized Regime (SR) as a solidarity contribution.

This combination of funding sources and the use of solidarity between those who have the ability to pay and those who do not has made resources available to meet the needs of the poorest and the most vulnerable populations. This is made possible through general, departmental and municipal taxes and together with out of pocket expenditure, generated USD 3.2 billion for the subsidised regime in 2009 (*Cabrera, 2011*).

3.3.5. Service Delivery

The health-promoting entities guarantee access to the health services. Quality conditions are agreed with the local authorities and accepted by the Quality Assurance System (*Sistema Obligatorio de Garantía de la Calidad, SOGC*). The SOGC selects and hires the network of

²² Morales L G, 1997, El financiamiento del sistema de seguridad social en salud en Colombia. CEPAL: Santiago de Chile; República de Colombia. Ley Número 1122 de 2007, 9-1-2007.

healthcare providers who meet the enabling conditions defined by standards and negotiates the purchase prices of services and mechanisms of monitoring and follow-up, auditing, recognition and payment of services, and settlement. (*Cabrera, 2011*).

Policy makers expected that the private sector would foster more choice and competition among providers, but for a large share of the poor in the SR, public providers have been and remain the only available providers. The expectation was also that private sector managers of health plans would introduce strategic purchasing in negotiated contracts with health care providers (*Instituciones Prestadoras de Servicios, IPS*). The old Social Security was converted into a public sector health promoting entity (EPS), managed as an autonomous public-private sector enterprise. By 2010, there were about 70 EPSs nationwide, 21 EPSs in the Contributory Regime, and the rest were in the Subsidized Regime (*Bernal and Gutiérrez, 2012*). Yet, private sector providers only focus on large urban metropolitan areas. Currently public health providers continue to effectively provide 70% of the services available for SR enrollees in rural areas (*Superintendencia de Salud, 2012*).

3.3.6. Proportion of costs covered

The subsidised regime (SR) now covers the majority of the population outside the formal sector, but supply-side constraints remain an important obstacle to achieving substantial reductions in inequalities in access to services. Large groups of the population face barriers to access due to lack of integrated networks of services, even to some basic primary health care services (*Torres and Acevedo, 2013*).

Despite the T760 ruling of the Constitutional Court in 2008 that ordered the equalization of the benefits package of both regimes, the range of services covered by the subsidized regime (SR) was, until July 2012, greatly inferior to that provided by the contributory one.

The implementation of the government's equalisation policy, however, is plagued by a number of problems; for example;

- Several health insurance companies in the subsidized regime pulled out in July 2012, arguing that they are not financially capable of providing the updated basket of healthcare services to their affiliates due to the differential value of the capitation payments between the contributory and the subsidised regimes which still exists.
- Managed competition that was introduced to improve access to healthcare and efficiency in the delivery of healthcare services led to the introduction of a number of managed care strategies and mechanisms that have created barriers to access of healthcare (*Vargas et al, 2012*)

Frequent conflicts between insurance companies and local health authorities on the subject of judging when a service is included in the benefits package have led to increasing numbers of court cases that have challenged exclusions and refusals to authorise treatment.

This has been aided by the *Tutela*²³ system, which opened the door to increased health rights litigation (*Lamprea, 2012*) based on article 49 of the Constitution which describes the

²³ An informal and expedited injunction, introduced by the National Constituent Assembly in 1991, that allows any citizen to seek judicial protection when their basic rights are threatened by the State or by a third party. According to Article 85 of the

right to health as a public service responsibility assigned to the state and guarantees access to services that “*promote, protect and improve health*”.

The intense use of Courts and the Tutela for health related cases is largely the result of the underperformance of the Ministry of Health and the independent governmental regulatory agency that is supposed to operate as the watchdog of Colombia’s health sector. These governmental agencies have failed to discipline health insurance companies (both EPSs and EPSSs) and providers that systematically refuse pharmaceuticals and medical procedures that are included in the baskets of health services in both the contributory and subsidized regimes and paid for through the capitation payments. There is also no effective alternative to the Tutela for patients who are denied treatment since there are no other effective conflict-resolution mechanisms to solve these types of disputes (*Lamprea, 2012*).

The Tutela claims have effectively overruled exclusions and authorisations as a means of managing claim costs and abuse, by transferring the risk directly onto the state at the taxpayer’s expense, which is not sustainable²⁴. The government has recently introduced a number of measures to bring this situation under control but it is still not clear to what extent this will resolve the situation.

3.3.7. Out of pocket expenses

The use of solidarity between those who have the ability to pay and those who do not, the contribution of general, departmental and municipal taxes and out-of-pocket expenditure has allowed the consolidation of an almost universal coverage, with more than 23 million poor and vulnerable people now having guaranteed access to health services. As a result, private expenditure on health, as a share of GDP, decreased from 3.3% in 1993 to 1.2% in 2003 and out-of-pocket expenditure dropped from 2.7% of GDP in 1993 to 0.6% in 2003 and 0.38% in 2009. From 2002 to 2010, the Government defined and institutionalized social protection strategies to protect the economically active population and, in some cases, the poor and vulnerable populations (*UNDP, 2011*).

However, at USD 3.8 billion in 2011 (*World Bank Indicators*) out-of-pocket expenditures continue to be an important source of private spending, which remains around 30% of total health expenditures (*World Bank, 2012*). Although high, this is considerably lower than many other countries in the region.

3.4. India

India is the largest non-life insurance market in the region and premium income has more than doubled since initial liberalisation of the formerly state controlled insurance market in 2000 and has consistently outstripped global growth. By 2007, private companies had achieved a 35% share of the non-life market. At the end of September 2013 there were 52 insurance companies.

1991 Constitution, following the filing of a Tutela injunction by a plaintiff the judge or Court assigned to the case has less than ten days to hand down a final decision on the matter. Unlike ordinary litigation, the Tutela eliminates most of the usual legal formalities and is a fast-track judicial procedure that does not require the involvement of lawyers.

²⁴ A published study shows that Colombia has, by far, the highest per capita rate of right-to-health litigation among comparable middle-income countries. See Ottar Mæstad, Octavio Luiz Ferraz & Lise Rakner, *Assessing the Impact of Health Rights Litigation: A Comparative Analysis of Argentina, Brazil, Colombia, Costa Rica, India and South Africa*, in *Litigating health rights: Can courts bring more justice to health?* p 273, (Alicia Yamin & Siri Gloppen eds., 2011).

Type of business	Public sector	Private sector	Total
Life insurance	1	23	24
Non-life insurance	6*	21**	27
Reinsurance	1	0	1
Total	8	44	52
* Includes specialised insurance companies – ECGC and AIC			
** Includes four standalone health insurance companies – Star Health & Allied Insurance Co, Apollo Munich Health Insurance Co, Max Bupa Health Insurance Co and Religare Health Insurance Co.			

Table 7: Registered insurers in India (30 September 2013)

Source: IRDA Annual Report, 2012/13

Five million new individual microinsurance policies generated premiums totalling USD 1.9 billion in 2012/13 (IRDA Annual Report, 2012/13). Table 7 provides a breakdown of the types of insurance classes that these companies provide.

Health care in India is financed through various sources, including individual out-of-pocket payments, central and state government tax revenues, external aid and profits of private companies. Organizations such as the Raigarh Ambikapur Health Association (RAHA) and the Self Employed Women’s Association (SEWA) pioneered the first health insurance initiatives with a strong social perspective while targeting low-income groups facing some worse forms of exclusion such as the tribal minorities and poor self-employed women.

The opening of the insurance market to private players in 1999 spurred further interventions with the realization of a huge market left untapped among disadvantaged groups. This resulted in tie-ups between insurance companies and organised groups, such as NGOs and MFIs in partner-agent relationships that aimed to target these groups. The Insurance Regulatory and Development Authority (IRDA) encouraged this trend and helped to provide expertise. However, difficulties with a “one-size-fits-all” strategy in respect of a heterogeneous public, high transaction costs and weak understanding of insurance in the communities limited growth of health (micro) insurance.

The subsequent involvement of various state departments and provision of a subsidy for the below poverty line population facilitated the growth of a variety of national, regional and local health insurance schemes, as illustrated by Table 8.

#	Organization	Geographic. Outreach	Ownership	Number Insured ‘000	Potential Target ‘000
1	Aarogyashree Yojana Trust (8)	Andhra Pradesh	Public-Private Trust	36 700	70 000
2	Ministry of Labour & Employment RSBY (50)	All India	Public Department	33 997	300 000
3	Ministry of Textiles – Handloom (52)	All India	Public Department	6 120	6 480
4	Ministry of Health & Family Welfare (47)	Madhya Pradesh	Public Department	5 490	5 490
5	Yeshasvini Trust (99)	Karnataka	Public-Private Trust	3 047	6 000
6	Ministry of Textiles – Handicraft (53)	All India	Public Department	2 700	2 970
7	Students Health Home (87)	West Bengal	Public Department	1 587	5 600
8	Village Welfare Society (95)	West Bengal	MFI	766	1 500
9	Shree Keshtra Dahramsthala RDP (84)	Karnataka	NGO	721	800
10	Bharatiya Samruddi Inv. & Cons. S. (13)	Andhra Pradesh+	MFI	525	2 000
11	Swayam Krishi Sangam (89)	Andhra Pradesh+	MFI	472	2 700
12	Andhra Pradesh – State Police Trust (3)	Andhra Pradesh	Public Department	400	400
13	Rajasthan Dairy Cooperative Federation (69)	Rajasthan	Public Private Trust	384	600

14	Karnataka – State Police Trust (36)	Karnataka	Public Department	350	350
15	Self-help Group Federation – Kerala (78)	Kerala	CBO	225	425
16	Self-Employed Women’s Association (75)	Gujarat+	Trade Union	195	300
17	Bhartiya Integr. Social Welfare Agency (15)	Orissa	MFI	183	1 000
18	Grameen Kota (29)	Karnataka	MFI	175	300
19	Sampoorna Kutmba Arogya Patlakam (72)	Andhra Pradesh	CBO	170	250
20	Solapur Cooperative Federation (86)	Maharashtra	CBO	170	300
	Total Top Twenty			94 377	407 465
	Total Top Ten			91 653	400 840

Table 8: Top 20 health microinsurance schemes, 2009

Source: India National Review, Health micro-insurance schemes, ILO, 2009

The ten top schemes cover 91.6 million people, representing 95% of the total insured population. This reflects the huge disparities among Indian health insurance schemes in terms of size and impact (ILO, 2009).

3.4.1. Public health insurance

Three initiatives, in particular, form the backbone of pre-paid public sector healthcare:

- i. National Rural Health Mission (NRHM), established by the National Commission on Macroeconomics and Health (MOHFW) in 2005 with the Ministry of Health and Family Welfare.
- ii. Rashtriya Swasthya Bima Yojana (RSBY) of the Ministry of Labour and Employment (MoLE).
- iii. Rajiv Aarogyasri scheme launched by the state government of Andhra Pradesh.

These schemes were designed and implemented by different agencies, almost in parallel, over the same time period, using different financing and delivery approaches. Although this distinction in focus was the result of their respective evolutionary development and not planned, they are complimentary to each other and have contributed to increased coverage for bottom-of-the-pyramid beneficiaries. They have the potential to contribute to seamless, comprehensive coverage for primary, secondary, and tertiary care, drawing upon their respective strengths and synergies (Nagpal, 2013).

The NRHM is the flagship initiative of the MOHFW and represents its efforts to rejuvenate and reshape state health systems, aimed at strengthening India’s public health delivery infrastructure and improving service delivery, especially in rural areas and with a focus on primary care. Through reforms in the public health system, NRHM efforts have facilitated an increase in outpatient and inpatient utilisation, institutional deliveries, availability of ambulances, presence of community health worker in every village, better availability of drugs and diagnostics and most importantly a visible attempt to create a credible public health system.

As part of the NRHM, the Government of India launched Janani Suraksha Yojana (JSY), a fully sponsored maternity benefit scheme in 2005. The main objectives of JSY are to reduce maternal and neo natal mortality by promoting institutional delivery for making available medical care during pregnancy, delivery and post delivery period. The scheme aims to

promote institutional deliveries among pregnant women living below the poverty line in all the states and union territories²⁵ (UTs) of India (*Government of India, 2010*).

Rashtriya Swasthya Bima Yojana (RSBY) is focused on providing financial security to beneficiaries below the poverty line (BPL) for hospitalization related expenses and to improve access to quality health care. It gives beneficiaries the choice to select any public or private health-care provider for treatment. The scheme targets a potential population of 300 million BPL workers and their families. Although “universal” by definition, the RSBY scheme allows for some flexibility in the way each state will choose to implement it by partnering with different insurance companies and social aggregators.

RSBY Data	
Number of families enrolled	± 18 million
Number of persons enrolled	± 70 million
People covered as percentage of total target population	24%
Number of states where RSBY is being implemented	23
Percentage of states that have started RSBY implementation	80%
Number of hospitals accredited	5 945
Number of people who have received treatment	850 000
Average hospitalisation rate	3%
Total expenditure on premium subsidy of RSBY	USD 174.9 million
Expenditure on RSBY premium as a percentage of GDP	0.013%
Administrative expenditure on RSBY by Government of India	USD 1.09 million

Table 9: Highlights of the performance of the RSBY scheme by the end of July 2010

Source: Ministry of Labour and Employment in UNDP, 2011

The Rajiv Aarogyasri scheme focuses primarily on tertiary coverage, paying for the treatment of serious and life-threatening ailments for 20.4 million families across the state of Andhra Pradesh, comprising all poor families and a significant segment of the lower-middle class population in the state. Over the five years up to the end of 2009, several other states (including Karnataka, Tamil Nadu, Maharashtra, and Gujarat) have launched their own tertiary-care programs modelled on the Rajiv Aarogyasri scheme, with some state- specific differences in their design and implementation arrangements.

3.4.2. Private health insurance

Health insurance business is growing rapidly in India. As at 31 March 2013 four insurers were licensed to operate as stand-alone health insurance companies and permitted to underwrite business in health, personal accident and travel insurance. They were Star Health and Allied Insurance Co Ltd, Apollo Munich Health Insurance Co Ltd, Max Bupa Health Insurance Co Ltd and Religare Health Insurance Co Ltd. During 2012/13 these companies achieved gross direct premium income of USD 323 million, which was 4% more than the previous year. Underwriting results for this group showed losses of USD 71.2 million, which was also slightly less than the losses of USD 71.6 million the year before (*IRDA Annual Report, 2012/13*).

In addition to the stand-alone health insurers, other non-life companies also did health insurance business of which the premiums came to USD 2.6 billion in 2012/13 (USD 2.2 billion in 2011/12), nearly a six-fold increase (*IRDA Annual Report, 2012/13*).

²⁵ A Union Territory is a type of administrative division in the Republic of India. Unlike states, which have their own elected governments, union territories are ruled directly by the Central Government.

With the Health Insurance Regulations (2013) and Guidelines for Standardisation in Health Insurance, the Insurance Regulatory and Development Authority (IRDA) has helped to standardise definitions for commonly used terms and medical procedures. It is hoped that this will improve transparency and bring rationalisation in design of clear and simple products together with uniformity that will improve policyholder understanding. In 2012 IRDA established a health insurance forum where representatives from all the stakeholders in health insurance²⁶ can interact with a view to advise and assist IRDA with further improvements in health insurance, health provider services and all other related issues.

A business analysis of health microinsurance schemes in India conducted by the Microinsurance Learning and Knowledge (MILK) project found that, with or without public subsidy, Indian health microinsurers struggle to find a sustainable business model. For private schemes, it is expenses, rather than claims, that are driving costs (*Koven et al., 2013*). Another review of health schemes in India and Bangladesh found more positive results (*Weilant, 2013*) and explores how implicit or explicit subsidies from the Government or private organizations can support a range of health microinsurance products, from hospital cash to comprehensive inpatient and outpatient cover. Two of the schemes were able to use subsidies to reach viability.

3.4.3. Community based healthcare funding

Facility-level “*Patient Welfare Societies*” existed in states such as Kerala, Madhya Pradesh, and Rajasthan well before the onset of NRHM, pooling nominal fees levied on the non-poor and obtaining services at public health facilities (*Nagpal, 2013*). Much of the healthcare funding schemes in India combines elements of public, private and community-based approaches. Few of the large schemes can therefore be seen as purely community-based.

However, experiments with community based health insurance (CBHI) in India are led by community-based organisations such as the Yeshasvini Co-operative Farmers Trust, Karuna Trust and others, but their reach, scalability and sustainability appear limited at present. In this regard the Aarogyashree Yojana Trust and RSBY schemes represent 76% (2009) of all beneficiaries participating in health microinsurance schemes (*National Review, 2009*).

Most of these schemes provide primary and secondary care to its target population, with contributions from the local communities themselves and in some cases with additional financial support from external resources (*Devadasan et al, 2006; Reddy, 2011*).

The Self Employed Women’s Association (SEWA) is an Indian trade union registered in 1972 which today has over 1.3 million members in nine states of India. SEWA members are poor women workers in the informal economy, including agricultural labourers, service providers, home-based workers, and vendors (*Desai et al, 2013*). VimoSEWA is the insurance branch of the trade union that provides health insurance cover for inpatient admission in which participation is voluntary. The current membership is reported to be around 120 000, with 52% of the policyholders being women²⁷.

The Yeshasvini scheme in Karnataka is an example of a government subsidised voluntary health insurance scheme, targeting the poor. Yeshasvini targets more than 12 million people

²⁶ Insurers, Ministries, National Accreditation Board for Hospitals, Hospitals, Service Providers, Third Party Administrators etc.

²⁷<http://www.populationfoundation.in/taxonomy/term/17/0>

registered in cooperative societies in Karnataka. The representation is stronger in the rural sector where Primary Agriculture Cooperative Societies (PACS), rural credit and savings cooperatives, sugarcane production and dairy cooperatives account for about 8.2 million people (Reddy et al, 2011).

3.4.4. Membership

All forms of insurance, including the Central Government Health Scheme (CGHS), Employees' State Insurance Scheme (ESIS), Government Sponsored Schemes and Private Health Insurance together, covered approximately 302 million individuals or 25% of India's population in 2010 (Reddy et al, 2011).

The National Rural Health Mission (NRHM) relies on the standard BPL identification documents²⁸ and does not need or use any separate eligibility or enrolment system, except for certain schemes such as Janani Suraksha Yojana, which are aimed at the below poverty line (BPL) population. In theory, therefore, anyone walking into a public health facility, regardless of income, geography, or other factors, can receive NRHM benefits (World Bank, 2013).

By September 2012, RSBY had enrolled over 35.6 million families from 25 states in India who were eligible for inpatient treatment in more than 10,000 hospitals included in RSBY's network across the country (Nagpal, 2013; KPMG International, 2014).

The Rajiv Aarogyasri scheme has been implemented in all the districts of Andhra Pradesh and covers 20.4 million families below the poverty line residents and a significant segment of the lower-middle class in that state (85% of the state's population). Enrolment is automatic for the BPL ("white card") cardholders of the state and for others who are similarly eligible, based on existing state databases of these beneficiaries. There is no specific enrolment process nor is any enrolment fee required (Nagpal, 2013).

Despite enormous efforts to scale up health insurance as a mechanism to reduce financial burden due to healthcare expenses, the penetration of private health insurance is still very low in India. In the financial year 2008/09, voluntary private health insurance schemes had between 32.7 million (Government of India, 2009) and 50 million individuals (Reddy et al, 2011), which only accounts for approximately 3% to 5% of the Indian population²⁹ (Vellakkal, 2012; Reddy et al, 2011). Unfortunately membership numbers that coincide with the recent significant growth in private health insurance premiums could not be obtained.

3.4.5. Benefits

The NRHM benefits package is determined by funding from central government and the extent to which it is augmented by the state government's own resources. In theory, this public health system of the country provides comprehensive, full-spectrum health services, and is open to everyone but the focus of NRHM funds continues to be on primary care and public health interventions, with some funding for secondary care and virtually none for

²⁸Families below the poverty line (BPL) are estimated through a rural household survey conducted by different States.

²⁹This figure is after excluding the fully funded government-sponsored health insurance programmes such as RSBY, Central Government Health Scheme (CGHS), Ex-Servicemen Contributory Health Scheme (ECHS), Employees' State Insurance Scheme (ESIS), state-level programs in Andhra Pradesh, Tamil Nadu and Karnataka.

tertiary care. As a result an overwhelming 80% of outpatient treatment and as much as 60% of inpatient care continues to be obtained outside the public health system. However, some public health activities under NRHM can include their own community-level beneficiaries, such as lists of pregnant women, children, tuberculosis patients, and couples eligible for contraception use, for implementation and monitoring of public health interventions (Nagpal, 2013).

In contrast to NRHM, this RSBY is a demand-side financing scheme that purchases health insurance from participating insurance companies, presently 13, that they are partnering with. RSBY provides hospitalisation coverage up to approximately USD 650 per annum for a family of five on a floater basis³⁰. Transportation charges are also covered up to a maximum of approximately USD 22 per year, with a limit of around USD 2.20 per hospitalisation. In addition to these benefits, pre- and post-hospitalisation expenses incurred one day before hospitalisation and up to five days from the date of discharge from the hospital are covered. Another special feature of the scheme is that all pre-existing diseases under RSBY are covered from day one and there is also no age limit for eligibility under the scheme (Nagpal, 2013; KPMG International, 2014).

Rajiv Aarogyasri covers a list³¹ of 938 inpatient (IP) procedures and 144 medical diseases that are listed by the scheme, which are largely tertiary and mostly surgical. The system is entirely cashless³² and there is no deductible or co-payment for seeking care (La Forgia and Nagpal, 2012).

Virtually all private health insurance products in the Indian insurance market are derived from a benefit structure known as “Mediclaim” and covers expenses incurred by a policyholder during hospitalisation due to illness, diseases or injury. It is available to persons between the ages of five and 80 years³³. Children between the age of three months and five years of age can be covered if one of the parents is also covered.

The benefit limits vary from USD 328 to USD 11 000 per annum, while the premium are based on the benefit amount and the age of the person. These policies can be written for groups or individuals and can cover individuals or families under a single benefit amount (often called “a family floater”³⁴).

Mediclaim requires new enrolees above 45 years of age to undergo a pre-acceptance medical check-up and has stringent pre-existing condition/disease exclusions. It excludes expenses on hospitalisation for certain diseases during the first year.

Most schemes still cover a limited scope of health benefits to their members, mostly restricting the cover to hospitalisation costs along with various restrictions, exclusions and service caps.

³⁰This type of plan provides coverage for the entire family so that the cover limit can be shared by all the insured family members rather than having a smaller per person benefit limit. This approach assumes that not every member of the family will need to claim in any one benefit year.

³¹<https://www.aarogyasri.gov.in/ASRI/FrontServlet?requestType=PublicViewsRH&actionVal=HomePgSurgList&scheme>

³²“Cashless” means that the patient need not make any payments to the health providers when receiving services covered under the program, and all such payments are directly settled between the programme and the hospital.

³³ The maximum age of coverage can be increased to 85 years if the policy has been renewed without any break in coverage.

³⁴ This type of plan provides coverage for the entire family so that the cover limit can be shared by all the insured family members rather than having a smaller per person benefit limit. This approach assumes that not every member of the family will need to claim in any one benefit year.

3.4.6. Contributions

Benefits of the National Rural Health Mission (NRHM) are funded 100% by the Government of India from the parliamentary budget and “members” are not required to make a contribution. RSBY beneficiaries need to pay around USD 0.60 as a registration fee, while the central and state governments pay the premium (between USD 7.4 and USD 15.5 depending on the district) to the insurer selected by the state government on the basis of a competitive bidding. Rajiv Aarogyasri is state-financed and targets individuals living below the poverty line in Andhra Pradesh (*BearingPoint, 2008; Krishnaswamy et al., 2011; Vellakkal, 2012*).

The overall average annual premium for private (commercial health insurance in India is reported to be around USD 25, although this can also be between USD 4 and USD 21 per year with schemes such as Vimo Sewa. The sum insured under the Medclaim policy ranges from USD 600 to USD 10 000 and the premium varies according to the amount of insurance cover. Given the low per capita income of USD 550 annually (*Government of India, 2005*), most Indians can only afford to buy the minimum Medclaim cover of USD 600 at a premium of USD 10 to USD 12 per year. This is in line with the benefit of USD 600 provided by the RSBY scheme for the BPL population (*BearingPoint, 2008; Vellakkal, 2012*). Studies in India have shown that the average “willingness to pay” for health insurance among rural Indians is only around USD 2 per annum (*Mathiyashakan, 1998; Dror et al., 2007*). This may explain why private health insurance penetration remains at less than 5% of the population.

3.4.7. Service delivery

All the insurance schemes currently operating in India offer beneficiaries the choice of making use of either private or public sector providers. This enables patients to take advantage of both sectors for affordable care, particularly in rural areas where lack of adequate facilities may limit choice.

NRHM has emphasised the horizontal integration of hitherto vertical disease control and reproductive and child health programmes. Beneficiaries can access the following facilities across India:

- 146 036 Sub-centres across India;
- 23 458 Primary health centres, 8 324 of which are open 24/7;
- 4 276 Community health centres;
- 15 196 health facilities in rural areas (not counting District Hospitals) open 24/7;
- 2 463 First referral units across India (*Government of India, 2010*).

A total of 10 862 hospitals (7 576 private and 3 286 government owned) have been contracted by RSBY in over 400 districts (*KPMG International, 2014*). Despite rapid expansion of population coverage in recent years, demand-side financing schemes such as RSBY and Rajiv Aarogyasri are still small players in the country’s health system. For example, even in 2011, RSBY accounted for less than 0.3% of the country’s health expenditure (*Nagpal, 2013*).

In the context of Andhra Pradesh, where 85% of the population are covered by it, the Rajiv Aarogyasri scheme is a significant player in the health system. Beneficiaries have approximately 300 contracted modern medical facilities and are navigated through the

health care system by *Aarogya Mithras*, or patient advocates, hired to oversee each hospital in the contracted network. In many cases, Rajiv Aarogyasri beneficiaries make up 20% to 70% of inpatient admissions at these hospitals. Anecdotal evidence suggests that the private health care sector has made substantial new investments in establishing facilities in Andhra Pradesh as a result of the business opportunity created by this scheme (*Nagpal, 2013*).

Evidence from schemes suggests that private hospitals dominate the “top 20 list” of hospitals in terms of number of admissions. Figure 11 illustrates that use of private sector facilities dominate in most schemes. The CGHS run by the Central Government for its employees provides 100% inpatient care through private network hospitals. Except for ESIS, which continues to rely on almost half of its health care needs from its own network hospitals, the other schemes substantially depend on private hospitals.

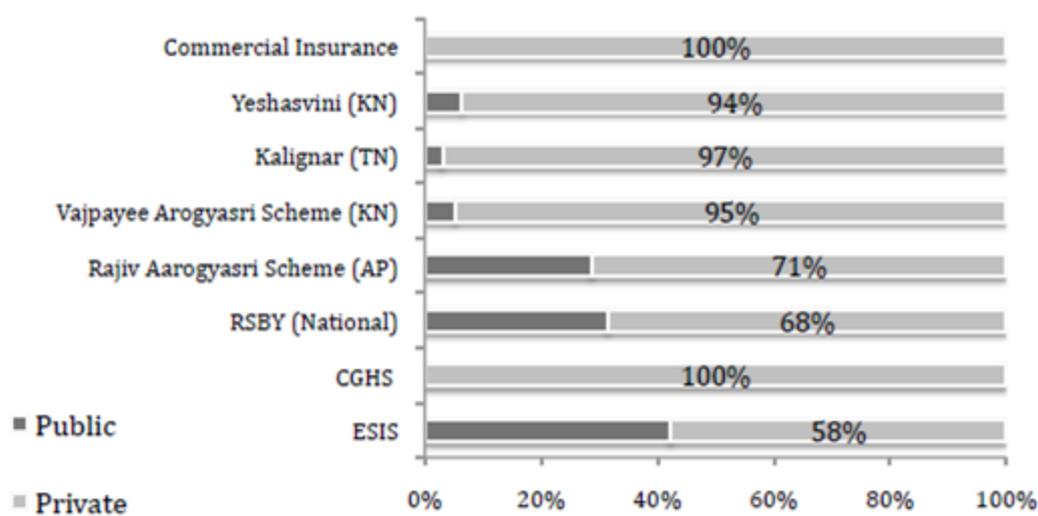


Figure 11: Percentage of private and public hospitals networked by schemes 2010

Source: Reddy et al, 2011, p 36

3.4.8. Proportion of costs covered

The cover provided by the inpatient schemes (RSBY and Rajiv Aarogyasri) are entirely cashless on admission and when patients are treated and discharged. Immediate pre- and post-operative expenditures are included in package rates to minimize the other financial expenses to the patient and reduce the financial burden for inpatient (IP) care. However, it can be questioned whether they address the overall financial burden of ill-health experienced by the poor. Although an IP admission would be a catastrophic event for most poor people, outpatient care constitutes a much higher share of overall health expenditure than inpatient care and much of this continues to be out-of-pocket. In addition, a chronic ailment that requires regular treatment on an outpatient basis can involve higher expenditures than an inpatient procedure (*Nagpal, 2013*).

‘Co-payments’ are a way to control moral hazard, though applicable in the case of commercial health insurance targeting only the high-income populations, is less applicable in schemes targeting poor, as it may defeat the very purpose by discouraging use and increasing out-of-pocket (OOP) spending for households.

3.4.9. Out of pocket expenses

Health care in India is financed through central and State government tax revenues, external aid and profits of private companies as well as individual out-of-pocket payments. National Health Accounts data from 2004-2005 show that central, state and local governments together account for only about 20% of India's total health expenditure. More than 86% of all private health expenditures (USD 42.6 billion in 2011) consisted of un-pooled, out-of-pocket expenditures. These payments place a greater financial burden on the less healthy and the poor and deter patients from seeking necessary health care. Equally important, individual out-of-pocket payments do not pool risks. Only approximately 2% of total health expenditure (THE) is made up of external aid to the health sector.

3.5. Cross cutting issues

The governments in each of the countries we have studied have made policy commitments to progress towards some form of universal healthcare through social insurance mechanisms. Colombia's reform started in 1993 and has been able to achieve near universal coverage while achieving some reduction in out-of-pocket spending. Ghana's reforms are more recent, starting in 2003, yet it has managed to achieve significant gains in health coverage and has also reduced dependence on out-of-pocket spending. The government of India has mobilised funds for healthcare by subsidising insurance premiums as well as healthcare facilities. Kenya established the National Hospital Insurance Fund (NHIF) in 1966 to enable all Kenyans to access quality and affordable health services. The NHIF has been restructured on a number of occasions and efforts to improve enrolment in the informal sector are ongoing.

In spite of these efforts, all of the four countries are experiencing significant challenges with regard to penetration of prepaid healthcare and persistently high levels of out-of-pocket payments. Only Colombia has achieved enrolment of more than 80% of its population and Kenya (20%), Ghana (35%) and India (25%) all have limited participation. All of these countries have less than 5% of the population participating in voluntary private health insurance. Kenya and India both suffer from low health expenditure (less than 40% of THE) by government.

All of these countries are hampered by a lack of adequate healthcare facilities and qualified medical personnel. Since insurance plays an important role in mobilising and allocating resources that enable investment in healthcare facilities, it can be argued that the failure to achieve meaningful participation in prepaid schemes is contributing to shortcomings of the health system.

In all of these countries health insurance has so far largely failed to become sustainable without external subsidies in spite of the fact that most of the available covers continue to focus only on inpatient benefits. An in-depth review of the way in which prepaid healthcare is structured, distributed and managed is therefore urgently needed.

One of the ways in which value for money of insurance products can be measured is by the ratio of benefit payments compared to the total premium paid. When this ratio is too low, the policyholders will question the value of the insurance and may not renew their cover. This may impact on the volatility of claims and lead to the discontinuance of the product by

the insurer. Since the insured lives who are more likely to claim will continue to renew, the claim ratio may also increase as the low claiming lives withdraw. When the ratio of benefit payment to premiums paid, on the other hand, becomes too high, the product may not be sustainable and is likely to be cancelled by the insurer. Claims experience on existing insurance products can therefore be an important indicator in premium setting.

However, claims experience, although important, is not the only cost driver in health insurance. In this section we will also discuss the effect of issues such as product design and provider network management on the cost of health microinsurance. Although the cost of management and administration are also key elements of any health insurance programme, it is not part of this study as it is already included in other ongoing studies.

4. Cost drivers

4.1. Claims experience

4.1.1. Kenya

Pay-out of benefits by the NHIF has increased over time, as indicated by Figure 12, with paid claims growing from USD 14 million in 2005 to USD 39.1 million in 2010. The ratio of the number of claims to the number of members increased from 7.8% in 2006 to 10.7% in 2010. The average amount paid per claim similarly increased from USD 95 to USD 127. The annual amount paid per registered member increased from USD 8.60 per member to USD 13.81 (NHIF, 2011).



Figure 12: NHIF claims as a percentage of premiums

Source: NHIF website, <http://www.nhif.or.ke/healthinsurance/>

The increasing trend in the claims ratio is the result of a deliberate strategy of the NHIF to increase revenues by aggressively increasing membership registration as well as aiming for higher levels of efficiency, improving the public's perception of value by expanding the benefit package and rebranding.

This has had the following results:

- increased enrolment by the informal sector;
- increased level of benefits paid to members and their beneficiaries;
- contribution rates have stayed the same;
- growth in contributions averaging between 11% and 14.9% per annum between 2006 and 2010 as a result of increasing enrolment.

The percentage of members that claim has been increasing and could be attributable to both the increase in membership and an increased awareness by members of the NHIF products

and services. It may also be due to an increase in the number of accredited facilities that have made access to health facilities easier.

The costs of private-for-profit institutions differ strongly, and in particular the costs of inpatient stays have a wide range with some private-for-profit institutions offering low quality at low costs and do not serve the rich. The average claim amount for private hospitals has consistently been the lowest from 2004 to 2010 whilst there was no difference between the costs of community and mission hospitals. However, from 2006 onwards the average inpatient claims were higher for Mission Hospitals, and comparable to those offered to Government hospitals (*Flessa et al, 2011*). The average duration of stay for both private and community hospitals was constant between 2005 and 2010. These are also the facilities with the lowest durations of stay.

Only 8 private insurance companies that offered health insurance achieved an underwriting profit in 2012 and only 2 companies achieved an underwriting profit in all 3 years since medical insurance started being reported separately in 2010. This is illustrated in Figure 13 and demonstrates the difficulties that insurers have in devising sustainable health insurance products. This may also explain why there is such limited involvement in HMI by commercial insurers.

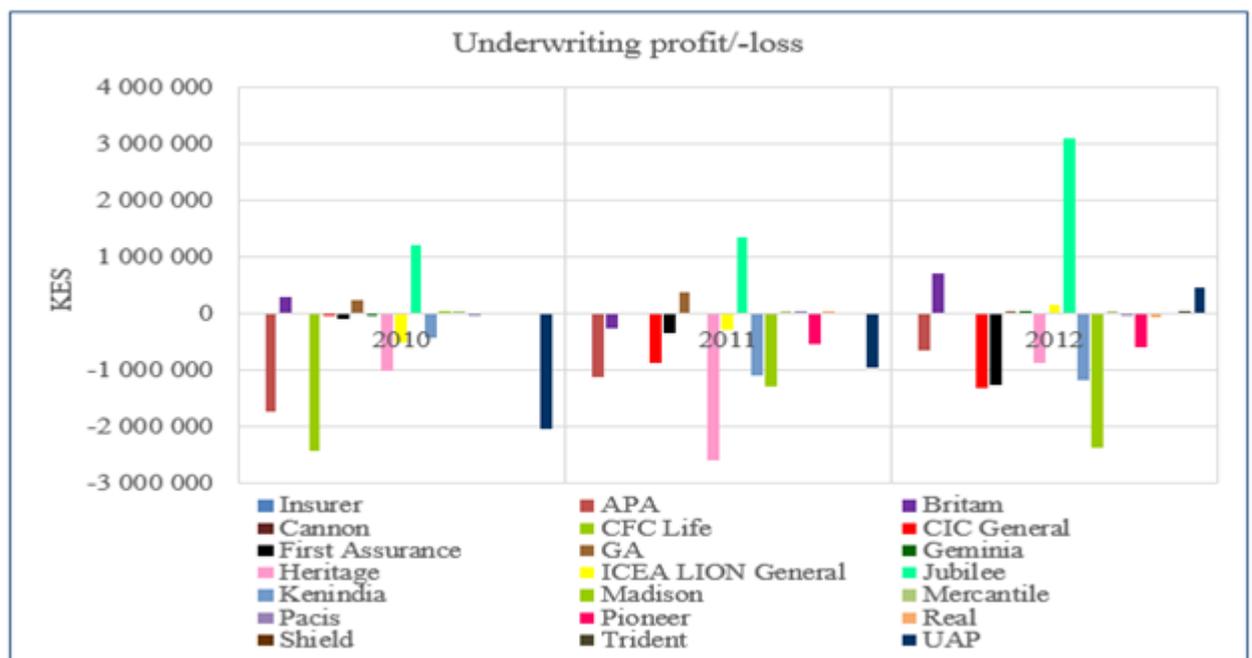


Figure 13: Kenya health insurance underwriting results

Source: AKI Insurance Industry Reports, 2012

Although more up to date results could not be obtained in respect of community-based programmes, the results for the Jamii Bora scheme that are illustrated in Table 10 would also not have been sustainable and may have contributed to the subsequent closure of this scheme.

	Contributions	Claims	Pay-out Ratio
2003	19 834 244	19 322 485	97.4%
2004	21 180 099	20 214 140	95.4%

2005	23 978 100	24 348 586	101.5%
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Table 10: Contributions and claims summary Jamii Bora 2003-2005

Source: Deloitte Consulting, 2011 from Abt Associates, Catalogue of CBHF 2006

4.1.2. Ghana

In spite of the limited participation ($\pm 35\%$ of the population) in the NHIS in Ghana, the number of outpatient (OP) visits under NHIS increased from 2.4 million in 2006 to 18.7 million in 2010. Claims payments increased from USD 28 million in 2005 to USD 363.6 million in 2011, resulting in a loss for the year of USD 28 million. Membership numbers have, however, only grown from 1.4 million in 2005 to 8.2 million in 2011. According to the NHIA projections, the reserves were expected to reduce by roughly USD 105 million per year, which would totally deplete the NHIS³⁵ unless ways could be found to raise additional revenue. Figure 14 shows the trend in claims payments compared to membership growth from 2005 to 2011.

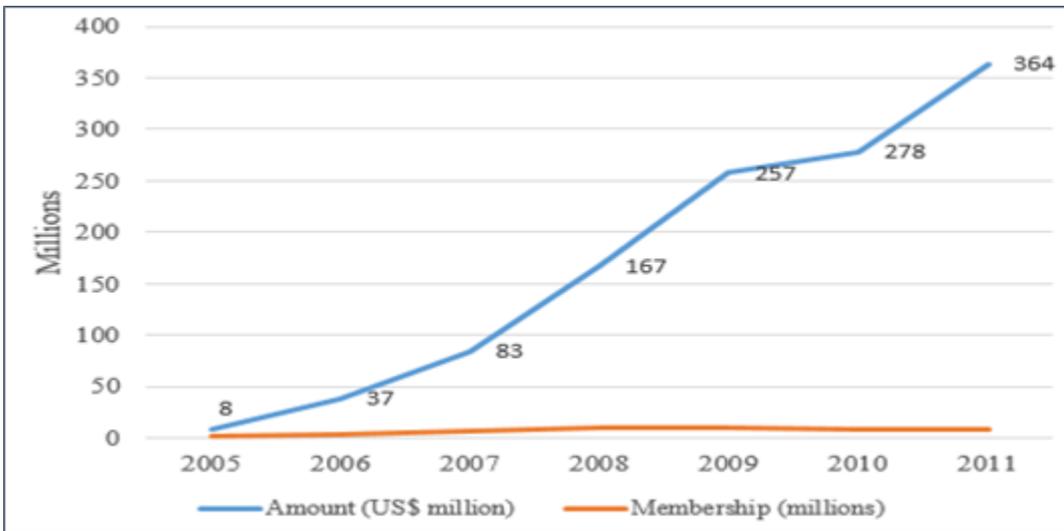


Figure 14: Claims payment trend in USD compared to membership growth

Source: NHIS Annual Report, 2011

Data could not be obtained to determine overall performance of the private health insurance sector. However, data for one active private mutual health insurer that was obtained, showed the following trend in Figure 15.

³⁵ Independent Review Health Sector Programme of Work 2010, Ministry of Health Ghana, April 2011

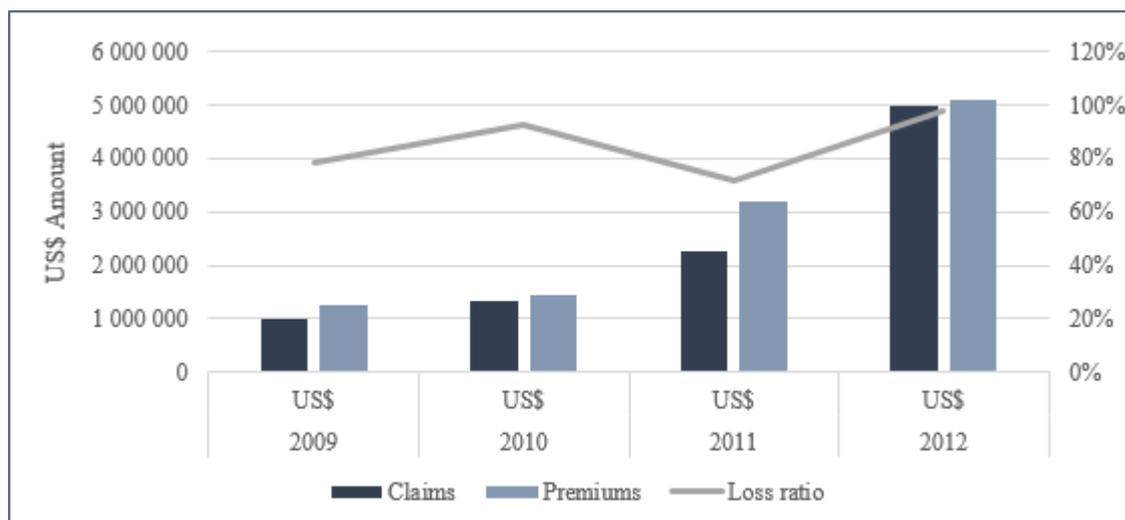


Figure 15: Claims experience - Ghana private mutual health insurer

Source: Company records provided

4.1.3. Colombia

The General System of Social Security in Health (SGSSS) is dependent on allocations from tax funding and solidarity contributions rather than “premiums” in the traditional approach. It is therefore difficult to compare premiums and claims. Total money flows in respect of healthcare services within the health system provide an indication of the cost of servicing claims. Table 11 shows that USD 8.5 billion was allocated in respect of both the contributory and the subsidised regimes in 2009. With membership of approximately 40 million, the “claims” cost per person therefore is roughly equal to USD 212 for that year. This is in line with per capita expenditure on health according to Baron (2007) of USD 152 (2000) and USD 136 (2003).

Type	Source	USD
Contributory scheme	Contributions to solidarity and Guarantee Fund (FOSYGA)	4 654 694 725
	FOSYGA Promotion & Prevention in health promoting entities (EPSs)	141 671 029
	FOSYGA surplus	391 656 363
	Co-payments & moderation fees	122 835 717
	Sub total	5 310 857 834
Subsidised scheme	FOSYGA	1 218 053 089
	General participation system (SGP)	1 351 633 716
	Others – resources of territorial entities	312 022 433
	Surplus	278 249 561
	Sub total	3 159 958 799
The uninsured (Vinculados)	General participation system (SGP)	517 779 685
	Transfers to departments	173 444 576
	Resources of territorial entities	520 862 032
	Catastrophic Risks and Traffic Accidents (ECAT), Mandatory Insurance for Road Accidents (Seguro Obligatorio de Accidents de Transito, SOAT), Support to State Social Enterprise (ESE)	52 219 751
	Sub total	1 264 306 044
	GRAND TOTAL	9 735 122 677

Table 11: Consolidation money available for the health sector, 2009

Source: Cabrera, 2011

4.1.4. India

Since its inception in 2008, the RSBY scheme has completed one year in 182 districts (out of a total of 640 districts in India) in 22 (out of 35) states, while another 47 districts have completed two years of operation. A total of USD 220 million has been paid as premiums by the government in respect of 47 million insured individuals. Insurers have paid out close to USD 130 million for 1.47 million hospitalisation cases. The average amount per claim was USD 100³⁶. In addition to claims payments, RSBY also paid USD 64 million (17% of premiums income) for issuing smartcards in the two years up to May 2011. Cost of claims totalled 49% of premium income. The scheme was profitable for insurers in year one, though profitability dropped significantly in year two as seen from the trends in expense ratios. The average amount claimed was USD 99.6 in year one, compared to the National Sample Survey Organization's (NSSO) average expense per person per year for hospitalisation, which is USD 105 for the two lowest quintiles by income. We see that very few families in the 11 selected districts have used the maximum cover. The most commonly claimed amounts are USD 222 followed by USD 67. The average amount claimed for women is higher at USD 179 than for men at USD 139. (Krishnaswamy et al, 2011).

Out of 229 districts that have completed one year, 47 have Total Expense Ratios higher than 100%, implying unprofitability, while the remaining districts have been profitable. The most significant difference contributing to the high loss ratio in these 47 district are that they have considerably higher hospitalisation rates (6.1% vs. 1.8%) compared to the more profitable districts.

Mediclaime and Jan Arogya policies experienced claims ratios in the range of 120% to 130%. Adverse selection contributes significantly to the high claims ratio, but other causes are more obscure (BearingPoint, 2008). This could be the result of the inefficiency and

³⁶ RSBY district-wise data on the completed yearly policy periods as of May 2011.

ineffectiveness of the industry itself in managing costs. A study by United Health Care (*BearingPoint, 2008*) found that the total cost of Medicaid, by its various cost components, is as follows:

- Risk Premium (58%)
- Broking Commission (18%)
- Management Expenses (18%) and
- Administration Expenses (6%).

Based on international experience for commercial insurers which usually have the lowest pay-out for actual claims, a 58% medical cost ratio for hospitalisation expense is low, raising the possibilities of bloated bureaucratic costs and/or lack of effective development of quality health products.

Figure 16 illustrates the cost of claims per member per month for the more popular schemes.

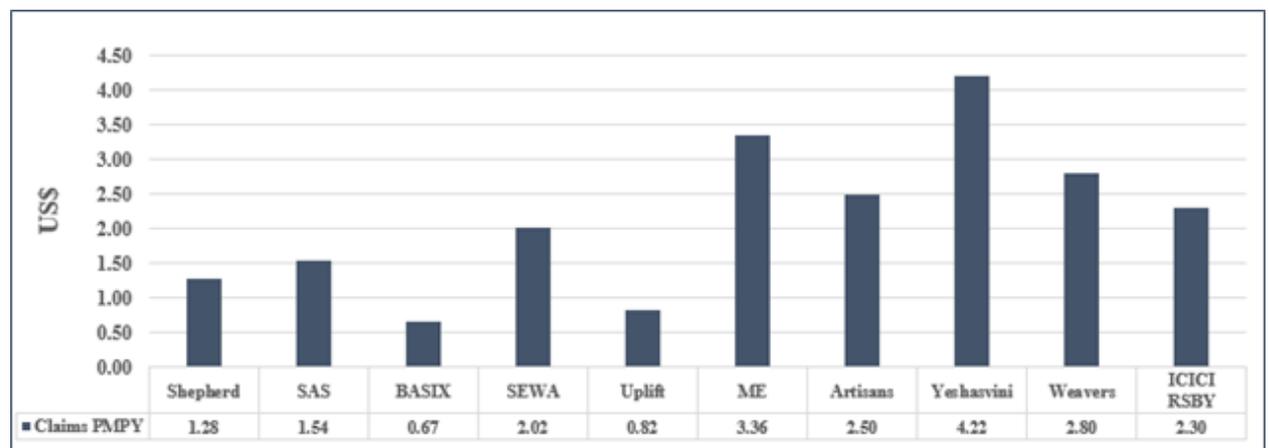


Figure 16: Cost of claims per member per year (2011)

Source: Koven et al, MILK Brief #26, 2013

4.2. Causes and incidence of claims

Low and middle income countries bear 93% of the world disease burden yet account for only 11% of global health spending (*WHO, 2010*). This burden in essence is what causes health insurance claims. This is therefore a critical element that needs to be well understood in the setting of premiums for health microinsurance (HMI).

In a report for the Dar es Salaam City Medical Office of Health, it was proposed that the disease burden be classified according to the following categories (*Mtasiwa et al, second version, 2002*):

- “Leading causes” are defined as more than 10% of burden of disease
- “Major causes” as 5-10% of burden of disease
- “Minor causes” as 0.1-5% of burden of disease and
- “Insignificant burden” as less than 0.1% of burden of disease

The authors argue that it is clear from the data that HIV/AIDS and acute febrile illness (including malaria) are the leading causes of the burden of disease, followed by diarrhoeal diseases, acute respiratory infection (including pneumonia), and injuries and accidents (where there is greatest agreements between data sources).

Other conditions that are major causes of disease from some but not all of the data sources include perinatal conditions, maternal conditions, anaemia, heart problems, cardiovascular disease and “other” infections. Notifiable diseases do not feature as important causes of disease in any of the data sources accessed. “Uncertain” causes are also a leading contributor to burden of disease.

Several of these diseases are studied in the context of comprehensive packages to tackle them in groups (e.g. antenatal and delivery care, integrated management of childhood illnesses). Also, some brief attention is given to minor illnesses, dental care, eye care, mental health, injuries and accidents, and non-communicable diseases. The results of these analyses are summarised in Table 12, which compares data sources on the burden of disease by category:

Disease or condition	Group	Mortality data	Outpatient admissions	Inpatient admissions	Community perceptions
TB & AIDS	All categories Age 0-14 years Adults	Leading cause Major cause Leading cause	No burden	Minor cause	Leading cause
Malaria/AFI	All categories Age 0-14 years Adults	Leading cause Leading cause Major cause	Leading cause	Leading cause	Leading cause
Perinatal conditions	Infants (0-4)	Leading cause	No burden	Minor cause	Not in top 5
Injuries/accidents	Infants (0-4) Children (5-14) Male adults Female adults	Not featuring Not featuring Leading cause Minor cause	Minor cause	Minor cause	Minor cause
Diarrhoeal disease	Infants (0-4) Children/adults	Major cause Minor cause	Major cause	Major cause	Major cause
Acute respiratory infection	Infants (0-4) Children (5-14) Adults	Major cause Minor cause Minor cause	Leading cause	Minor cause	Leading cause
Pneumonia	Age 0-14 years Adults	See ARI See ARI	Major cause Major cause	Leading cause Major cause	No burden? No burden?
Maternal conditions	Female adults	Major cause	Minor cause	Major cause	Minor cause
Malnutrition	Age 0-14 years	See anaemia	Minor cause	Minor cause	No burden?
Anaemia	Age 0-14 years Female adults	Minor cause Minor cause	Major cause Minor cause	Minor cause Minor cause	No burden
Cancer	Adults	Nor featuring	No burden	No burden	No burden
Cardiovascular disease	Adults	Major cause	Minor cause	Major cause	No burden??
Other infections (skin, ear, eye)	All categories	-	Major cause	Minor cause	No burden?
Uncertain	All categories	Leading cause	-	-	-

Table 12: Categorised causes of illness requiring treatment

Source: Mtsiwa et al, second version, 2002

This approach may be helpful for HMI products, both in respect of benefit structuring and benchmarking of tariffs.

4.2.1. Kenya

Kenya spent approximately USD 1 620 million on health in 2009/10, an increase of 20% over 2005/06 total health expenditures (THE). Table 13 provides a comparison of the health-related indicators for 2001/02, 2005/06, and 2009/10 (KNHA, 2009/10) that are relevant for this study.

Indicators	2001/02	2005/06	2009/10
Total population (2009 Census)	31 190 843	35 638 694	38 610 097
Provider distribution as a % of THE			
Public facilities	49,4%	44,3%	46,7%
Private facilities	35,7%	29,2%	22,2%
Providers of public programmes	n/a	n/a	13,8%
Health administration	n/a	n/a	8,4%
Community health workers	n/a	n/a	8,2%
Others	14,9%	26,5%	0%
Function distribution as a % of THE			
Inpatient care	32,1%	29,8%	21,9%
Outpatient care	45,2%	39,6%	39,1%
Pharmaceuticals	7,4%	2,6%	2,8%
Prevention and public health programmes	9,1%	11,8%	22,8%
Health administration	5,0%	14,5%	9,0%
Capital formation	n/a	n/a	3,6%
Other	1,3%	1,7%	0,8%

Table 13: Summary indicators from general National Health Accounts

Source: KNHA, 2009/10

Outpatient curative care continues to take the largest portion of THE, at 39% in 2009/10, which has remained nearly constant since 2005/06 while the portion of THE spent on inpatient curative care declined, from 30% in 2005/06 to 22% in 2009/10. The cost of pharmaceuticals increased by 30% in 2009/10 compared to 2005/06. Table 14 shows the distribution of functions purchased by THE in 2001/02, 2005/06, and 2009/10.

Functions	2001/02	2005/06	2009/10	% change (2005/06-2009/10)
Inpatient care	26 396 477 381	30 389 330 972	26 904 929 597	-11%
Outpatient care	37 168 871 577	40 383 137 802	48 035 741 883	19%
Pharmaceuticals	6 085 169 241	2 651 418 138	3 439 899 674	30%
Prevention and public health programmes	7 483 113 526	12 033 359 244	28 010 611 635	133%
Health administration	4 111 600 838	14 786 755 003	11 056 820 382	-25%
Capital formation	-	-	4 422 728 153	
Other	1 069 016 218	1 733 619 552	982 828 478	-43%
Total	82 314 248 781	101 977 620 711	122 853 559 802	20%

Table 14: Absolute values of THE by health functions

Source: KNHA, 2009/10

Preventable communicable diseases which are easy and cheaper to prevent or treat continue to be the largest contributor to morbidity. Figure 17 illustrates that some of the most common causes of both outpatient and inpatient morbidity are still related to the availability of safe water and sanitation and the lack of effective preventative actions. However, an emerging epidemic of non-communicable diseases (NCDs) which will require

more costly resources to prevent and manage must be taken into account. NCDs accounted for 50-70% of all inpatient admission over the period 2000-2008 (HMIS, 2010).

Malaria, lower respiratory infections and maternal conditions have been leading causes of inpatient morbidity in Kenya. Furthermore, infectious diseases have accounted for more than half of all inpatient morbidity in Kenya from 2000 -2008 (HMIS, 2010).

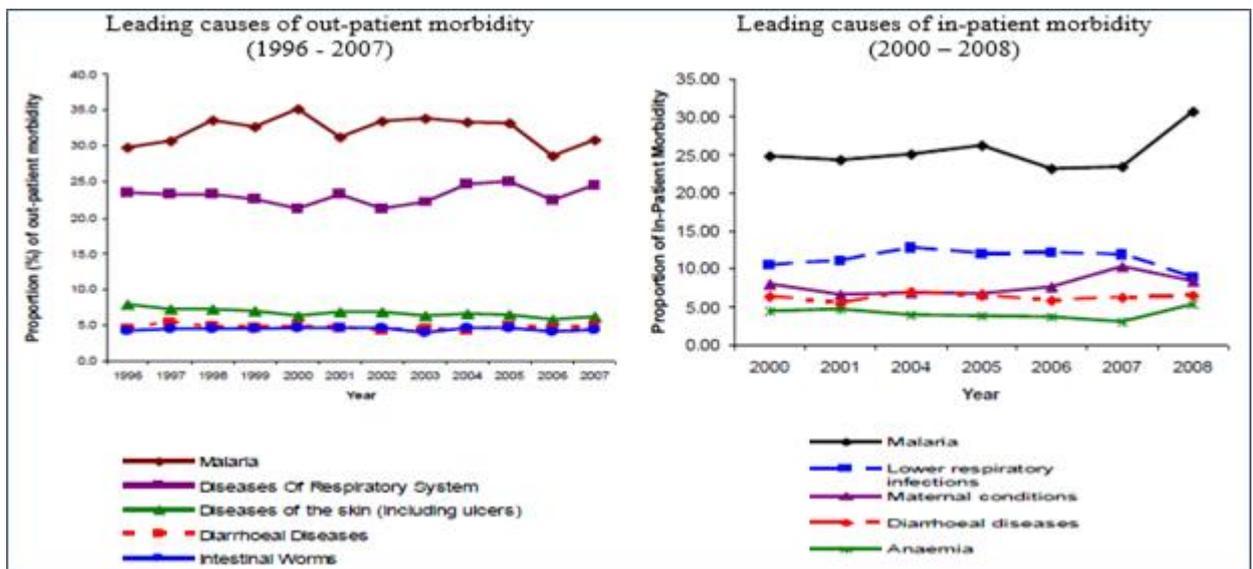


Figure 17: Leading causes of morbidity in Kenya

Source: Kenya Health Policy Framework 1994 – 2010

The Kenya Household Health Expenditure and Utilization survey of 2005 found that utilization rates of healthcare for those with insurance increased to 77.2% of all people seeking treatment between 1990 and 2003, while the national utilisation rate increased to 1.92 visits per person annually (Joint Learning Network³⁷).

In a cross-sectional survey of 8 414 households (Chuma and Maina, 2012), illnesses in the four weeks preceding the survey were reported by 52.9% of households. Hospital admissions were reported by 9.3% of households. About 3% of illnesses reported in the four weeks preceding the survey were not treated and 125 individuals (11.5%) requiring hospital admission were not admitted due to cash shortages. Table 15 shows the incidence and intensity of catastrophic health events.

³⁷ <http://www.jointlearningnetwork.org/content/national-hospital-insurance-fund-nhif>

	% of total expenditure								
	Outpatient			Inpatient			Total OOP payments		
	10%	25%	40%	10%	25%	40%	10%	25%	40%
Head count (HC)	10%	25%	40%	10%	25%	40%	10%	25%	40%
1 (Poorest quintile)	18,1	8,2	6,1	6,9	4,4	3,6	23	11,3	8,7
2	10,8	4,3	2,4	4,2	2,2	2,1	15,6	7,1	4,5
3	10,7	4,6	2,7	2,6	1,2	0,6	12,9	6,3	4
4	9,2	2,5	1,4	4,3	1,3	0,8	14,2	4,7	3,1
5 (Richest quintile)	7,5	2,4	0,9	3,1	0,7	0,4	11,9	4,9	2,9
Total	11,2	4,4	2,7	4,2	2	1,5	15,5	6,9	4,6
Weighted total head count	13,3	5,6	3,7	4,9	2,7	2,2	17,6	8,3	5,8

Table 15: Incidence and intensity of catastrophic health events

Source: Chuma and Maina BMC Health Services Research 2012

In an earlier study (UNIDO, 2010) the incidence rate for the leading causes of adult outpatient morbidity was estimated and is illustrated in Table 16.

Diseases	IR/1000 Pop
Malaria	105
Respiratory system (others)	83
Diseases of the skin	23
Diarrhoea	12
Accidents	9
Pneumonia	9
Rheumatism, joint pains etc.	8
Urinary tract infection	7
Eye infections	6
Dental disorders	4
All other diseases	76

Table 16: Incidence rate (2008) per 1000 population for leading causes of adult OP morbidity

Source: Health Ministry Information System (HMIS) Annual Report 2009

4.2.2. Ghana

The implementation of the NHIS has increased access to healthcare for Ghanaians and utilisation has increased dramatically as a result. The number of outpatient (OP) visits increased from 0.6 million visits in 2005 and 2.4 million in 2007 to 18.7 million in 2010 and to over 25 million visits in 2011. The average number of outpatient visits per member per year was between 1.4 and 1.5 in 2009 against a national average of 0.81. Inpatient admissions have also increased from about 29 000 to 1.5 million admissions over the period from 2005 to 2011 (Ghana Ministry of Health, 2011). Figure 18 and Figure 19 illustrate the trends in utilisation over the period 2001/09.

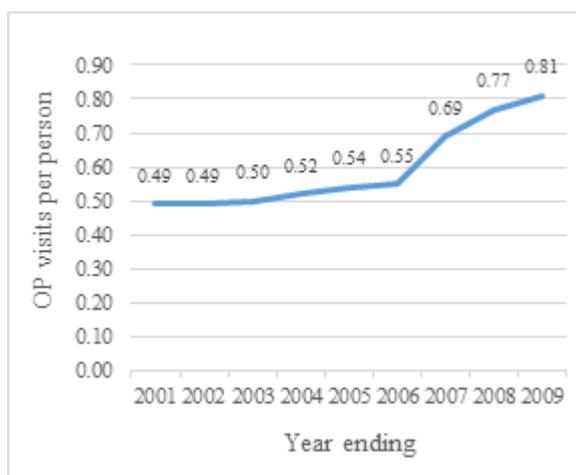


Figure 18: Trend in OP incidence per person per year (Ghana)

Source: Centre for Health Information, GHS 2010

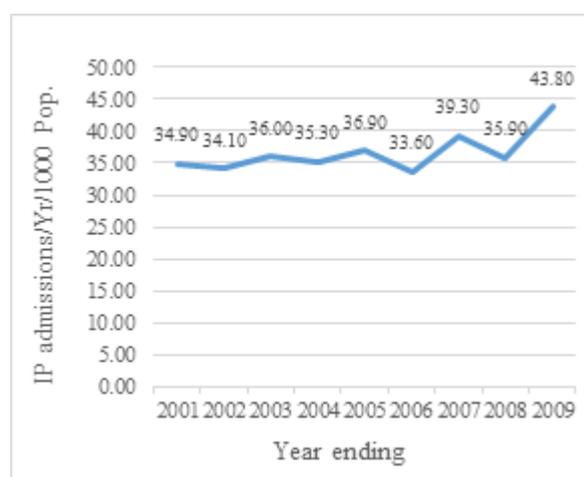


Figure 19: Trend in IP incidence per year per 1000 population (Ghana)

Source: Centre for Health Information, GHS 2010

	Disease	Incidence	%
1	Malaria	6 146 523	44,55%
2	Acute ARI	1 151 132	8,34%
3	Skin diseases & ulcers	574 604	4,16%
4	Diarrhoea Diseases	536 846	3,89%
5	Hypertension	494 125	3,58%
6	Rheumatism & joint pains	416 416	3,02%
7	Acute eye infection	264 042	1,91%
8	Intestinal worms	249 812	1,81%
9	Anaemia	203 906	1,48%
10	Pregnancy related complications	176 888	1,28%
	All other diseases	3 582 264	26,00%
	Total	13 796 558	100%

Table 17: Top ten diseases in 2009

Source: Centre for Health Information Management, 2010

Communicable diseases continue to have a significant prevalence in Ghana, although the trend in non-communicable diseases is increasing. Table 17 above shows the top ten diseases recorded in health facilities in 2009.

4.2.3. Colombia

Colombians suffer from a number of environmental diseases which follow epidemic cycles. In 2010, the most extended epidemic of dengue fever of the last 10 years occurred, with 157 152 reported cases. Malaria is prevalent in areas below 1 000 meters above sea level and epidemic cycles occur every two to seven years, with 100 000 to 120 000 cases recorded annually, of which 75% are caused by *Plasmodium vivax*. Acute respiratory infection (ARI) is a major cause of death and morbidity in all age groups, particularly in children under 5 and in people 65 or older. In 2009 a total of 3 729 cases of ARI were confirmed and 1 072 in 2010, with 232 deaths reported in 2009 and 74 in 2010 (Instituto Nacional de Salud, 2011).

Colombia has successfully eradicated poliomyelitis and eliminated measles, rubella and congenital rubella syndrome, diphtheria, and neonatal tetanus as public health problems and mumps, hepatitis B, whooping cough, and meningitis from *Haemophilus influenzae* type b (Hib) have been included in Colombia's Expanded Program on Immunization (*Profamilia, 2011; Ministerio de la Protección Social, 2010*).

Between 2005 and 2010, hypertension disorders among adults (aged 18 to 54) increased from 11.9% to 12.6%, cardiovascular diseases increased from 55.6% to 61.4%, and diabetes increased from 14.8% to 16.5%. Moreover, the prevalence of obesity between 2005 and 2010 increased from 13.7% to 16.5%, and the number of people overweight in the population increased from 32.3% to 34.6% (*Profamilia, 2010*). As risk factors increase, the mortality causes associated with chronic, non-communicable diseases have also increased. In 2008, among the 10 principal mortality causes, six were related to non-communicable diseases (*PAHO, 2010*). These conditions affect an important share of the elderly, a highly vulnerable group among the poor. Colombia has the second-highest rate of old age poverty rates in Latin America and the Caribbean (*Cotlear 2011; Torres and Acevedo, 2013*).

4.2.4. India

According to the National Sample Survey Organization (NSSO), the hospitalisation ratio³⁸ for all income groups in all of India was 2.7%. The hospitalisation ratio for the 229 districts that had completed one year in the RSBY scheme was 2.4%. According to the NSSO, the usual hospitalisation rate for the bottom two quintiles by income was 1.7% in 2004 (*Hou & Palacios, 2011*). It appears therefore, that RSBY may be enabling people to undergo hospitalisation more than they could have afforded to in the absence of the scheme.

Overall in year one, hospitalisation was higher among women (2.51%) compared to men (2.34%) which differs from the norm where men have marginally higher hospitalisation incidences than women (NSSO). We also notice seasonal trends in hospitalization. There is also a marked drop in utilisation from April through August, coinciding with the rainy season.

³⁸ The ratio of the number insured to those who claimed at least once.

Though one expects higher morbidity rates during rains, this drop may be due to preoccupation with sowing and related activities in farms.

The most commonly occurring procedures in 11 selected districts were urogenital (33%), gastro-intestinal (11%), delivery (7%) and ophthalmic (6%). Table 18 provides a more detailed breakdown. (*Krishnaswamy et al, 2011*).

Diagnosis	Percentage
Urogenital	33,40%
General medicine	16,60%
General ward (non-surgical)	11,60%
Gastrointestinal	11,20%
Delivery	7,20%
General surgery	6,80%
Ophthalmology	6,00%
Orthopaedics	2,50%
ENT	2,30%
Respiratory	0,80%
Oncology	0,70%
Cardiovascular	0,70%
ICU	0,10%
Nephrology	0,10%
Total	100.00%

Table 18: Most commonly occurring procedures

Source: *Krishnaswamy et al, 2011*

Primary care usage shows a correlation with less hospitalization, with the hospitalisation ratio in a district negatively correlated to primary care usage (but not correlated to the availability of primary care facilities in the district, or other factors such as sanitation and other amenities that prevent sicknesses). This suggests that access to primary care can reduce the need for hospitalisation. A district that has 1% higher usage of primary care has lower hospitalization ratio of 0.03 percentage points. There is therefore a case for State Nodal Agencies (SNAs) to assess the costs and benefits of increasing usage of primary care to improve the financial sustainability of the scheme (*Krishnaswamy et al, 2011*).

4.3. Treatment Costs

Successful health financing depends on prudent design of resource collection, pooling and purchasing. One of the critical purchasing design issues is the provider payment mechanism and the remuneration rates, which need to set appropriate incentives to health providers (*Mathauer, 2010*).

According to the World Health Organisation (*Faden et al, 2011*), 41% to 56% of households in LMIC³⁹ spend *all* of their health care expenditures on medicines (*Wagner, 2010*). Evidence from high-income countries suggests that higher medicines out-of-pocket co-payments result in lower utilisation and poorer health outcomes (*Faden et al, 2011*). Medicine cost is therefore a critical component of health insurance purchasing that must be considered in planning and pricing.

³⁹ Low and Middle Income Countries

In order to set remuneration rates, cost information is required, but this is usually difficult to obtain due to the lack of standard tariff structures in developing countries. Inclusion of providers in developing the costing methodology is therefore important for increasing the acceptability of remuneration rates (*Mathauer, 2010*).

Since the end of the 1980s, a number of papers have indicated the importance of costing health care services in developing countries (*Phillips, 1987; Conteh, 2004*) but it seems that studies of provider costs in developing countries and in least developed countries are still limited (*Faden et al, 2011*).

The payment mechanism for paying providers will have a significant impact on the treatment cost that is incurred by a health insurance scheme. The following three payment systems are commonly used in different jurisdictions and schemes:

- **Fee for service (FFS)** refers to a basis where billing is done at the time when the service is provided and is the most commonly used payment system. The FFS can be based on either reference pricing or negotiated tariff structures. The efficiency of this mechanism is often questioned as it can easily cause a misalignment of interests between the health insurance scheme and the provider. Studies have shown that FFS often leads to more and higher cost medicines being prescribed (*Sun et al, 2009*); more antibiotics and injectable medicines being prescribed to insured patients (*Dong^a et al⁴⁰, 1999*) and to doctors prescribing more medicines per visit and higher cost medicine (*Price, 1990*).
- **Capitation** is a system that pays the contracted service provider a fixed amount for each enrolled person assigned to them for an agreed period, whether or not that person seeks care. The main purpose of capitation is to transfer some of the risk to the provider and remove the incentive for over servicing.

Capitated schemes have been associated with prescription of more essential medicines and fewer antibiotics and injections (*Pitaknetinan, 1999; Suttajit, 2005*) as well as increased generic prescribing and increased adherence to hospital generic substitution policy (*Dong^b et al⁴¹, 1999; Tu, 2002, Mills et al, 2000*). Members of capitated insurance programmes were also prescribed fewer medicines overall and were less likely to be prescribed newer/originator medicines (*Dong^b et al, 1999; Tu, 2002, Mills et al, 2000*), but were no less likely than FFS patients to receive all the medicines they needed (*Mills et al, 2000*). Some hospitals used strategies to abandon capitated patients or deter them from registering. Patients who could afford to pay out of pocket were more likely to receive new medicines (*Dong^b et al, 1999*).

- **A Case-based payment system** reimburses all hospitals according to a pre-determined fixed rate for each treated hospital case. This system includes a set of rules, policies, and supporting management, billing, and information systems that are required to operate the system. The health purchaser pays all hospitals in the system a fixed payment rate for each treated case that falls into one of a set of defined categories of cases, such as diagnosis-related groups (DRGs). The objective is to reimburse hospitals the average expected cost in an average-performing hospital to treat a case in a given category.

⁴⁰ Dong^a - Health financing policies. Providers' opinions and prescribing behaviour in rural China

⁴¹ Dong^b - A description of outpatient drug use in rural China: evidence of differences due to insurance coverage

Therefore, fixed payment rates are set for a group of hospitals, rather than for a single hospital.

After the implementation of case-based payment for 50 inpatient procedures in Taiwan, a study found that the vast majority of hospitals coped with decreased payments by cutting the costs of medicines⁴² and avoiding prescribing medicines upon discharge (*Huang, 2005*). However, under this system, hospitals also established better communication with the National Health Insurance, conducted patient satisfaction surveys, developed practice guidelines, and trained doctors.

It is impossible in this report to provide a comprehensive review of all of the various provider payment mechanisms, and country level details for this study are reported from available data irrespective of the type of payment system being used.

4.3.1. Kenya

The results of a study, commissioned by the Government of Kenya (*Flessa et al, 2011*), show that the costs of health care services are high. However, the costs will not necessarily increase proportionally as coverage increases as a result of a high level of fixed costs. Surprisingly, the results of this study also show that private-for-profit health care facilities play an important role in providing services for the poorer population. The study findings demonstrated a high degree of cost variability across private providers.

Figure 20 illustrates the range of treatment costs per event for outpatient visits and inpatient admissions at different types of healthcare provider facilities.

⁴² The article does not say how medicine costs were cut and whether cutting medicine costs negatively impacted patient outcomes.

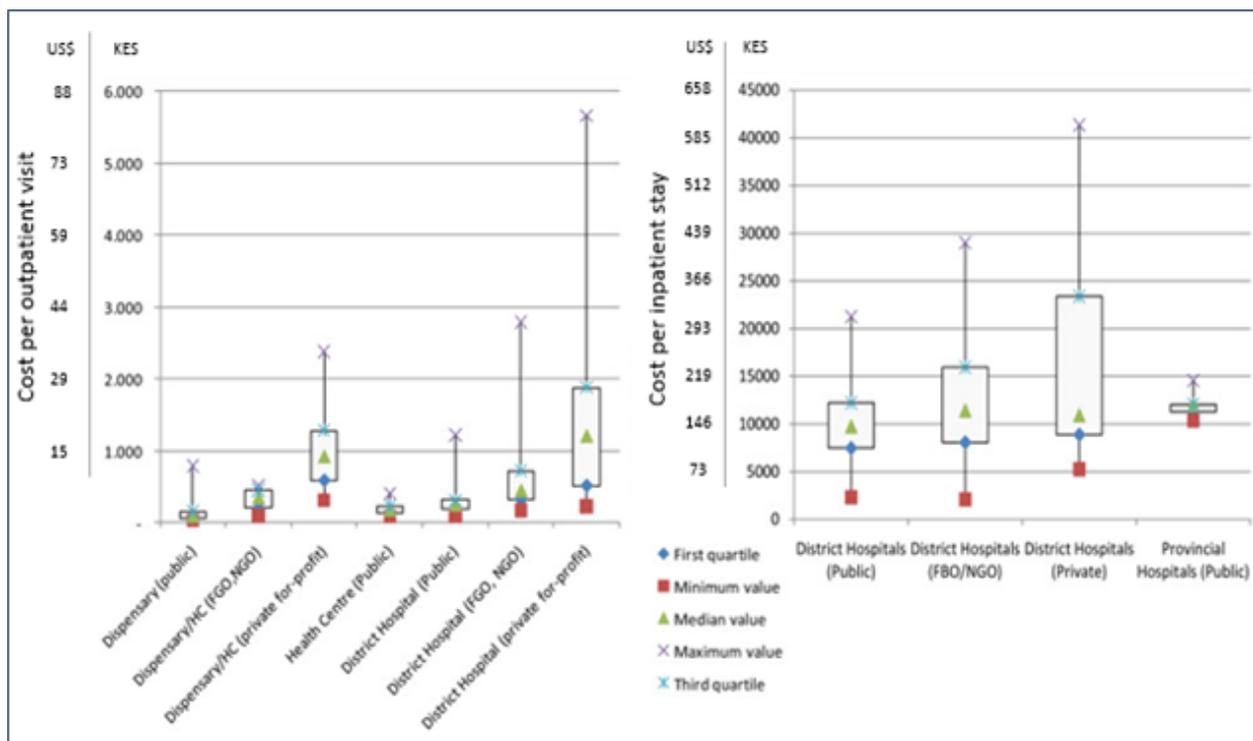


Figure 20: Treatment cost per outpatient and inpatient event in different facilities in Kenya (2006/7)

Source: Flessa et al. BMC Health Services Research, 2011

The range of costs for outpatient services in private-for-profit institutions differ strongly, and the costs of inpatient stays in particular have a wide range. Some private-for-profit health care institutions have very high unit costs, charge very high fees and serve the very rich. At the same time, some private-for-profit institutions offer low quality at low costs and do not serve the rich. This suggests that the average is not reflecting the reality of Kenyan health care costs.

	Cost per normal delivery (USD)	Cost per malaria case (children < 5 years of age) (USD)	Cost per malaria case (children & adult ≥ 5 years of age) (USD)	Cost per case of diarrhoea (children < 5 years of age) (USD)
Dispensary (Public)	11.03	2.74	2.55	11.96
Health Centre (Public)	56.34	16.98	16.13	22.10
District Hospital (Public)	47.51	15.69	15.26	20.35
Provincial Hospital (Public)	42.27	14.38	14.19	19.64
Tertiary Hospital (Public)	112.33	42.34	40.10	55.05
Dispensary, Health Centre (FBO/NGO)	99.71	27.99	25.23	30.45
District Hospital (FBO/NGO)	79.27	13.06	24.54	29.72
Dispensary, Health Centre (Private)	138.53	40.07	35.28	43.53
District Hospital (Private)	174.52	49.29	43.35	51.71
Tertiary Hospital (Private)	270.27	80.14	69.50	84.42

Table 19: Average unit costs for specific KEPH treatment episodes (2006/07)

Source: Flessa et al. BMC Health Services Research, 2011

Table 19 above illustrates the unit cost of treatment in respect of specific Kenya Essential Package for Health (KEPH)⁴³ episodes at different healthcare provider facilities and different events.

Contrary to expectations, the costs of treating any of the three selected conditions are higher in public health centres than in public district hospitals and higher still than in provincial hospitals. The costs per diagnosis at public provincial hospitals are also lower than at public district hospitals. It is important to note that the direct costs typically increase with level and type of the facility. However, indirect costs of public health centres are very high as a result of low occupancy whilst the high occupancy of provincial hospitals results in low indirect costs per patient (*Flessa et al, 2011*).

4.3.2. Ghana

The National Health Insurance Council is mandated (by Article 81(s2) (f) of Act 650) to set the guidelines of tariffs to be paid to service providers under the National Health Insurance Scheme (NHIS). This is done in consultation with the Ministry of Health and providers. The National Health Authority (NHIA) issues quarterly price indices of drugs and medicines, included in the National Health Insurance Drug List, to be paid to providers in consultation with the Ministry of Health and the Pharmacy Council. The NHIS in Ghana found that the fee-for-service payment system promoted inflation of health care costs and fraudulent claims. It therefore introduced a case-based G-DRG (Ghana Diagnosis-related Group) basis of payment for inpatient and outpatient services at clinics and hospitals.

However, unlike the DRG system in OECD countries, the G-DRG does not include drugs, which continue to be paid on a separate fee-for-service reimbursement system. Reimbursement rates differ for outpatient and inpatient care. For inpatient care at public facilities, a lower G-DRG reimbursement rate is used which excludes salaries that are provided for through the government budget. G-DRG rates also differ by type of facility (e.g. secondary or tertiary hospital).

After the introduction of the G-DRG payment system, the treatment cost escalated. Investigations subsequently showed that, for example, the G-DRG based treatment cost for malaria resulted in a sudden increase of up to 40% in outpatient costs of the scheme due to the fact that more malaria cases were treated as “complicated” rather than “uncomplicated” - the G-DRG categories. This illustrates that decisions on the provider payment mechanisms to be employed need to be based on evidence and a thorough understanding of the effect of change in policy on the entire system (*Seddoh et al, 2011*).

The NHIA is considering the introduction of a capitation system for outpatient care at primary care centres. The pilot capitation project is being conducted in the Ashanti Region with grant funding from the World Bank.

Cost of care in Ghana increased rapidly between 2005 and 2008 before dropping slightly for both outpatient and inpatient services, as shown in Figure 21 and Figure 22 below.⁴⁴

⁴³ Kenya essential package for health (KEPH) approach integrates health programmes into a single package that focuses on interventions to improve health in each of six defined cohorts of the human development cycle, and to organize the delivery of services around six well-defined levels of care. Starting with community level care at level 1 up to tertiary care at level 6.

Outpatient utilisation per capita was 0.81 compared to a pre-insurance period where the highest recorded utilisation per person was 0.52. Inpatient average cost per claim rose from USD 37.4 in 2005 to USD 52.8 in 2009. That of outpatient average cost per claim rose from USD 4.35, peaking at USD 9.20 in 2008 before settling at USD 7.05 in 2009. Per capita utilisation for admissions per 1000 members in 2009 was 1.2 times (*Seddoh et al, 2011*).

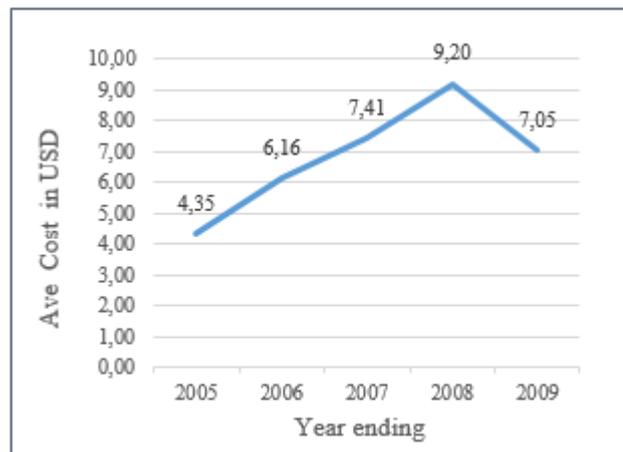


Figure 21: Trends in outpatients average cost per claim

Source: NHIA, 2010, ex *Seddoh et al, 2011*

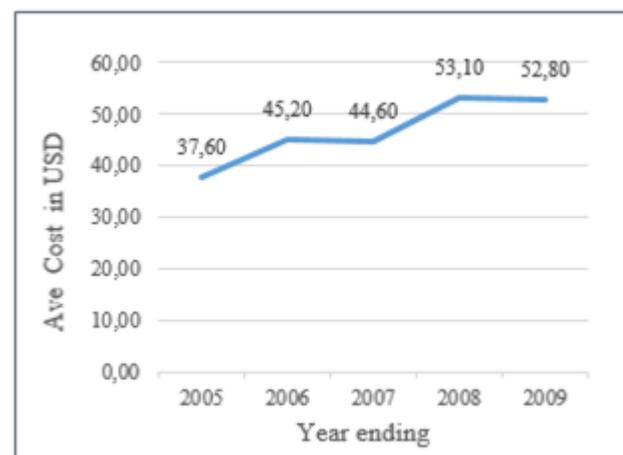


Figure 22: Trends in inpatient average cost per claim

Source: NHIA, 2010, ex *Seddoh et al, 2011*

4.3.3. Colombia

According to Colombia’s Department for Economic Planning, payments by the FOSYGA fund to insurance companies in 2009 totalled USD 963 million. This is 6 times more than the USD 162 million paid out in 2006⁴⁵ and 87% of the USD 963 million was spent in reimbursing

⁴⁴ The information provided on cost of claims must be interrogated further before any conclusions are made. For example, the effect of change in billing formula from a fee-for-service to a diagnostic related group (DRG) basis, has a direct effect. The DRG basis bears a significant risk of up coding. For example, given that malaria constitutes approximately 40% of all cases seen at OP, the singular act of increasing the cost of treatment of malaria by almost a hundred percent automatically increases the cost of OP care in Ghana by about 40%.

⁴⁵ Departamento Nacional De Planeación, Colombia, Plan Nacional De Desarrollo 2010-2014 302 (2011)

health insurance companies for “excluded” pharmaceuticals⁴⁶. These figures include the reimbursements paid by the FOSYGA due to Tutela litigation and to Scientific Technical Committee (CTC)⁴⁷ decisions. Reimbursement to insurance companies rose further to USD 1 264 million in 2010 (*Lamprea, 2013*).

Colombia's public expenditure on pharmaceuticals as a percentage of GDP has escalated in recent years from 1.33 % of GDP in 2006/08 to 3.15% of GDP in 2009 (Andia, 2011). These results suggest that in Colombia, pharmaceutical expenditure is not only extremely high but badly allocated as well. Even more troubling is the fact that a large part of Colombia's public pharmaceutical expenditure is absorbed by high-end biotech pharmaceuticals. For example, in 2008, 45% of the total public expenditure on pharmaceuticals went to pay health insurance companies for only 20 high-end pharmaceuticals produced by three large pharmaceutical companies⁴⁸. Colombia's mounting expenditure on pharmaceutical products due to “right to health care” litigation and CTC decisions that went almost unchecked by the government and by regulatory agencies (*Lamprea, 2013*).

In 2011, the government launched a major investigation into suspected fraudulent activities involving one of the largest EPSs and soon after several other investigations followed in other health plans and providers. Preliminary analysis found a wide variety of fraudulent activity in the processing of claims for the mandatory benefits package including fraudulent use of identities, fraudulent enrolments, payments in cases of false diagnosis, and fake documentation to simulate provision of services rendered (*Torres and Acevedo, 2013*).

4.3.4. India

The outlay of the Ministry of Health and Family Welfare for health was increased by 52% to USD 5 billion in 2011/12. This included the following allocations;

- USD 3 339 million for the NRHM; USD 441 million for the benefit of the schemes/projects in the North Eastern Region (NER) and Sikkim and USD 1 070 million for health services.
- A provision of USD 302 million was earmarked for the Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) Scheme which is aimed at strengthening the tertiary sector.
- USD 23 million to the National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).
- USD 318 million has been earmarked for National Aids Control Programme.
- USD 168 million to develop and promote the Indian system of medicines in an organized and scientific manner by involvement/integration of AYUSH⁴⁹ systems in National Health care and Delivery.

⁴⁶ Departamento Nacional De Planeación, Colombia, supra note 52

⁴⁷ Instituted by Law 100 and reformed in 1997, Scientific Technical Committees or CTCs are supposed to act as a mechanism to solve conflicts between patients and Health Promoting Entities or Entidades Promotoras de Salud (EPS) in respect of medical services and pharmaceuticals “excluded” from the basket of health services. These committees were assigned to all health insurance companies and given decision making powers regarding patients’ demands for the delivery of medicines and health treatments “excluded” from the baskets of health services. The fact that doctors and officials employed by the EPS sit on the CTCs constitutes a conflict of interest and since CTC decisions are subject to Tutela review, contributes to the high level of Tutela claims.

⁴⁸ Con Sólo Diez Medicamentos las Multinacionales... Observamed (Nov. 9, 2009), http://www.med-informatica.net/BIS/WebMail_09a15nov09.htm.

⁴⁹ Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy

Spending on health care in India is estimated at 5% of GDP in 2013 and total annual health care spending is expected to more than double to USD 201.4 billion over the period 2012 to 2017, an average annual growth rate of 15.8%.⁵⁰ The Indian government plans to cover health insurance for 80% of the population by 2020 under its Health Insurance Vision 2020, released in December 2013⁵¹.

Total public expenditure is increasing and the emphasis on public health and disease prevention in the Indian budget is improving, but is still only approximately 20% of total health expenditure (THE). Although hospitalisation coverage is the basis for almost all health insurance, according to the most recent census only 1.7% of admissions were reimbursed and the average reimbursement was only USD 4.83, or 4% of the average hospitalisation cost of USD 116. As a percentage of GDP, this is considerably less than other Asian countries. The private sector's share in healthcare delivery is expected to increase from 66% in 2005 to 81% by 2015. Private sector's share in hospitals and hospital beds is estimated at 74% and 40% respectively (Gol MOHFW, 2011⁵²).

4.4. Product design

Structural law states that energy moves along the path of least resistance and that the underlying structure of anything will determine its path of least resistance. This can be used to our advantage since we can determine the path of least resistance by creating new structures. There are two types of structure; *structural tension* leads to advancement, or a process of continual improvement, while *structural conflict* leads to oscillation, or a pattern of advancement followed by a setback. It's the one-step forward, one-step back syndrome (Fritz, 1996).

Health insurance transfers the risk of the treatment cost to the insurer and, since the insurer does not provide the treatment, creates a triangular relationship of potentially conflicting incentives between the insurer, the insured and the treatment provider. The success of health insurance and its sustainability is therefore critically dependent on achieving a balance in the structural tension between these potentially divergent forces.

Benefit structures should be designed to ensure that a good or reasonable quality of life can be maintained and should be informed by a vision that aims to improve affordability and quality of healthcare, whilst keeping in mind that the demand for healthcare services is practically unlimited.

It is interesting in this regard to observe that the hospitalisation ratio is negatively correlated to primary care usage (but not correlated to the availability of primary care facilities in the district, or other factors such as sanitation and other amenities that prevent sicknesses). This suggests that access to primary care can reduce the need for hospitalisation (Mahal *et al*, 2013). Schemes that only cover inpatient benefits are therefore likely to experience higher claims ratios than schemes that also cover outpatient benefits.

⁵⁰ Healthcare Briefing and Forecasts: India: Healthcare Report, Economist Intelligence Unit, August 1, 2013

⁵¹ Hindu Business Line, December 2013. <http://www.thehindubusinessline.com/industry-and-economy/banking/health-insurance-must-cover-at-least-80-of-indians-ficci/article5455224.ece>

⁵² Annual Report to the People on Health, 2011, Government of India Ministry of Health and Family Welfare.

The decision to consume health services as well as the decision to provide it must be subjected wherever possible to some form of risk sharing and/or limitation, and create incentive behaviour that will protect the insurer’s risk pool to ensure the sustainability of the insurance arrangement. Measures that, among others, restrict the choice of provider or subject the utilisation of benefits to some form of control (e.g. managed care) must be viewed as key elements in the product design.

In a case study on Microcare Insurance Limited (MIL) in Uganda (*Greyling, 2013*), an analysis of membership and claims showed that single-service provider products performed much better than those that allowed members to choose from a wide selection of service providers. It was found, for example, that in 2008, Kibuli Hospital (through a single-provider product) provided treatment to 7% of all patients but only made up 4% of MIL’s claims cost. Paragon Hospital (through open products), on the other hand, provided treatment to 13% of patients but was responsible for 22% of the total claims cost. Table 20 compares MIL’s claims experience on single-service provider products with open products and shows that both claim frequency and claim costs tend to be lower in single-service provider products.

Scheme	Type	Annual claim frequency	Claim size (USD)	Monthly cost per member (USD)	Claims ratio
Kibuli Hospital (IP & OP)	Single SP	2.89	21.51	5.11	83%
Surgery IP & OP	Single SP	1.83	30.29	4.56	25%
Surgery Individual OP High	Single SP	0.77	25.17	1.59	13%
Surgery Individual OP Low	Single SP	3.31	24.82	6.76	9%
Corporate Comprehensive (IP & OP)	Open	5.80	34.29	16.34	86%
Corporate Standard (IP & OP)	Open	4.86	30.12	12.03	48%
Corporate Basic (IP & OP)	Open	3.06	22.16	5.58	64%

Table 20: Single service provider claims experience versus open products July 2007 to June 2008

Source: *Quindiem Consulting*

Payment mechanisms can also be structured to create incentives and the responses of the providers to those incentives and the accountability mechanisms established between providers and purchasers can have profound effects on the results of an HMI scheme (*Langenbrunner, 2009*).

Incentives can also target scheme sponsors. Anecdotal evidence from Ghana indicates that a loss making corporate health insurance scheme started making underwriting profits within a few months of introducing a profit sharing arrangement with the employer, in spite of the benefits remaining the same. This arrangement has, however, not been in operation for long enough to be a reliable indicator.

The introduction of Ghana Diagnostic Related Groups (G-DRGs) as the basis for provider payments in the Ghana NHIS unexpectedly caused claims costs to escalate significantly. The G-DRG basis, by creating a significant tariff difference between an ordinary malaria diagnosis and a complicated malaria diagnosis caused an increase in the cost of malaria treatment of almost 100%. As a result of the fact that malaria constitutes a significant proportion of all outpatient cases, this caused a 40% increase in the total cost of outpatient claims. This is a good example of “tariff creep” or upward billing whereby providers code diagnoses upward to obtain a higher reimbursement (*Witter and Garshong, 2009*).

Provider payment mechanisms that support the objectives of all the stakeholders in the delivery of affordable healthcare services can be a powerful tool in strengthening the sustainability of the benefits of the insurance products in HMI.

4.5. Provider network management

Effective provider management is a prerequisite for sustainable health insurance business. Without providers to deliver quality healthcare, insurers will not be able to retain policyholders. However, without proper control mechanisms claim costs will invariably escalate to levels that cannot be sustained and the insurer will be forced out of the market.

The subject of provider network management in health insurance is wide ranging and each aspect, from methods of accreditation, selection criteria and definitions of quality in healthcare has been the subject of in depth research. Concepts such as pay-for-performance and health services information management continue to be developed further through experiential learning and analysis.

The objective of this study is to focus on the factors that must be considered in premium setting. Outcomes based criteria can be used as an indicator for quality healthcare and the validity of this approach is seldom questioned.

However, a number of considerations limit the use of outcomes as measures of effectiveness. The first of these is whether the outcome of care is, in fact, the relevant measure. This is because outcomes reflect both the power of medical science to achieve certain results under any given set of conditions, and the degree to which “scientific medicine,” as currently conceived, is a sustainable objective in a low income environment. Many factors other than medical care may influence outcomes, and precautions must be taken to hold all significant factors, other than medical care, constant if valid conclusions are to be drawn (*Donabedian, 2005*). The leading causes of morbidity in the target population for HMI must therefore be properly considered in the choice of service providers and the selection of the service providers should also be aligned to the intended price of the specific benefit package. In this regard primary care is often obtained at tertiary care facilities at unnecessarily inflated costs.

Package rates in RSBY have been fixed from the providers’ perspective which includes only direct costs of treatment. However, around 60% of patients covered under RSBY still incurred out-of-pocket expenses. One of the explanations given by the providers for charging additional fees was that the package rates fixed for most of the services were low and also claimed that some categories of non-surgical treatment were not covered (*Devadasan et al., 2011 & 2013*).

Cost containment strategies can be broken down into three categories: those activities that are designed to affect the demand for services, those that are designed to affect the supply of services and those that affect supply and demand simultaneously. Historically, providers have acted to insure that their incomes remain constant when cost containment programmes are introduced. The challenge for the health insurance plan is therefore to manage the programmes so that the alterations in the patterns of clinical care benefit the insured. The ideal cost containment programme follows a balanced approach that includes

both consumer and provider strategies using supply and demand tools with an information system that generates the data to guide the use of both.

Health Claim Red Flags

Auditors typically identify potential red flags up front when performing tests of large populations of transactions like disbursements. Potential red flags to consider during a review of health claims payment recipients include:

Providers with utilization rates consistently higher than peers (i.e. those that provide more tests or procedures per patient).

Medically unlikely or unrelated procedures (e.g. instances where a procedure conflicts with the age or gender of the person covered). Generally, insurers and TPAs with a more extensive knowledge of coding have their own scripts for this type of review.

Providers treating above-average daily/weekly patient volumes compared to peers.

Providers unbundling or billing separately for laboratory tests performed together to obtain higher reimbursements.

Patient name different from name of insured.

Source: Dennis L. McGuffie, Internal Auditor magazine, April 2011

<http://www.theiia.org/intAuditor/feature-articles/2011/april/taming-the-beast-reigning-in-health-care-fraud/>

Box 3: Health claim red flags

4.6. Cross cutting issues

Kenya, Ghana, Colombia and India within the past decade, have all launched ambitious national health insurance initiatives designed to move towards universal coverage, or have implemented incremental improvements to existing national insurance programmes (Lagomarsino *et al*, 2012). However, the assumption that with the provision of coverage, services will be available to meet demand is not valid in countries such as these, which not only have broken health systems with huge gaps in supply and infrastructure, but are also burdened with communicable diseases that require a significant level of preventative health action. It can be argued that for universal health coverage to be successful, countries have to set standards of care and ensure they are reinforced (Rao S, 2005).

Figure 23 shows the extent to which all four countries also share a high burden of non-communicable disease. Figure 24 illustrates the main diseases causing mortality which, with the exception of interpersonal violence and HIV/AIDS, again shows remarkable commonality between the countries.

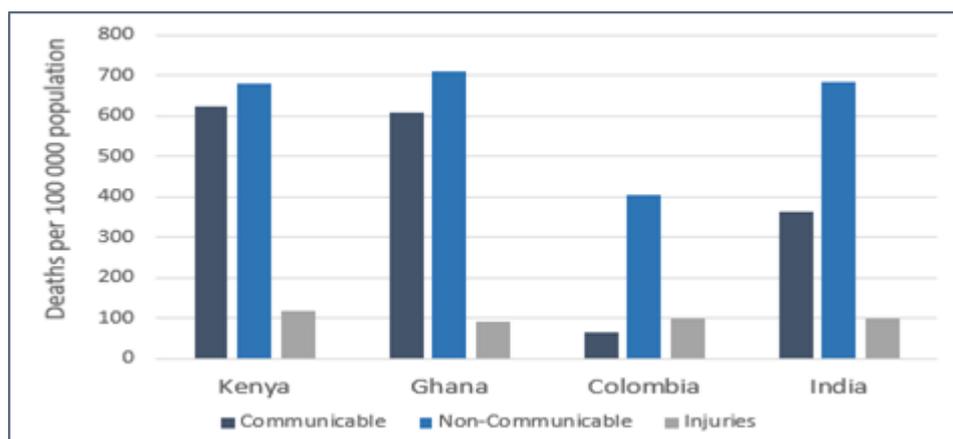


Figure 23: Disease profile by category (2008)

Source: WHO, 2013

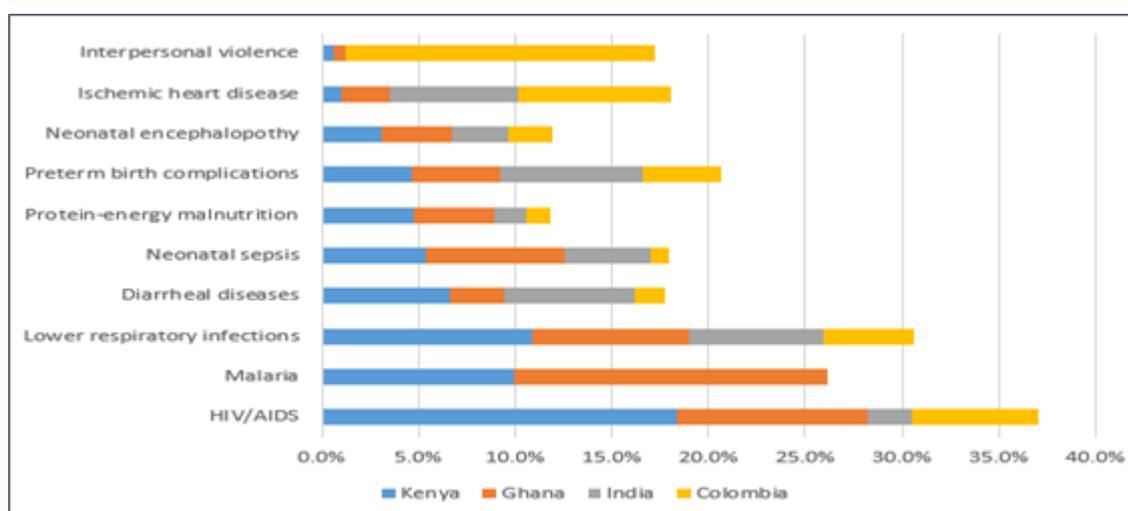


Figure 24: Main diseases causing mortality (2010)

Source: Compiled by author from WHO data

For the purpose of pricing, it is proposed that Table 21 provides risk indicators that may be useful⁵³. These environmental risk indicators for Kenya, Ghana and India once again show a remarkable level of similarity.

	DALY/1000 Pop/Yr	Deaths/1000 Pop/Yr	EBD % of total disease burden
Colombia	31	1.1	16%
Ghana	89	3.2	26%
India	65	2.4	24%
Kenya	101	3.0	24%

Table 21: Environmental burden of disease (EBD)

Source: WHO health statistics 2004, estimates based on Comparative Risk Assessment, evidence synthesis & expert evaluation for regional exposure.

⁵³ See Summary guide for the EBD country profiles at http://www.who.int/quantifying_ehimpacts/countryprofiles/en/

Concerns about fraud and quality control are also emerging in all four countries particularly since all of them have systems that consist of many fragmented private providers with little quality control (*Lagomarsino et al, 2012*).

Despite the growing popularity of taxes as a key source of revenue for coverage programmes, all four countries continue to attempt to collect voluntary premiums from the informal-sector (*Joint Learning Network, 2011*). However, these countries, like most low and middle income countries, have a significant percentage (60%+) of the workforce in informal employment. Large informal economies make automatic payroll or income tax deductions difficult to implement on a widespread basis and this makes it extremely difficult to collect contributions to raise sufficient prepaid funds for expansion of health coverage (*ILO, 2011; Scheiman et al, 2010*).

Fragmentation within defined sub-groups of society (such as community groups, microfinance groups, trader groups, employer groups, faith-based groups) results in the existence of too many small organizations involved in revenue collection, pooling and purchasing. Each of these groups is restricted in their capacity to achieve adequate pooling of resources that will be able to reduce the cost of insurance and attract medical services into their communities. This results in a severe rationing of healthcare for people who are forced into a system of out-of-pocket payments that often results in healthcare expenses in excess of 50% of the non-food spending. Of the countries in this study, only Ghana has taken steps to create one large national risk pool. In Kenya, the absence of high-level political support has prevented progress on this issue, despite a bill that aimed at creating a government-funded risk pool across all socioeconomic groups being passed in Parliament in 2004 but never signed into law (*Mars Group, 2007*).

5. Conclusions

The review of prepaid healthcare in the study countries enables us to draw some conclusions that may be useful for the purpose of premium determination. However, premium determination must also take place within the context of the broader health system and the way in which the design and delivery of prepaid healthcare products will take place.

Premiums for HMI are most strongly determined by the risk of incurring treatment cost and the cost of maintaining the product. Treatment cost is determined by the pattern of disease and the way in which health seeking behaviour of policyholders impact on incidence and cost of treatment. The most significant cost component for maintaining the product will usually be the cost of claims administration. The design of the product (benefit structure, premium collection, service delivery and claims settlement) will have a significant impact on the way in which these cost elements lead to profitability or not. With this in mind, we can draw some conclusions from the schemes in the four study countries.

5.1. Treatment cost

- i. *Fragmentation of the risk pool*: Fragmentation of the risk pool into large numbers of small insurance risk pools is one of the most serious obstacles to the establishment of sustainable universal healthcare (*McIntyre et al, 2008*). In India, for example, the ten top schemes cover 91.6 million people, while the next ten schemes that make

up the top twenty, only cover an additional 2.7 million people (ILO, 2009). Despite rapid expansion of population coverage in recent years, schemes such as RSBY still only accounted for less than 0.3% of the country's health expenditure in 2011 (Nagpal, 2013).

The previous section has highlighted that fragmentation within defined sub-groups of society (such as community groups, microfinance groups, trader groups, employer groups, faith-based groups) results in the existence of too many small organizations involved in revenue collection, pooling and purchasing, which restricts their capacity to achieve pooling. The extent to which the popular partner agent model contributes to the fragmentation of the risk pool should be reviewed and if possible ways may need to be found to allow multiple participants in one common risk pool, which will impact on the ability to achieve premiums that BPL families can afford. In this regard, Ghana may serve as a potential example.

- ii. *Out-of-pocket payments* are high in all four countries and represent the most extreme form of fragmentation as it places the burden of healthcare funding on the individual (McIntyre et al, 2008). The persistent high level of out-of-pocket payments surely tells us that the HMI products on offer do not address the basic needs of the BPL families with regard to their perception of value for money.
- iii. *Burden of disease*: This study has shown that the burden of diseases that cause health insurance claims are remarkably similar in all four countries, with some exceptions such as violence in Colombia and low impact of malaria in India. It should therefore be possible to create a common "*burden of disease*" rating table that can be populated for any geographical area based on WHO indicators and local tariffs for treatment. Addendum A contains an example of a disease burden country profile⁵⁴. As referred to in section 2.5, the experiences in the study countries can largely be applied to the more than 3.3 billion people who live in the developing countries with tropical climates, and are representative of 84% of the global population⁵⁵.

In all four countries we also find a declining population growth rate and an aging population that will in due course impact on health insurance claims as the disease profile shifts from communicable to non-communicable diseases. This is already evident in the increasing prevalence of diabetes, hypertension and chronic diseases such as asthma, all of which are more expensive to treat.

- iv. *Incidence of claims* has also been shown to be similar for the study countries and allow some assumptions to be made in pricing. However, health seeking behaviour is strongly influenced by regional and community specific factors, such as socio-economic variables (Schieber et al, 2012; Antwil et al, 2013), gender (Blanchet, 2012) and a rural or urban location. Being insured also increased utilisation, for example, in Ghana 76.3% of women enrolled in NHIS visited a health clinic or hospital over a period of one year compared to just 50.2% of women without

⁵⁴ The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors.

⁵⁵ In 2010.

insurance (*Schieber et al, 2012*). Other studies have also shown that health seeking can be influenced by the benefit design (*Vellakal, 2012*). On the other hand, many people who are ostensibly covered might not be seeking services at all (*Research Institute, 2009; Krishnaswamy, 2011; Rathi, 2012*). Health seeking behaviour was not included in this study and may warrant more research on its own.

- v. *Cost of care*: A number of studies have tried to assess costs of care in developing countries (*Mills, 1990; Asante, 1998*), most of which used secondary data (i.e. existing accounts from the hospitals were used without consideration whether they were correct or complete). It became clear that raw data was not reliable for analysis (*Asante, 1998*). More reliable studies did not cover sufficient data from developing countries (*Shepard et al, 1998*) to be able to serve as a basis for premium determination.

In many jurisdictions there were also attempts to aid in price setting by formulating a standard basic package of benefits, such as the Kenya Essential Package for Health (KEPH), which integrates health programmes into a single package that focuses on interventions to improve health in each of six defined cohorts of the human development cycle, and to organize the delivery of services around six well-defined levels of care. Such a standardised basic package of benefits that cover the most common diseases as identified, may be helpful to index the relevant treatment cost for different locations. However, this requires further analysis.

5.2. Management cost

In all four countries the cost of administration and management of HMI schemes are unsustainably high. In the Afya Yetu scheme, in Kenya, administration cost as a percentage of premiums has gone from 45% in 2009 to 72% in 2011 and 51% in 2012 (*Koven et al, 2014*). In India private insurers' administrative costs may be as high as 40% to 80% of total premiums (*BearingPoint, 2008; Koven et al, 2013*). In 2011 the average cost of administration for the top ten schemes was 39% (*Koven et al, 2013*). These schemes represent more than 90 million beneficiaries. In Ghana, the Health Insurance Service Providers Association of Ghana (HISPAG) has recently called on the National Health Insurance Authority (NHIA) to increase the capitation rate from GH¢2.27 (USD 1.12) to at least GH¢12.00 (USD 5.95) – a proposed increase of 529%! (*All Africa website, 30 January 2014*)

Fragmentation not only prevents cross subsidisation of treatment costs, it also prevents schemes from reaching scale that will drive down the cost of administration. In addition, scheme sponsors continue to suffer from the consequences of legacy thinking and administration systems that import cumbersome processes and high operating costs from traditional health insurance into the HMI environment. Examples of cost reduction strategies made possible by today's technology are automated claims adjudication and mobile enrolment/payment systems. Automated claims processing allowed Chartis⁵⁶ to reduce the claim handling time by 30%, enhance adjudication accuracy and achieve a 5% reduction in indemnity expenses (*Pegasystems*). Although this example is in respect of general non-life business, the same technology can be applied in respect of HMI business to reduce the cost

⁵⁶ Chartis is a world leading property-casualty and general insurance organization serving more than 70 million clients around the world (pega.com/customers).

of operations and claims administration whilst improving the accuracy and speed of claims adjudication and exception reporting.

5.3. Provider network management

Resource allocation and purchasing mechanisms determine for whom to buy, what to buy, how to pay, and at what price. Purchasing includes the arrangements used by purchasers of health care services to pay healthcare providers. Resource allocation and purchasing have important implications for cost, access, quality and consumer satisfaction. Better purchasing also provides efficiency gains and better value for money. When done optimally this effectively creates additional “financing” for the health system (*Gottret and Schieber, 2006*).

The results of costing studies from Kenya are characterized by high variability and provider payment mechanisms that often incentivise over-provision (*Mathauer, 2010*). In Colombia, frequent conflicts between insurance companies and local health authorities on the subject of what is included in the benefits package have led to increasing numbers of court cases that have challenged exclusions and refusals to authorise treatment resulting in uncontrolled escalation of costs (*Lamprea 2013*). Colombia's public expenditure on pharmaceuticals vis-à-vis its GDP has escalated from 1.33 % of GDP in 2006/08 to 3.15% of GDP in 2009 (*Andia, 2011*) and in 2008, 45% of the total public expenditure on pharmaceuticals went to pay health insurance companies for only 20 high-end pharmaceuticals not normally used in primary care (*Lamprea 2013*). Similar challenges are also found in India (*Research Institute, 2009; Krishnaswamy, 2011; Rathi, 2012*). In Ghana outpatient utilisation has increased from 0.43 visits per member in 2005 to 3.05 visits per member in 2011 and whilst membership has increased by 586% over this period, the cost of treatment has increased by 1 300% (*Ghana Ministry of Health, 2011*).

Purchasing arrangements and control measures in respect of over servicing and over use must surely be revisited as part of the structuring of HMI schemes.

5.4. Inpatient versus outpatient benefits

By far the majority of HMI schemes only cover inpatient benefits. This is based on the perceived risks and costs associated with outpatient and individual plans. However, it should be questioned whether they address the overall financial burden of ill-health experienced by the poor. Although an inpatient admission would be a catastrophic event for most poor people, outpatient care constitutes a much higher share of overall health expenditure than inpatient care and much of this continues to be out-of-pocket. In addition, a chronic ailment that requires regular treatment on an outpatient basis can involve higher expenditures than an inpatient procedure (*Nagpal, 2013*).

Although there is a lack of adequate actuarial information about outpatient covers, and this is exacerbated by a fear of adverse selection and moral hazard, the review of the four study countries demonstrates that the primary care outpatient needs for the majority of BPL families consist of events such as malaria, respiratory infection and diarrhoea. These should not be difficult to package in innovative ways that can be managed cost effectively through better purchasing arrangements, such as diagnosis related tariffs for primary care; and the use of currently available technology, such as biometric identification and mobile transaction systems.

Experience has also shown that although the probability of hospitalisation and the days of hospital stay are relatively steady, the medical service cost keeps rising. Therefore, when estimating the expected amount of claims in the future, the rising medical service cost must be taken into account and mechanisms may need to be found to control this cost escalation, possibly by insurer-owned healthcare facilities.

In conclusion: The study countries are representative of a significant part of the low income households globally. The high level of similarity in the factors that lead to health insurance claims costs in these countries suggests that a standardised approach to pricing HMI products is feasible and that, with minor adjustments for specific locations, this would be suitable for most emerging market settings. The study also demonstrates that public sources of data exists which can assist stakeholders in HMI with price setting.

6. Bibliography

AKI Association of Kenya Insurers, 2012. Insurance Industry Annual Report 2012. [Online] Available at: http://www.akinsure.com/component/docman/doc_download/26-2012-aki-insurance-industry-report.html[Accessed 26 05 2014].

Addae-Korankye A, Challenges of financing health care in Ghana: The case of national health insurance scheme (NHIS), *International Journal of Asian Social Science*, 2013, 3(2):511-522 511.

Ahmed MU, Islam SK, Abul Quashem MA, Ahmed N, 2005, Good and Bad Practices Case Study No. 13, CGAP Working Group on Microinsurance.

Aikins M. and Okang G, 2006, Utilization and cost of health care under the district health insurance schemes: A case study of Brong-Ahafo and Eastern regions, JSA Consultants.

Amporfu E, 2013, Equity of the premium of the Ghanaian national health insurance scheme and the implications for achieving universal coverage, *International Journal for Equity in Health*, doi:10.1186/1475-9276-12-4.

Analytical Review of Health Progress, and systems performance, 1994 – 2010, Kenya Health Policy Framework 1994 – 2010: Analysis of Performance, Analytical Review of Health Progress and Systems Performance Analysis, Technical Working Group, Health Policy Review Steering Committee of the HSSC.

Antwi1 S, Zhao X, Boadi EK, Oware Koranteng EO, 2013, Socio-Economic Predictors of Health Insurance Claims: Evidence from Ghana, *International Journal of Economics and Finance*; Vol. 6, No. 3; 2014.

Annual Report 2013, Microinsurance Innovation Facility, protecting the working poor, International Labour Organization 2014.

Annual Report to the People on Health, 2011, Government of India Ministry of Health and Family Welfare.

Andia T, 2011, The Invisible Threat: the Rise of Non-Intellectual Property and Non-Trade Pharmaceutical Regulations in Colombia, in *Intellectual Property, Pharmaceuticals and Public Health: Access to Drugs in Developing Countries 77* (Kenneth Shadlen ed.).

Andia T, 2012, Summary of Report of Second Product of Consultancy on the Right to Health in Colombia Conducted by the School of Law of Universidad Los Andes, Presented in Washington DC, at the meeting of the World Bank's Nordic Trust Fund for Human Rights and Development.

Angove J, Dalal A, 2014, Business Case for Microinsurance Part II: Follow-up on the profitability of microinsurance by Angove J and Dalal A, Microinsurance paper no. 32, International Labour Organization.

Apoya P and Marriott A, 2011, Achieving a shared goal free universal health care in Ghana, Oxfam International.

Arhin-Tenkorang D, 2001, Health Insurance for the Informal Sector In Africa, Design Features, Risk Protection, and Resource Mobilization, The International Bank for Reconstruction and Development / The World Bank, ISBN 1-932126-00-7.

- Aristotle Asiedu Mante, 2011, An initial analysis of the effectiveness of Ghana's National Health Insurance Scheme on access to healthcare in the New Juaben Municipal District, ProQuest Dissertations and Theses.
- Asante K, 1998, Sustainability of church hospitals in developing countries, A search for criteria for success, Christian Medical Commission.
- Beattie, P., 2010. The World's Tropical Zone – Rich Beauty, Rare Opportunity. [Online] Available at: http://www.burrillreport.com/article-the_world%E2%80%99s_tropical_zone_%E2%80%93_rich_beauty_rare_opportunity.html [Accessed 26 05 2014].
- Barón G, 2007, Cuentas de salud de Colombia 1993-2003: El gasto nacional en salud y su financiamiento, Social Protection Ministry and National Planning Department.
- Barros R, 2014, Regulation in Colombia will drive international insurance appetite, Latam Insurance Review, February 17.
- BearingPoint Inc., 2008, Private Health Insurance in India: Promise and Reality, for the United States Agency for International Development.
- Bernal O and Gutiérrez C, 2012, La Salud en Colombia: Logros, retos y recomendaciones, Editorial Universidad Los Andes. Bogotá, Colombia as referenced in Torres M F, Acevedo O B, 2013, Colombia Case Study: The Subsidized Regime of Colombia's National Health Insurance System, UNICO Studies Series 15, The World Bank, Washington DC.
- Blanchet NJ, Fink G, and Osei-Akoto I, 2012, The Effect of Ghana's National Health Insurance Scheme on Health Care Utilisation, Ghana Medical Journal, 46(2): 76–84, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3426378/>
- Bloom DE, 2011, Population Dynamics in India and Implications for Economic Growth, Harvard School of Public Health.
- Blundell R and M.C Dias, 2000, Evaluation Methods for Non-Experimental Data, Fiscal Studies 21, no.4, 427–446.
- Boateng RA, 2009, Performance Review March 2008, PowerPoint.*
- Braveman P, Starfield B, Geiger HJ, 2001. World Health Report 2000: How It Removes Equity from the Agenda for Public Health Monitoring and Policy, British Medical Journal 323: 678–80.
- Bristol N, 2014, Global Action towards Universal Health Coverage, a report of the CSIS Global Health Policy Centre, Centre for Strategic International Studies.
- Cabrera E C T, 2011, Colombia - The Subsidized Healthcare Scheme in the Social Protection System, Successful Social Protection Floor Experiences, Volume 18, Special Unit for South-South Cooperation, UNDP, ISSN: 1728-4171.
- Caceres M and Sandra Zuluaga S, 2008, Facilitating Inclusive Financial Markets: The Role of Regulation in the Development of Microinsurance, focus note prepared by Genesis Analytics.
- Camacho A, Conover E, Hoyos A, 2010, Effects of Colombia's Social Protection System on Workers' Choice between Formal and Informal Employment, World Bank, JEL No. I11, I18, O17.
- Camila de la Torre Blanche and Gabriela Monroy Torres, 2013, The International Comparative Legal Guide to Insurance and Reinsurance 2013, 2nd edition, Colombia Chapter, Published by Global Legal Group Ltd, London.

- Chamberlain D, 2008, Facilitating Inclusive Financial Markets: The Role of Regulation in the Development of Microinsurance, Draft Focus note: Colombia, FinMark Trust.
- Chollet D, Lewis M, 1997, Private Insurance: Principles and Practice. In: Beattie, A. et al. (eds.), Sustainable Health Care Financing in Southern Africa: Papers from an EDI Health Policy Seminar Held in Johannesburg, South Africa, June 1996. EDI Learning Resources Series, Washington, D.C.
- Chuma J, Gilson L, Molyneux C, 2007, Treatment-seeking behaviour, cost burdens and coping strategies among rural and urban households in Coastal Kenya: an equity analysis, *Trop Med Int Health*, 12:673-686.
- Chuma J and Maina T, 2012, Catastrophic health care spending and impoverishment in Kenya, *BMC Health Services Research* 12:413 doi: 10.1186/1472-6963-12-413.
- Colombia, Ministerio de la Protección Social, Informe oficial de los avances en cumplimiento de los resultados del Programa Ampliado de Inmunizaciones enero, 2010, Bogotá: MPS.
- Colombia: Financial System Stability Assessment, IMF Country Report No. 13/50, International Monetary Fund, February 2013.
- Conteh L, Walker D, 2004, Cost and unit cost calculations using step-down accounting. *Health Policy Plan*, PubMed 19(2):127-35.
- Deloitte Touche Tohmatsu Limited, 2013, Global life sciences outlook: Resilience and reinvention in a changing marketplace, www.deloitte.com/lifesciences.
- Deloitte Touche Tohmatsu Limited, 2014, Global health care outlook, Shared challenges, shared opportunities.
- Desai S, Holtz J, 2013, Learning Journey, VimoSEWA, Bringing “Health” into Health Insurance: Evidence for a Converged Approach, Microinsurance Innovation Facility, International Labour Office.
- Devadasan N, Ranson K, Damme WV, Acharya A, Criel B, 2006, The landscape of community health insurance in India: An overview based on 10 case studies, *Health Policy* 78 224–234.
- Donabedian A, 2005, Evaluating the Quality of Medical Care, *The Milbank Quarterly*, Vol. 83, No. 4, 2005 (pp. 691–729).
- Donehower G, 2013, Turning Points in Colombia’s Ageing Future, Number 5/2013, Latin American and Caribbean Demographic Centre (CELADE), Population Division of the Economic Commission for Latin America and the Caribbean (ECLAC).
- Dong H, Bogg L, Wang K, Rehnberg C, Diwan V, 1999, A description of outpatient drug use in rural China: evidence of differences due to insurance coverage, *The International Journal of Health Planning and Management*, 14(1):41-56.
- Dror D M, 2009, Microinsurance: Something new or just less of the old thing?, *Micro Insurance Academy Presentation* 27 February 2009.
- Dror, D M, 2008, Micro Health Insurance The quest for a balance between different interests of healthcare providers, clients and insurers, *Health Action* Vol 21 No. 5 May 2008.
- Dror D M, Jacquier D, 2001, Micro-Insurance: Extending Health Insurance to the Excluded,

This paper was delivered at the “Social Protection Workshop 5: Protecting Communities: Micro- and Area-Based Schemes” under the Asia Pacific Forum on Poverty: Reforming Policies and Institutions for Poverty Reduction to be held at the Asian Development Bank, Manila, 5-9 February 2001.

Dror D M, 2001, Reinsurance of health insurance for the informal sector, Bulletin of the World Health Organization. Electronic copy available at: <http://ssrn.com/abstract=1121299>.

Dror D, Radermacher R, Koren R, 2007, Willingness to pay for health insurance among rural and poor persons: Field evidence from seven micro health insurance units in India. *Health Policy*, 82(1), 12–27.

Flessa S, 1998, The costs of hospital services: a case study of Evangelical Lutheran Church hospitals in Tanzania, School of Management, University of Erlangen-Nuernberg, Nuernberg, Germany, *Health Policy and Planning*; 13(4): 397^407.

Flessa S, Moeller M, Ensor T, Hornetz K, 2011, Basing care reforms on evidence: The Kenya health sector costing model, *BMC Health Services Research*, doi:10.1186/1472-6963-11-128, <http://www.biomedcentral.com/1472-6963/11/128>.

Ghana Statistical Service; 2010 Population and Housing Census Summary Results of Final Report, May 2012.

Giedion U and Villar Uribe M, 2009, Colombia’s Universal Health Insurance System, *Health Affairs*, 28, no 3 (2009):853-863, doi:10.1377/hlthaff.28.3.853, downloaded from *content.healthaffairs.org* on January 22, 2014.

Gilson L, 1998, The Lessons of User Fee Experience in Africa. In: Beattie A et al. (eds.), *Sustainable Health Care Financing in Southern Africa: Papers from an EDI Health Policy Seminar Held in Johannesburg, South Africa, June 1996*. EDI Learning Resources Series, Washington, D.C.

Glassman AL, Escobar M, Giuffrida A, Giedeón U, 2009, *Few to Many: Ten Years of Health Insurance Expansion in Colombia*, Inter-American Development Bank and Brookings Institution, Washington (DC).

Gottret P, Schieber G, 2006, *Health Financing Revisited, A Practitioner’s Guide*, The World Bank, DOI: 10.1596/978-0-8213-6585-4.

Government of India, 2005, *India statistics-national income*, Central Statistical Organisation, New Delhi: Ministry of Statistics and Programme Implementation.

Government of India, 2009, *Macro indicators on health insurance data 2008/09*, New Delhi: Insurance Regulatory and Development Authority (IRDA).

Government of India, 2010, *Rashtriya Swasthya Bima Yojana*, Ministry of Labour and Employment. www.rsby.gov.in/, Accessed on 12 October 2010.

Faden L, Vialle-Valentin C, Ross-Degnan D, Wagner A, 2011, *The Role of Health Insurance in the Cost-Effective Use of Medicines*, Working Paper 2: WHO/HAI Project on Medicine Prices and Availability, Drug Policy Research Group and WHO Collaborating Centre in Pharmaceutical Policy, Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute.

Fritz R, 1996, *Corporate Tides: The Inescapable Laws of Organizational Structure*, Berrett-Koehler Publishers.

Greyling L, 2013, Microcare Insurance Uganda – Case Study, International Labour Office. -Geneva, 2013 (Microinsurance Paper; no. 24), ISSN: 2303-9191.

Health Micro-Insurance Schemes: Feasibility Study Guide, Volume 1, Social Security Department International Labour Office, International Labour Organization, 2005.

Health in the Americas 2012 Edition, Country Chapter Colombia, Pan American Health Organization, 2012, ISBN 978-92-75-11691-3,
http://www.paho.org/saludenlasamericas/index.php?option=com_content&view=article&id=30&Itemid=30&lang=en.

Hindu Business Line, December 2013. <http://www.thehindubusinessline.com/industry-and-economy/banking/health-insurance-must-cover-at-least-80-of-indians-ficci/article5455224.ece>.

Hougaard C, Bester H, Chamberlain D, 2008, Making insurance markets work for the poor, The case of Colombia, Based on the country report prepared by Monica Caceres (PrimAmerica) and Sandra Zuluaga (Fedesarollo), Focus note 3, Micro Insurance Network.

Hou X and Palacios R, 2011, Chapter 5, Hospitalization patterns in RSBY: preliminary evidence from the MIS, In Palacios R, Jishnu D and Changqing S (eds); India's Health Insurance Scheme for the Poor: Evidence from the Early Experience of the Rashtriya Swasthya Bima Yojana Centre for Policy Research. IBEF, September, 2013, <http://www.ibef.org/industry/healthcare-snapshot>.

IBEF, 2014. Healthcare Industry in India. [Online]
Available at: <http://www.ibef.org/industry/healthcare-india.aspx>
[Accessed 26 05 2014].

ILO MI Innovation Facility Annual Report 2013.

IMF Country Report No. 14/57, February 2014, International Monetary Fund Publication Services,
<https://www.imf.org/external/pubs/ft/survey/so/2014/car022014a.htm>.

Independent Review Health Sector Programme of Work 2010, Ministry of Health Ghana, April 2011.

Indian Healthcare Industry: An Overview, Sectoral Report, August, 2013.

India Health Microinsurance Schemes: Diversity, Innovations and Trends; A National Review, 2009, Social protection Series Working Papers, International Labour Office.

India National Review, 2009, Health micro-insurance schemes: Diversity, innovations and trends, Series: Social protection working papers, Sub-regional Office for South Asia, New Delhi.

Instituto Nacional de Salud, Vigilancia intensificada del virus de influenza A/H1N1v/2009 en Colombia, Bol Ola Invernal, 28 Julio 2011.

Institute for Health Metrics and Evaluation, 2014. Country Profiles. [Online]
Available at: <http://www.healthdata.org/results/country-profiles>
[Accessed 26 05 2014].

Insurance Regulatory and Development Authority (IRDA), Annual Report, 2012/13, Government of India, www.irda.gov.in.

International Labor Organization Department of Statistics, 2011, Statistical update on employment in the informal economy, http://laborsta.ilo.org/sti/DATA_FILES/20110610_Informal_Economy.pdf (as at July 2, 2012).

Joint Learning Network. India. Government health insurance promising operating practices programs profiled 2010. [http:// jointlearningnetwork.org/content/rashtriya-swasthya-bima-yojnarsby](http://jointlearningnetwork.org/content/rashtriya-swasthya-bima-yojnarsby) (accessed Dec 9, 2011).

Joint Learning Network. Ghana: National Health Insurance Scheme (NHIS). <http://jointlearningnetwork.org/content/national-healthinsurance- scheme-NHIS> (Dec 6, 2011).

Joint Learning Network. Philippines: PhilHealth. <http:// jointlearningnetwork.org/content/philhealth> (Dec 8, 2011).

Joint Learning Network. Kenya: National Hospital Insurance Fund (NHIF). <http://jointlearningnetwork.org/content/national-hospitalinsurance- fund-nhif> (Dec 7, 2011).

Kenya Health Policy Framework 1994 – 2010: Analysis of Performance. Analytical Review of Health Progress and Systems Performance, Kenya Ministry of Public Health and Sanitation and the Ministry of Medical Services, assisted by the World Health Organization, through grants from the International Health Partnership (IHP), and the Rockefeller Foundation.

Kenya National Health Accounts 2009/10, Ministry of Medical Services and the Ministry of Public Health and Sanitation, Republic of Kenya.

Kenya Household Health Expenditure and Utilization survey of 2005.

Kenya's Key: "Investing in Young People" is a multimedia advocacy tool developed in 2012 by the Kenya ENGAGE task force chaired by the National Council for Population and Development, Division of Reproductive Health, Centre for the Study of Adolescence, and the Population Reference Bureau's Informing Decision makers to Act (IDEA) project. www.prb.org/pdf12/engage-kenya-youth-suppl-handout.pdf.

Kirigia JM, Preker A, Carrin G, Mwikisa C, Diarra-Name AJ, 2006, An overview of health financing patterns and the way forward in the WHO African region. *East Afr Med J.* 2006; 83(9):S1–S28.

Knaul FM et al., 2012, The quest for universal health coverage: achieving social protection for all in Mexico. *Lancet*, 380:1259- 1279. doi: [http://dx.doi.org/10.1016/S0140-6736\(12\)61068-X](http://dx.doi.org/10.1016/S0140-6736(12)61068-X) PMID:22901864.

Koven R, Magnoni B, Zimmerman E, Sobol D, Budzyna L, 2014, Balancing client value and business case in Kenyan health microinsurance, Micro Insurance Centre.

KPMG International, 2014, Rashtriya Swasthya Bima Yojana, Necessity: the mother of innovation home page, KPMG Research, <http://www.kpmg.com/global/en/issuesandinsights/articlespublications>.

Krishnaswamy K, Ruchismita R, 2011, Rashtriya Swasthya Bima Yojana - Performance trends and policy recommendations: an evaluation of the mass health insurance scheme of the Government of India, Chennai: Centre for Insurance and Risk Management.

Lagomarsino G, Garabrant A, Adyas A, Muga R, Otoo N ,2012, Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia, *Lancet* 2012; 380: 933–43.

Lamprea E, 2012, Summary of Report of the Second Product of Consultancy on the Right to Health in Colombia Conducted by the School of Law of Universidad Los Andes, Presented in Washington DC, at the meeting of the World Bank's Nordic Trust Fund for Human Rights and Development.

Lamprea E, 2013, Colombia's Right-to-Health Litigation in a Context of Health Care Reform, *The Right to Health at the Public/Private Divide: A Global Comparative Study*, Aeyal Gross and Colleen Flood, eds., Cambridge University Press, Available at SSRN: <http://ssrn.com/abstract=2255658>.

Langenbrunner JC, Cashin C, O'Dougherty S, 2009, Designing and implementing health care provider payment systems: How-to manuals, The World Bank.

Lanjouw P, M. Ravallion M, 1999, Benefit Incidence, Public Spending Reforms and the Timing of Program Capture, *World Bank Economic Review* 13(2).

Latin America Country profile: Colombia, Lloyds Market Intelligence team, September 2013, www.lloyds.com/countryprofiles.

Mahal, A. Krishnaswamy, K.; Ruchismita, R., Babu, G. 2013. What is a health card worth? An evaluation of an outpatient health insurance product in rural India. Research Paper 30 (Geneva, ILO).

Mars Group Kenya, 2007, National Hospital Insurance Fund, Kenya. Nairobi: Mars Group Kenya.

Mathauer I, 2011, Setting health insurance remuneration rates of private providers in Kenya: the role of costing, challenges and implications, *Int. J. Health Plann. Mgmt.*, 26: e30–e47. doi: 10.1002/hpm.1038.

Mathiyashakan K, 1998, Willingness to pay for rural health insurance through community participation in India, *International Journal of Health Planning and Management*, 13(1), 47–67.

Matul M, Tatin-Jaleran C, Kelly E, 2011, Improving client value from microinsurance: Insights from India, Kenya, and the Philippines, *Microinsurance Paper no. 12*.

McIntyre D, Garshong B, Mtei G, et al., 2008, Beyond fragmentation and towards universal coverage: insights from Ghana, South Africa and the United Republic of Tanzania, *Bulletin of the World Health Organization*, 86: 871–76.

MDG Report 2012, Emerging perspectives from Africa on the post-2015 development agenda, Assessing Progress in Africa toward the Millennium Development Goals, prepared by AUC, UNECA, AfDB and UNDP.

Mensah J, Oppong JR, Schmidt CM, 2010, Ghana's National Health Insurance Scheme in the context of the health MDGs: an empirical evaluation using propensity score matching, *Health Econ.* 2010 Sep19, Suppl: 95-106. doi: 10.1002/hec.1633.

MicroCapital article, April 9, 2013, Microfinance Paper Wrap-Up: Microinsurance in Ghana: Microinsurance as a Means of Insurance Sector Development; by Jan Meissner; published by the National Insurance Commission (NIC), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), <http://www.microcapital.org/microfinance-paper-wrap-up-microinsurance-in-ghana-microinsurance-as-a-means-of-insurance-sector-development-by-jan-meissner-published-by-the-national-insurance-commission-nic/>.

MicroCapital article, February 12, 2013, MicroCapital Brief: National Insurance Commission of Ghana Announces New Regulatory Regime, New Book Released on Promoting Microinsurance in the Country," <http://www.microcapital.org/microcapital-brief-national-insurance-commission-of-ghana-announces-new-regulatory-regime-new-book-released-on-promoting-microinsurance-in-the-country/>.

MicroCapital article, June 13, 2012, Microfinance Paper Wrap-Up: Perceptions of (Micro) Insurance in Southern Ghana: The Role of Information and Peer Effects; by Lena Giesbert and Susan Steiner, published by DIW Berlin. <http://www.microcapital.org/microfinance-paper-wrap-up-perceptions-of-microinsurance-in-southern-ghana-the-role-of-information-and-peer-effects-by-lena-giesbert-and-susan-steiner-published-by-diw-berlin/>.

MicroCapital article, May 23, 2012, MicroCapital Brief: National Insurance Commission (NIC) of Ghana Targets 10% Microfinance Penetration in Three Years, <http://www.microcapital.org/microcapital-brief-national-insurance-commission-nic-of-ghana-targets-10-microinsurance-penetration-in-three-years/>.

Mills A: The economics of hospitals in developing countries. Part I: Expenditure patterns. *Health Policy and Planning* 1990, 5(2):107-117.

Mills A: The economics of hospitals in developing countries. Part II: Costs and sources of incomes. *Health Policy and Planning* 1990, 5(3):203-218.

Mills A, Bennett S, Siriwanarangsun P, Tangcharoensathien V. The response of providers to capitation payment: a case-study from Thailand. Health Policy, 2000, 51(3):163-180.

Ministry of Health and Family Welfare, 2010, National Rural Health Mission, Meeting people's health needs in partnership with states – the journey so far, 2005 – 2010, Government of India.

Morales L G, 1997, El financiamiento del sistema de seguridad social en salud en Colombia. CEPAL: Santiago de Chile.

Morgan L, Meerschaert JD, 2010, Health Microinsurance: Incidence Rate Questionnaire, Milliman Research Report.

Mtasiwa, Siegfried, Tanner and Pichette (Drs), 2002, Minimum Package of Health and related Management Activities (MPHMA), on behalf of the Dar es Salaam City Medical Office of Health (Second version).

Murray CJ, Lopez AD, 1996, A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020, published by the Harvard School of Public Health on behalf of the World Health Organization and the World Bank.

Mwaura JW, Pongpanich S, 2012, Access to health care: the role of a community based health insurance in Kenya, *The Pan African Medical Journal*, ISSN 1937-8688, <http://www.panafrican-med-journal.com/content/article/12/35/full/>.

Nagpal S, 2013, Expanding Health Coverage for Vulnerable Groups in India, The World Bank.

National Review, 2009, India, Health micro-insurance schemes: Diversity, innovations and trends, Series: Social protection working papers, Sub-regional Office for South Asia, New Delhi, International Labour Office.

Nationwide Mutual Health, 2014 – Data from NMH was obtained through personal discussions with the CEO on proviso that company specific data should remain confidential. The reference to NMH was made in respect of the premiums and benefit limits generally applicable in Ghana and cannot be linked to a specific document that can be referenced. Reference refers to my personal discussions with Mrs Nancy Ampah, the CEO of Nationwide Mutual Health.

NHIA Annual Report, 2010.

NHIA Annual Report, 2011.

NHIF, Un-audited Annual Report and Financial Statements for the Year Ended 30th June 2012, <http://www.nhif.or.ke/healthinsurance/>.

O'Donnell O, Van Doorslaer E, Wagstaff A, Lindelow M, 2008, Analyzing Health Equity Using Household Survey Data, A Guide to Techniques and Their Implementation, The World Bank, DOI: 10.1596/978-0-8213-6933-3.

O'Donnell O, Van Doorslaer E, Rannan-Eliya RP, Somanathan A, Adhikari SR, Harbianto D, Garg CG, Hanvoravongchai P, Huq MN, Karan A, Leung GM, C.-w. Ng, Pande BR, Tin K, Trisnantoro L, Peter Beattie, 2014, The World's Tropical Zone – Rich Beauty, Rare Opportunity, article in http://www.burrillreport.com/article-the_world%E2%80%99s_tropical_zone_%E2%80%93_rich_beauty_rare_opportunity.htmlThe Burrill Report.

Pinto D, 2008, Colombia: Good Practices in Expanding Health Care Coverage, in Good Practices in Health Financing, ed. Gottret P et al. (Washington: World Bank), 137–182.

Pinto D and Hsiao WC, Colombia: Social Health Insurance with Managed Competition to Improve Health Care Delivery, in Social Health Insurance in Developing Nations, ed. W.C. Hsiao and P. Shaw (Washington: IBRD/World Bank, 2007), 105–131.

Pitaknetinan K, Tangcharoensathien V, Supachutikul A, Bennett S, Mills A, 1999, Profit, payment and pharmaceutical practices: perspectives from hospitals in Bangkok. *Health Policy*, 46(3):179-194.

Population Projection Tables by Country and Group, HNP Stats, The World Bank, <http://go.worldbank.org/KZHE1CQFA0> – downloaded between 19 and 22 March 2014.

Profamilia, Encuesta Nacional de Demografía y Salud 2010, Bogotá: Profamilia, 2011.

Price M R, 1990, A comparison of prescribing patterns and consequent costs at Alexandra Health Centre and in the private fee-for-service medical aid sector, *South African Medical Journal*, 78(3):158-160.

Rathi P, 2012, Evaluation of Rashtriya Swasthya Bima Yojana (RSBY): a case study of Amravati district. Postgraduate report, Indian Institute of Management.

Rajkotia Y, 2009, National Health Insurance in Ghana: Politics, adverse selection, and the use of child health services, A dissertation submitted to Johns Hopkins University in conformity with the requirements for the degree of Doctor of Philosophy, Baltimore, Maryland.

Rao S, 2005, Health Insurance in India, From: National Commission on Macroeconomics and Health Report: Financing and Delivery of Health Care Services in India: Background Papers, New Delhi, India.

Reddy Prof K S, Selvaraj Dr S, Rao Dr K D, Chokshi M, and Kumar Dr P, Arora V, Sachin Bhokare Dr S, Ganguly I, 2011, A Critical Assessment of the Existing Health Insurance Models in India, A Research Study Sponsored under the Scheme of Socio-Economic Research, Public Health Foundation of India, The Planning Commission of India, New Delhi.

Régent S, Chauliac S, Rigollet B, 2011, Microinsurance What Do We Know?, *Microfinance & Microinsurance: Learnings from Market Studies in Latin America and Africa*, PlaNet Finance and PlaNet Guarantee.

República de Colombia. Ley Número 1122 de 2007, 9-1-2007.

República de Colombia, Corte Constitucional. Sentencia N° T-760 de 2008. 31-7-2008.

Phillips MA, Why do costings? Health Policy Plan, 1987; 2(3):255–7. doi: 10.1093/heapol/2.3.255.

Scheiman I, Langenbrunner J, Kehler J, Cashin C, Kutzin J, 2010, Sources of funds and revenue collection: reforms and challenges, In: Kutzin J, Cashin C, Jakab M, eds. *Implementing health financing reform: lessons from countries in transition*, World Health Organization, 87–118.

Schieber G, Cashin C, Saleh K and Lavado R, 2012, *Health Financing in Ghana*, Washington, DC: World Bank. doi:10.1596/978-0-8213-9566-0, <http://elibrary.worldbank.org/doi/book/10.1596/978-0-8213-9566-0>.

- Seddoh A, Adjei S, Nazzar A, Ghana's National Health Insurance Scheme, Views on progress, observations and commentary, Centre for Health and Social Services, June 2011,
- Shaw RP, Ainsworth M, 1995, Financing Health Services through User Fees and Insurance, The World Bank.
- Shepard D, Hodgkin D, Antony Y, 1998, An analysis of hospital costs: a manual for managers, World Health Organisation; 1998.
- Siadat B, 2013, The Impact of Ghana's National Health Insurance Scheme on Patient and Provider Behavior, Dissertation, Harvard School of Public Health, Unpublished.*
- Stanton B, Clemens J, 1989, User fees for health care in developing countries: a case study of Bangladesh, Soc Sci Med., 29(10):1199-205.
- Stirk C, 2013, Colombia: Resources for humanitarian response and poverty reduction, Global Humanitarian Assistance, Development Initiatives, www.globalhumanitarianassistance.org.
- Sun X, Jackson S, Carmichael GA, Sleigh AC. Prescribing behaviour of village doctors under China's New Cooperative Medical Scheme. Social Science & Medicine, 2009, 68(10):1775-1779.*
- Suttajit S, Wagner AK, Tantipidoke R, Ross-Degnan D, Sitthi-amorn C, 2005, Patterns, appropriateness, and predictors of antimicrobial prescribing for adults with upper respiratory infections in urban slum communities of Bangkok, Southeast Asian Journal of Tropical Medicine and Public Health, 36(2):489-497.
- The Next 33 000 000, How the private sector is reforming health care for Kenya's mass market, Open Capital Advisors Limited, October 2012
- The Research Institute, Rajagiri College of Social Sciences, 2009, RSBY-CHIS evaluation survey: facility level survey to assess quality of hospitals in RSBY network & post utilization survey of RSBY patient experience at Empanelled Hospitals in Kerala. Kochi: Rajagiri College of Social Sciences.
- Torres F M, Acevedo O B, 2013, Colombia Case Study: The Subsidized Regime of Colombia's National Health Insurance System, Universal Health Coverage Studies Series (UNICO No 15), The World Bank.
- Tu F, Tokunaga S, Deng Z, Nobutomo K, 2002, Analysis of hospital charges for cerebral infarction stroke inpatients in Beijing, People's Republic of China, Health Policy, 59(3):243-256.
- UNIDO, 2010, Pharmaceutical Sector Profile Kenya, Global UNIDO Project: Strengthening the local production of essential generic drugs in least developed and developing countries, United Nations Industrial Development Organization, Vienna, 2010.*
- UNDP, 2011, Sharing Innovative Experiences, Volume 18, Successful Social Protection Floor Experiences, Global South-South Development Academy, United Nations Development Programme.
- Vargas I, Unger J, Mogollón-Pérez A S, Vázquez M L, 2012, Effects of managed care mechanisms on access to healthcare: results from a qualitative study in Colombia.
- Vasavid C, Zhang Y, and Zhao Y, 2007. The Incidence of Public Spending on Health Care: Comparative Evidence from Asia, World Bank Economic Review, in press.
- Vellakkal S, 2012, Financial Protection in Health Insurance Schemes: A Comparative Analysis of Mediclaim Policy and CHAT Scheme in India, Journal of Health Management 2012, <http://jhm.sagepub.com/content/14/1/13>.

Wagner AK, Graves AJ, Reiss SK, Lecates R, Zhang F, Ross-Degnan D, 2010, Access to care and medicines, burden of health care expenditures, and risk protection: Results from the World Health Survey, Available from: <http://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pubmed/20828854>.

Weilant M, 2013, How health microinsurance schemes can achieve sustainability, Presentation at the 9th international microinsurance conference, Jakarta.

Wiesmann D, Jütting JP, 2001, Determinants of viable health insurance schemes in rural Sub-Saharan Africa, *Quarterly journal of international agriculture*, Vol. 40.2001, 4, p. 361-378, ISSN 0049-8599.

Wipf J, Garand D, Performance Indicators for Microinsurance, A Handbook for Microinsurance Practitioners, 2nd Edition, October 2010.

Witter S and Garshong B, 2009, Something old or something new? Social health insurance in Ghana, *BMC International Health and Human Rights*, <http://www.biomedcentral.com/1472-698X/9/20>.

World Bank Indicators, <http://data.worldbank.org/indicator/SH.XPD.OOPC.ZS>

World Health Organisation, 2010. Health systems financing: the path to universal coverage - World health report 2010. [Online]
Available at: <http://www.who.int/whr/2010/en/>
[Accessed 26 05 2014].

World Health Organization, 2013a, Research for universal health coverage: World health report 2013, ISBN: 978 92 4 156459 5.

World Health Organisation, 2013b. World Health Statistics 2013. [Online]
Available at: http://www.who.int/gho/publications/world_health_statistics/2013/en/
[Accessed 26 05 2014].

World Health Organisation, 2014. Health Financing. [Online]
Available at: http://www.who.int/gho/health_financing/en/
[Accessed 26 05 2014].

Xu K et al., 2007, Protecting households from catastrophic health spending. *Health Affairs (Project Hope)*, 26:972-983. doi: <http://dx.doi.org/10.1377/hlthaff.26.4.972> PMID:17630440.

Xu K et al., 2010, Exploring the thresholds of health expenditure for protection against financial risk. Geneva, World Health Organization, (World Health Report [2010] Background Paper, No 19).

Yamin AE, Gløppen S eds., 2011, Litigating health rights. Can courts bring more justice to health?, Cambridge, Mass.: Harvard Univ. Press (Human Rights Program Series. Harvard Law School) 435 p.

Younger SD, 2003, Benefits on the Margin: Observations on Marginal Benefit Incidence Analysis, *World Bank Economic Review* 17(1): 89–106.

Websites:

<http://allafrica.com/stories/201401301226.html>

http://www.countrywatch.com/country_profile.aspx?vcountry=78

<http://www.ghanaweb.com/GhanaHomePage/business/artikel.php?ID=266955>

<http://www.healthmetricsandevaluation.org/gbd/country-profiles>

<http://www.heritage.org/index/country/>

<http://www.heritage.org/index/country/>

<http://jointlearningnetwork.org/content/colombia>

<http://www.kpmg.com/global/en/issuesandinsights/articlespublications/necessity-mother-of-innovation/pages/rashtriya-swasthya-bima-yojana.aspx>

<http://medicakenya.co.ke/2013/08/government-initiates-talks-over-controversial-new-nhif-rates/>
<http://www.microinsurancenet.org/countryinformationdatabase/index.php>
http://www.knbs.or.ke/index.php?option=com_phocadownload&view=category&id=2:2009-census-documents&Itemid=637
<https://www.cia.gov/library/publications/the-world-factbook/>
<http://www.tradingeconomics.com/ghana/health-expenditure-public-percent-of-gdp-wb-data.html>
<http://www.populationfoundation.in/taxonomy/term/17/0>
<https://www.aarogyasri.gov.in/ASRI/FrontServlet?requestType=PublicViewsRH&actionVal=HomePgSurgList&scheme>
<http://www.jointlearningnetwork.org/content/national-hospital-insurance-fund-nhif>
http://www.med-informatica.net/BIS/WebMail_09a15nov09.htm
<http://www.thehindubusinessline.com/industry-and-economy/banking/health-insurance-must-cover-at-least-80-of-indians-ficci/article5455224.ece>
http://www.who.int/quantifying_ehimpacts/countryprofiles/en/

6.1. Addendum A

GBD Country Profiles can be accessed at: <http://www.healthmetricsandevaluation.org/gbd/country-profiles>

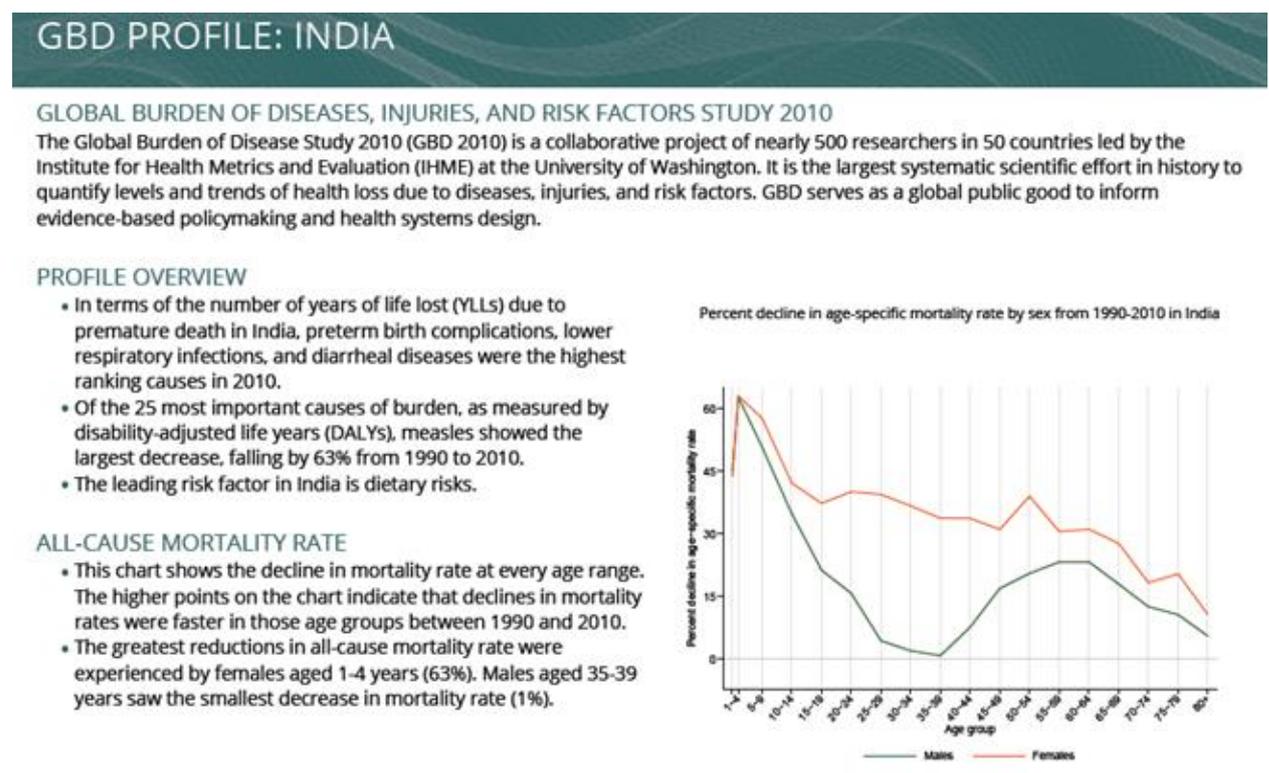
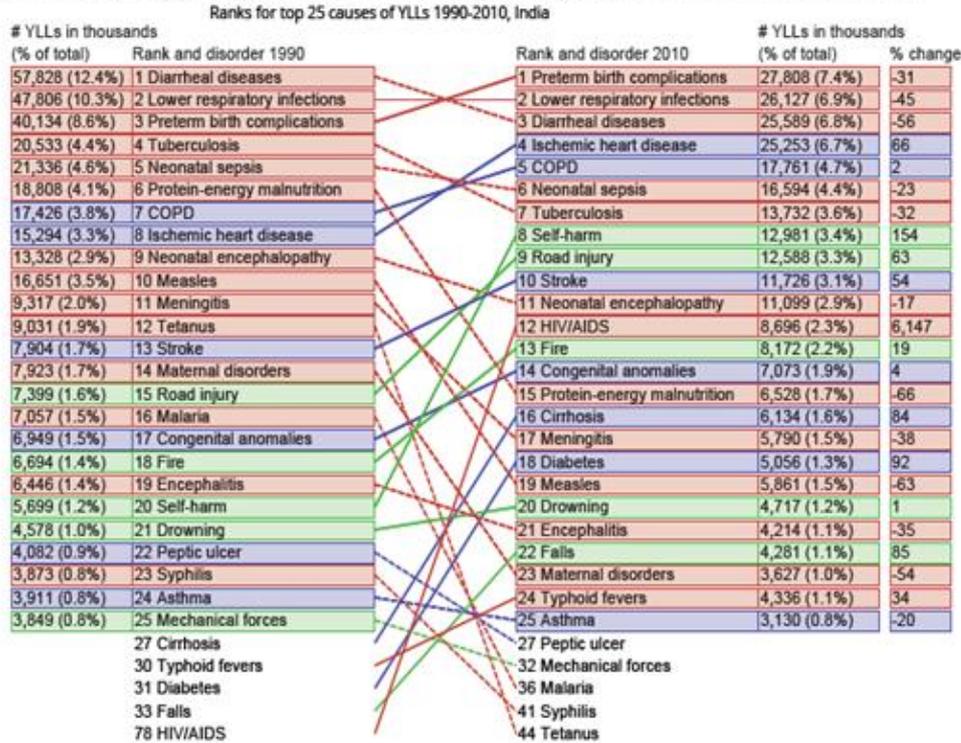


Figure 25

CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.



This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

Figure 26

YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in India are iron-deficiency anemia, low back pain, major depressive disorder, chronic obstructive pulmonary disease, and migraine.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

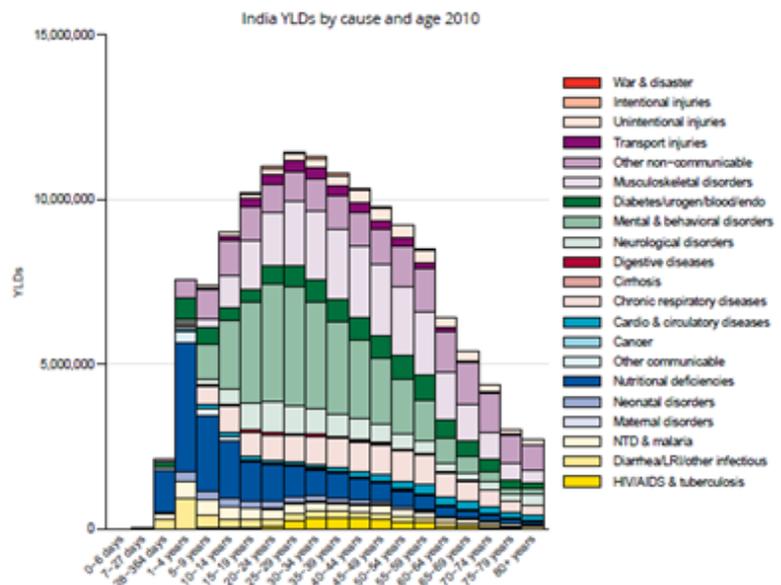


Figure 27

DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In India, the top three causes of DALYs in 2010 were preterm birth complications, diarrheal diseases, and lower respiratory infections. Two causes that appeared in the 10 leading causes of DALYs in 2010 and not 1990 were road injury and self-harm.

Figure 28

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries

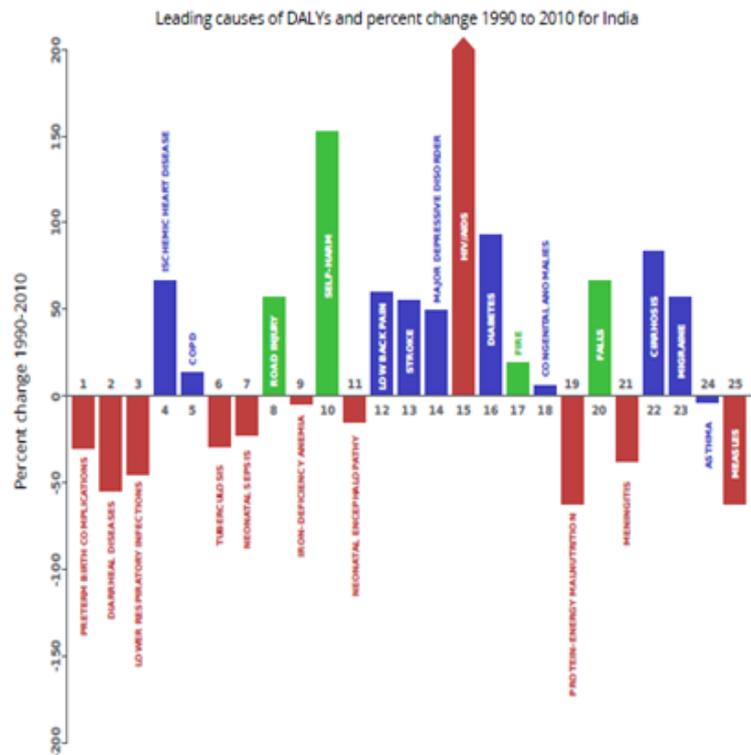


Figure 29

RISK FACTORS

Overall, the three risk factors that account for the most disease burden in India are dietary risks, household air pollution from solid fuels, and tobacco smoking. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and occupational risks, respectively, in 2010.

The graph shows the top 15 risk factors for India. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

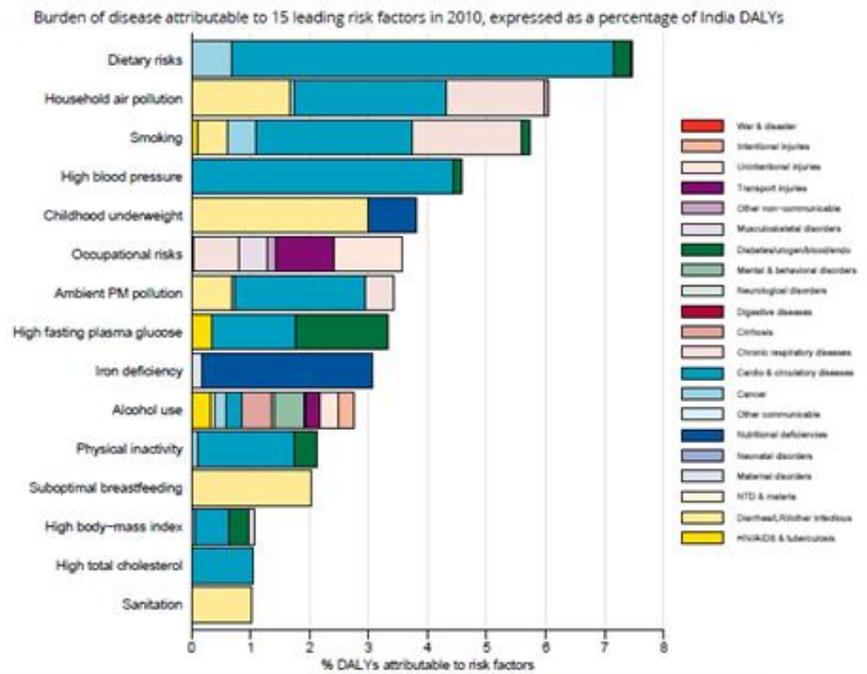


Figure 30:

6.2. Addendum B

http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/

Country profile of Environmental Burden of Disease

Colombia

Population	45.6 mio
GNI/capita	6 640 US\$
% urbanization	73%
% people living in cities greater than 100 000 inhabitants	41%
Population below the poverty line (national)	64% (1999)
Population below the poverty line (international, <\$1/day)	7% (2003)
Under age 5 mortality rate	21/1000 live births (2006)
Life expectancy	74 years (2006)

Environmental burden of disease for selected risk factors, per year

Estimates based on national exposure and WHO country health statistics 2004

Risk factor	Exposure	Deaths /year	DALYs/ 1000 cap /year
Water, sanitation and hygiene (diarrhoea only)	Improved water: 93%	2 100	2.3
	Improved sanitation: 86%		
Indoor air	SFU% households: 20%	2 400	0.9
Outdoor air	Mean urban PM10: 42 ug/m ³	2 600	0.4
Main malaria vectors	<i>A. darlingi</i> ; <i>A. neivai</i> ; <i>A. nuneztovari</i> ; <i>A. albimanus</i> ; <i>A. aquasalis</i>		
Main other vectors	<i>Lutzomyia trapidoi</i> ; <i>L. olmeca</i> , <i>Triatoma dimidiata</i> , <i>Rhodnius prolixus</i>		

Figure 31

Environmental burden of disease (preliminary), per year				
Estimates based on Comparative Risk Assessment, evidence synthesis and expert evaluation for regional exposure and WHO country health statistics 2004				
DALYs/1000 cap	(World - lowest: 13, highest: 289)		31	
Deaths			45 100	
% of total burden			16%	
Environmental burden by disease category [DALYs/1000 capita], per year				
Disease group	World's lowest country rate	Country rate	World's highest country rate	
Diarrhoea	0.2		2.5	107
Respiratory infections	0.1		1.2	71
Malaria	0.0		0.2	34
Other vector-borne diseases	0.0		0.3	4.9
Lung cancer	0.0		0.2	2.6
Other cancers	0.3		1.5	4.1
Neuropsychiatric disorders	1.4		2.9	3.0
Cardiovascular disease	1.4		2.0	14
COPD	0.0		0.8	4.6
Asthma	0.3		0.9	2.8
Musculoskeletal diseases	0.5		0.8	1.5
Road traffic injuries	0.3		2.6	15
Other unintentional injuries	0.6		3.6	30
Intentional injuries	0.0		7.5	7.5
Other indicators				
Use of leaded gasoline			No (2008)	
Overcrowding			27% (1993)	
Malnutrition (% stunting)			16% (2005)	

Figure 32

Disease/health condition	DALYs lost (x 1000)	Share in the total burden of disease (%)
Communicable diseases, maternal, perinatal and nutritional		42.21
Perinatal conditions	29,213	9.74
Respiratory infections	26,094	8.70
Diarrheal diseases	15,254	5.09
Childhood diseases	10,323	3.44
HIV/AIDS	10,178	3.39
Maternal conditions	8,650	2.88
Tuberculosis	8,478	2.83
Nutritional deficiencies	8,120	2.71
Tropical diseases*	3,805	1.27
STIs excluding HIV	2,931	0.98
Meningitis	1,586	0.53
Malaria & other vector borne illnesses	1,254	0.42
Hepatitis B and C	607	0.20
Leprosy	86	0.03
Non-communicable conditions		40.74
Mental illness	32,666	10.89
Cardiovascular diseases	30,481	10.16
Sense organ diseases	13,649	4.55
COPD and asthma	10,789	3.60
Digestive diseases	9,488	3.16
Cancers	8,800	2.93
Congenital anomalies	6,105	2.04
Musculoskeletal diseases	4,336	1.45
Diabetes	3,009	1.00
Genitourinary diseases	2,474	0.82
Endocrine disorders	409	0.14
Injuries		13.27
Unintentional injuries	32,209	10.74
Intentional injuries	7,598	2.53
All listed conditions	288,592	96.23
Others	11,318	3.77
*Includes schistosomiasis, chagas, trypanosomiasis, leishmaniasis, onchocerciasis and lymphatic filariasis†		

Table 22: Health conditions and disability adjusted life years in India, 2002

Source: BearingPoint Inc., 2008 from WHO World Health Report 2004