

Governance and Health Systems

Performance:

Exploring the association and pathways

A thesis submitted for the degree of Doctor in Public Health (DrPH)

by

Anna Elisabet Olafsdottir

School of Health Sciences and Social Care

Brunel University

July 2012

Abstract

There has been an increase in empirical evidence indicating an association between governance and health systems, suggesting that better governed countries tend to have healthier populations with better performing health systems. This is an important finding, as it could point to structural public health interventions having a greater impact on health systems performance than individually targeted interventions. This doctoral thesis in public health (DrPH) from Brunel University is a compilation of three independent research projects undertaken under different settings, converging in the examination of the relationship between governance and health systems.

The first project was a study conducted in the African region of the World Health Organization with the aim of understanding how and to what extent measures of governance are statistically correlated with performance of health systems as measured by a key health outcome: the under-five child mortality. The second project was a case study from a high income country in Europe during the period in which it went through an economic meltdown, the focus being a qualitative analysis of the extent to which the response to economic crisis influenced public health policy making and short term performance of the health system. The third project was a policy analysis carried out in an upper middle income country in Asia and the focus was to examine how the long history of health financing reform has influenced the performance of the health system.

All research projects indicate an association between governance and health systems and the case studies provide empirical evidence of how health systems are affected by governance quality. The African study shows a statistically positive relationship between governance indicators and health outcomes, suggesting better governed countries to have lower child mortality. The European and the Asian cases suggest accountability, responsiveness, transparency and fair partnership to be important governance qualities for successful policy making and reforms. This evidence could be of use to current and future policy makers and others with the

authority to configure and implement new public health policies. It indicates the importance of comprehensive analytical work prior to policy making with easy access to documents and fair participation with all stakeholders to increase the probability of reaching consensus oriented policy proposals followed by successful implementations.

The main contribution of this thesis is to provide evidence through robust statistical/qualitative analysis around the association between governance and health systems in countries at all income levels. The originality is located in the breadth (three different settings) as well as depth (three distinct, robust methods) of this kind of research. The congruence of findings regardless of study locations, the outcome measures used or types of methods applied have added to the growing evidence that there is a strong correlation between governance and health systems performance. This increased knowledge provides policy makers with additional evidence which can be applied to develop and improve governance with the aim of allocating public resources more efficiently and equitably. However, further research is required on governance and its link to health systems, inter alia how health equity is affected by selective partnership in the decision making processes and how political ideologies influence governance practices.

Contents

Abstract.....	2
Acknowledgements.....	7
Preface	8
Acronyms and initials	12
Glossary of key terms used in the thesis.....	14
List of Figures	16
List of Tables	18
Chapter 1: Introduction.....	19
Chapter 2: Literature review, governance and health systems.....	23
2.1 Governance.....	24
2.2 Health systems.....	28
2.3 A review of the literature - the link between governance and health systems.....	31
2.4 Governance and political ideologies	34
2.5 Summary.....	35
Chapter 3: The conceptual framework of the thesis	36
Chapter 4: Governance and Health Systems I: the association between governance and health systems performance – the case of Africa 2006.....	40
4.1 Introduction.....	40
4.2 Methods	42
4.3 Results	47
4.4 Discussion.....	58
4.5 Conclusion.....	61
Chapter 5: Governance and Health Systems II: analysis of the initial response towards the health system in a high income country going through an economic crisis - the case of Iceland 2008 - 2009.....	62
5.1 Introduction.....	62

5.2 Background to Iceland	64
5.3 The Icelandic health system	67
5.4 Method	75
5.5 Results	82
5.6 Discussion	101
5.7 Conclusion.....	106
Chapter 6: Governance and Health Systems III: understanding the impact of governance on health system financing reforms in an upper-middle income setting – the case of Malaysia 1995 - 2010.....	107
6.1 Introduction.....	107
6.2 Background to Malaysia	109
6.3 Method	118
6.4 Results	126
6.5 Discussion	143
6.6 Conclusion.....	147
Chapter 7: Discussion of the thesis	148
Chapter 8: Conclusions of the thesis.....	153
Appendices.....	155
Appendix 1: Indicators related to governance, financing and education used in the AFRO project.	155
Appendix 2: Indicators related to health outcome, health care and infrastructures used in the AFRO project.....	156
Appendix 3: An interview protocol used in the Icelandic case.	157
Appendix 4: An e-mail sent to key informants requesting their participation.....	159
Appendix 5: Participant’s information sheet in the Icelandic case.	161
Appendix 6: Ethics approval from Brunel University for the Icelandic case.	162
Appendix 7: An e-mail from the director of the National Bioethics Committee Office in Iceland.....	163
Appendix 8: The course of events in the Icelandic case in chronological order.....	164

Appendix 9: The situation in Iceland in February 2011	165
Appendix 10: Health system financing.....	170
Appendix 11: Participants' information sheet in the Malaysian case.	174
Appendix 12: Ethics approval from Brunel University for the Malaysian case.	176
Appendix 13: Monash supporting letter.....	177
Appendix 14: Price list and deposit requirements at Kuala Lumpur hospital.	178
Appendix 15: Full analysis of the Malaysia Plans.	179
Appendix 16: An overview of the analysis of the problems, politics, policies and actors in the Malaysian case.....	183
Appendix 17: Health systems performance in sub-Saharan Africa: governance, outcome and equity.....	184
References.....	193

Acknowledgements

I would like to thank all those who made it possible for me to explore the link between governance and health systems. Special thanks are given to all the people who participated in my research and provided me with valuable information, thus helping me to understand the link between governance and health systems. My gratitude is given to my colleagues and the professionals and staff at Brunel University, with special thanks to Tim Milewa in the Health Economics Research Group at Brunel, professor Christina Victor, the DrPH programme director, Joann Alexander, the DrPH programme manager and Jennifer Woodhead, the former DrPH programme manager. I also want to thank the staff at the Language Centre for reading through some of my work.

Thanks also go to my fellow citizens in Iceland, Professor Runar Vilhjalmsson at the University of Iceland and Professor Sigurdur Gudmundsson, the former Director of The Directorate of Health, for reading through and giving me advice on my earlier versions of the Icelandic case. I also want to thank my brother, Professor Sverrir Olafsson, for his valuable advice.

Special thanks to all my supervisors, Professor Pascale Allotey, Professor Daniel Reidpath and Dr Subhash Pokhrel for their constructive criticism and continuous motivation. I sincerely thank Professor Allotey, who has been my main contact throughout my studies, for always being there for me and for her inspiration. Last but not least, I would like to thank my husband, Vidar Vidarsson, for his unconditional support and patience, for reading my work many times and for giving me good advice.

Conflict of interest

I declare that there is not a conflict of interest and that no funding was received for the studies of this thesis.

Preface

I embarked on the Doctor of Public Health Programme (DrPH) at Brunel University in West-London in September 2007 after working for several years as a practitioner and senior manager in public health, both within the private and the public sector. As the general director for the National Public Health Institute of Iceland, I had the opportunity to work with policymakers and actively participate in policy development, decision making and the implementation of policies. This professional experience and the increased appearance of governance as an important determinant for health systems performance and population health in the literature inspired me to investigate the link between governance and health systems. My interest was to explore the issue of governance and its impact on health systems from a broad perspective, exploring the real life nexus between *research*, *policy* and *practice* (Brunel University 2007), exactly as the DrPH programme was presented¹. The programme emphasised a multidisciplinary approach to complex problem solving and encouraged DrPH-trainees to gain experience under diverse public health settings. The three projects, required for the DrPH programme, were therefore planned and organised to fulfil my research interests; however, at the same time I was also able to gain experience in working under different settings, applying various research methods.

When I entered the DrPH programme, it was a new course at Brunel University. The initial coursework, which spanned the first year of training, was based on multi-sectoral disciplines related to public health which gave a thorough and broad overview of public health and the complexity of the concept. However, limited effort was put into encouraging students to start planning what kind of research they should pursue after the coursework. Available internships were scarce and the network with potential cooperative organisations offered less than I expected. Additionally, the programme emphasised that all internships were unpaid and related costs were not refundable, which made them less attractive to me as a trainee with a good educational background and more than 10 years of professional experience.

¹ The DrPH programme is based on three projects focusing on *research*, *policy* and *practice*.

My projects were therefore undertaken in cooperation with academic professionals and based solely on my personal research interests and the technical feasibility of those potential projects.

Based on the nature of the DrPH programme, the three projects were executed one after another, delivering stand alone research reports. Hence, when the first project was defined, the second and third projects were still undefined and when the second research project had been decided upon, the last was still unformed. Nevertheless, it was always clear that the projects were to be connected through a theme that tied the research together to form a DrPH thesis (Brunel University 2007). In my thesis, it is governance and its association with health systems that is the common element in all the projects and thus provides the red thread.

It took an unexpected amount of effort and time to form the first project (meant to be a *research* placement). The reason might be that the taught element, although generally very good, did not include guidance on how to prepare a research proposal at a doctoral level. The research question of the first project dealt with governance, equity² and health systems performance measures and required quantitative research. As I started the analysis, it became clear that the dataset was small, thus causing fluctuations in the outcomes and difficulties in interpretations. Despite all obstacles, the project was successful, with meaningful results which were published in BMC Public Health in April 2011 (Olafsdottir et al. 2011). The paper, which is to be found in Appendix 17, has been highly accessed with 1,301 views in the first 6 months of its publication.

During preparations for the second project, an unprecedented economic crisis broke out in my home country, Iceland, including the collapse of practically the entire banking system. This situation, although tragic, presented a unique opportunity to observe and analyse the government's initial response towards a health system in a

² The concept of inequity embraces the moral or the ethical dimension of health inequalities by referring to health disparities that are unnecessary and avoidable and are therefore considered to be unfair and unjust in the context of what is generally accepted as a norm within the society under consideration (Whitehead 1991).

high income country going through an economic crisis (meant to be a *practice* placement); a subject that has been scarcely explored. Real time research provides an opportunity to observe events while unfolding, still with unknown outcomes. Analysis could be started while collecting data, which provided more flexibility for adjustments than in retrospective studies. It was in many ways convenient for me as an Icelandic citizen who speaks the language to undertake a case study in a country I know well. However, the task was also challenging as I was directly affected by the crisis just like other citizens of the country. Furthermore Iceland is a small country where people know a great deal about each other, which makes it easy for them to categorize their fellow citizens based on the family they belong to, their academic background, profession and known or anticipated political beliefs. This historical and cultural custom of this categorization might have affected how interviewees responded to my questions in the interviews by telling me more or less than they would have told another insider or outsider conducting the interviews. However, it must be emphasised that all interviewees are respectable professionals, anxious to make a positive contribution. Therefore, me being an insider should not have altered significantly any conclusions derived from this research, compared to an outsider doing the same analysis. The Grounded Theory provided systematic, but also flexible, working procedures and helped me to overcome the challenges, as did my supervisor, Professor Pascale Allotey, who continuously reminded me to stay focused on objectivity and professionalism.

Throughout my DrPH training, I had become increasingly interested in health system financing, especially in relation to the equal access of citizens to health system services. I was also keen to execute my third project in a different setting from the previous studies. Malaysia was deemed to be suitable for an analysis of the association between health system financing reforms and governance (meant to be a *policy* placement). The country has demonstrated improved health outcomes for decades, has had a relatively stable political situation and, at the same time, the private health care sector has grown considerably. Malaysia was also a good candidate for the research due to practical reasons, as my supervisors were moving from Brunel University in England to Monash University in Malaysia. This gave me

the great opportunity to undertake my last project in Asia. However, during the execution of the study some unexpected problems had to be resolved. Firstly, I had to obtain a visiting scholar visa from Monash University that took several months to arrive, despite the intensive work my supervisors put into speeding up the process. Secondly, I had never been to Malaysia before and was therefore not familiar with its history and culture. To overcome this, I spent considerable time and effort familiarising myself with Malaysian history and culture, which meant I was thoroughly prepared when I finally arrived there to conduct my research.

The final phase of the doctoral study was to combine the three projects into an integrated thesis. This phase was both complex and extensive and took much longer than could be anticipated according to the programme description. I realise that the DrPH programme is a relatively new educational offering and is under continuous development. However, I cannot help feeling that when I entered the programme it was not yet fully mature, with adverse consequences for me in terms of the time, effort and money required. In my opinion, several issues could be improved in order to benefit future DrPH trainees. Firstly the programme should extend its network of friendly organisations working within the public health sphere and offer interesting projects to DrPH trainees. Secondly, organisations that offer DrPH trainees work on their in-house projects should at least cover the costs of the students as a minimum. Thirdly, more emphasis should be put on the programme's aim to cultivate future leaders in public health (Brunel University 2007). One way to support this could be a forum for trainees to present their current research on a regular basis, as well as studies executed by others, thus making them stronger in defending or criticising public health research in a professional manner.

Now that I have completed my DrPH thesis and reflect back, I cannot help but be proud of my work and grateful to all those who supported me throughout these years. I wish Brunel University all the best in developing and offering a solid DrPH programme to future DrPH trainees.

Acronyms and initials

A&E:	Accident and Emergency
AFRO:	World Health Organization - African region
AIDS:	Acquired Immune Deficiency Syndrome
ATLAS.ti:	The name of a type of computer software used in qualitative research
BM:	Bahasa Melayu
BN:	Barisan Nasional
CLJ:	Law Database of Malaysia
DHS:	Demographic Health Surveys
DrPH:	Doctor in Public Health
DTP3:	Three doses of diphtheria, tetanus toxoid and pertussis
EPU:	Economic Planning Unit
Et al.	Et alia, meaning “and others”
GDP:	Gross Domestic Product
GNI:	Gross National Income
GP:	General Practitioner
HALE:	Health Adjusted Life Expectancy
HIV:	Human Immunodeficiency Virus
IMF:	International Monetary Fund
KPJ:	A private hospital network in Malaysia
MCA:	Malaysian Chinese Association
MIC:	Malaysian Indian Congress
MIF:	Mo Ibrahim Foundation
MMA:	Malaysian Medical Association
MP:	Member of Parliament

NEP:	New Economic Policy
NGO:	Non-governmental Organisation
NHA:	National Health Authority
NHMS:	National Health and Morbidity Survey
OECD:	Organisation for Economic Co-operation and Development
ppp:	Purchasing power parity
r:	regression coefficient
RLTC:	Rule of Law, Transparency and Corruption
RM:	The Malaysian currency, Ringgit
SEO:	Sustainable Economic Opportunity
STATA:	Data Analysis and Statistical Software
U5MR:	Under-five mortality rate
UMNO:	United Malays National Organisation
UNDP:	United Nations Development Programme
UNESCAP:	The United Nations Economic and Social Commission for Asia and the Pacific
USD:	United States Dollar
WHO:	World Health Organization
WHOSIS:	Statistical Information System from the World Health Organization

Glossary of key terms used in the thesis

Decision making process: A phrase used for the development and implementation of policies, including the problem identification and formulation and analytical work prior to policy formulation.

Economic crisis: A term used when a country experiences a sudden economic downturn due to financial crisis, causing a loss of values and decreased level of investments, leading to diminishing GDP, devaluation of the local currency, increased unemployment and inflation.

Government: A term used for a group of people who are responsible for controlling a country and for an efficient use of the country's resources and public funds. Governments have a leading role in public decision making processes and are one of the principal actors in protecting and promoting population's health and well-being and other human rights.

Governance: No single universally accepted definition exists for the term, which is commonly referred to as the way a country is governed. This includes the process by which governments are selected, monitored and replaced. Furthermore the term includes the capacity of governments to effectively formulate and implement policies, the way they organise public institutions, how they provide information regarding their decisions and actions and how they interact with citizens. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) define governance as "the process of decision making and the process by which decisions are implemented (or not implemented)" (Sheng 2011), which is the definition adopted in this thesis.

Health equity/equity in health: The phrase does not have a universally accepted definition but the term in-equity is commonly used to describe disparities in health between social groups, both in terms of health outcomes and the usage of health care services. The term embraces the ethical dimension of health inequalities by referring to the health disparities as unnecessary and avoidable and therefore unfair.

Health system: The phrase is used for a highly complex system that includes all participants whose primary purpose is to improve populations' health by protecting people against ill health, treating the sick and protecting people from the costs of ill-health (World Health Organization 2005).

Health system performance: No single universally accepted measure exists to assess health system performance; however, the World Health Organization (WHO) has suggested that health systems perform well if they achieve the goals for which they should be held accountable. Health outcomes, like life expectancy and child mortality are commonly used to evaluate health systems performance. Other measures also exist such as health systems' responsiveness, meaning how well a health system meets the legitimate expectations of their populations and how fairly the system is financed.

List of Figures

Figure 1: A concept map of the thesis	22
Figure 2: UNESCAP's eight categories for good governance.	27
Figure 3: A framework of a health system.	30
Figure 4: A two-way scatter graph of the U5MR quintile ratio and per capita total expenditure on health.	54
Figure 5: Two-way scatter graph for the U5MR and per capita total expenditure on health.	55
Figure 6: A two-way scatter graph for the U5MR and per capita total expenditure on health in countries that spend less than USD\$100 on health per capita. Source: WHOSIS.	56
Figure 7: The U5MR in Eritrea, Ethiopia, Malawi, Nigeria and Tanzania in all wealth quintiles. Source: DHS.	57
Figure 8: An overview of the Icelandic health system.	68
Figure 9: Health regions in Iceland and their population size. Source: Directorate of Health 2008a.	69
Figure 10: Health expenditure as percentages of the nation's GDP and as a percentage of household participation. Source: Statistics Iceland (2009b)	70
Figure 11: Governmental expenditure on the health system in 2008. Source: Statistics Iceland (2008)	71
Figure 12: The timeframe of the data collection in Iceland.	77
Figure 13: Data analysis using the Grounded Theory approach.	81
Figure 14: The analytical process of two selected transcripts to show how categories were formed, compared and used to establish core categories which were applied to develop the grounded theory.	82
Figure 15: A map of the south west corner of Iceland. Source: googlemap.com	95
Figure 16: Out-of-pocket payments in the Icelandic health system in the year 2007. Source: Committee to explore the out-of-pocket payments in the health care service in Iceland (2009).....	100
Figure 17: The grounded theory of the Icelandic case study.....	101
Figure 18: Gross National Income per capita (ppp International \$) in Malaysia from 1990 to 2006. Source: World Health Organization Global Health Observatory.....	111
Figure 19: The increase in private hospital beds from 1980 to 2003, presented as absolute numbers and as a percentage of total hospital beds. Source: Leng, Barraclough (2008).....	113
Figure 20: Governmental and private spending on health care as percentages of total health expenditure. Source: WHO Global Health Observatory.....	115

Figure 21: Cost sharing of private health expenditure between out-of-pocket payments and prepayment plans from 1995 to 2008. Source: WHO Global Health Observatory.	116
Figure 22: The policy triangle framework. Adapted from Walt, Gilson (1994).	124
Figure 23: The Multiple Stream theory developed by John Kingdon (Kingdon (1995). Adapted from Zahariadis (2007).	125
Figure 24: Mean household annual income (RM) and the mean out-of-pocket annual expenditure on health (RM). Source: Ministry of Health (2006).	135
Figure 25: Mean annual out-of-pocket health expenditure in different income groups (monthly income). Source: Ministry of Health (2006).....	136
Figure 26: The course of events in the Icelandic case in chronological order.	164
Figure 27: Financial allocations to the Landspítali University Hospital (columns) and the District General Hospital in Akureyri (northern Iceland) (line) according to the State budgets. All numbers are adapted to 2011 using the annual average consumer index provided by Statistics Iceland.	167
Figure 28 : Financial allocations to selected health centres according to State budgets in 2008, 2009, 2010 and 2011. All numbers are adapted to 2011 using the annual average consumer index presented by Statistics Iceland.	168
Figure 29: A framework for health care financing composed of revenue collection, risk pooling and health care purchasing.	170

List of Tables

Table 1: Six categories used by the World Bank to evaluate governance quality	25
Table 2: A conceptual framework of the thesis.....	39
Table 3: Sources of the variables used in the AFRO analysis.....	45
Table 4: Descriptive statistics for the U5MR, the U5MR quintile ratio and the predictor variables used in the AFRO analysis.....	48
Table 5: A correlation matrix showing the inter-relationships between the governance indicators and the covariates. Numbers above show the correlation coefficient (r) and numbers beneath display the p-value.	49
Table 6: Three models estimating the relationship between U5MR, governance and nine covariates.	51
Table 7: Three models estimating the relationship between the U5MR quintile ratio, governance and nine covariates.....	53
Table 8: The World Bank's governance indicators for Iceland.	65
Table 9: Data used in the Icelandic case study	80
Table 10:An overview of data used for the policy analysis.	122
Table 11:Ward charges in general and maternity wards and in executive wards according to the Fees (medical) (amendment) Order 2003.	128
Table 12:Hospitalisation charges for foreigners in Malaysia.	128
Table 13:An overview of the content of the Malaysia Plans in the context of politics, the economy and equity.	132
Table 14:Governance indicators in Malaysia from 1996 to 2009 presented by the World Bank.	143
Table 15:Data related to governance, financing and education in the AFRO study.....	155
Table 16:Data related to health outcomes, health care and infrastructures in the AFRO study.....	156
Table 17:Changes in daily smoking habits and domestic sale of alcohol from 2008 to 2011.	169
Table 18:A price list from Kuala Lumpur hospital.	178
Table 19:Deposit requirements for admission at Kuala Lumpur hospital.....	178
Table 20:An overview of the analysis of the process and actors in Malaysia.	183

Chapter 1: Introduction

More than fifty years ago, the United Nations adopted the Universal Declaration of Human Rights (United Nations 1948). The Declaration embraces human rights concerns, which are presented in 30 articles. The first article lays the universal foundation of human rights with the message that every human being is born free and equal in terms of dignity and rights. The other articles cover issues related to political, economic, social and cultural rights and the 25th article says that “everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including ... medical care and necessary social services” (United Nations 1948). The declaration did not, however, encompass how these rights were to be fulfilled and who was responsible for their fulfilment. In 1993, during the World Conference on Human Rights, the United Nations adopted the Vienna Declaration and Programme of Action, which identified governments as one of the principal actors in the protection and promotion of human rights, including nations’ health and well-being (United Nations 1993).

Amartya Sen, a Nobel Laureate in Economics, claimed that the types of institutions existing in societies and how they function and interact are vital for people’s opportunities. He further stated that the provision of sufficient facilities for both education and health care, which he declared are the governments’ responsibilities, are essential to fulfil human rights for well-being and good health (Sen 1999). Kofi Annan, former Secretary of the United Nations, pushed a very strong agenda to highlight the importance of governance as fundamental for every society and asserted that governance is “perhaps the single most important factor in eradicating poverty and promoting development” (Annan 2007, p12).

Increasing empirical evidence indicates that better governed countries tend to have healthier populations, suggesting diverse and complicated associations between governance and health systems (Kaufmann, Kraay & Zoido 1999; Gupta, Davoodi & Tiongson 2000; Wagstaff, Claeson 2004; Rajkumar, Swaroop 2008; Reidpath, Allotey 2006; Klomp, de Haan 2008; Abed, Gupta 2002; Mitchell, Bossert 2010; Lazarova, Mosca 2008; Lewis 2006; Sheaff 2005; Tarin et al. 2009; Ruger 2007).

Governance scores in the Nordic countries are above 90% of maximum available scores given by the World Bank and life expectancy at birth in these countries is over 80 years. Countries in Southern Asia score below 50% of maximum available scores and life expectancy in this area is lower than 60 years (World Bank 2010c; World Health Organization 2010).

Good governance is associated with accountability and responsiveness, as authorities are expected to act in the best interests of their populations. They are also supposed to use public resources efficiently and to distribute them in an equitable manner while employing transparent and consensus oriented working procedures, allowing for public participation in policy making and implementation (Sheng 2011; World Bank 2010c). Although politics are not usually included in the definition of governance, they clearly play a role in public health policy making. Countries following social democratic philosophies tend to suffer fewer inequalities and better health outcomes than countries in which liberal ideologies have been followed (Navarro et al. 2003; Navarro, Shi 2001; Safaei 2006; Mooney 2007; Maynard 2007; Wilkinson, Pickett 2009; Navarro 2007; Meier 2010; Thomas, Weber 2004). It is therefore difficult to fully distinguish political ideologies from governance and therefore political ideologies are taken into consideration in the analytical work of this thesis (Walt 2006; Buse, Mays & Walt 2005).

The concepts of “governance” and “health systems” are both somewhat abstract and definitions are not consistent. The World Bank, which annually aggregates data to create an index that ranks countries according to governance quality, refers to governance as the traditional way of managing countries and institutions, involving the process by which policies are executed (World Bank 2010c; Kaufmann, Kraay & Mastruzzi 2009). The United Nations refer to governance as formal and informal arrangements that determine how public decisions are made (United Nations, Department of Economics and Social Affairs 2007), and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) simply define governance as “the process of decision making and the process by which decisions are implemented (or not implemented)” (Sheng 2011), which is the definition adopted in this thesis.

No universal definition exists for health systems, but the World Health Organization refers to the term as a system that includes all participants whose primary purpose is to improve health and a system that delivers quality services to all people, when and where they need them (World Health Organization 2005). A health system therefore requires a robust financing mechanism, well maintained facilities, a well trained workforce and reliable information. How well health systems perform depends on a wide variety of factors, but the World Health Organization has suggested that they should be evaluated on the basis of how well they achieve the goals for which they should be held accountable (World Health Organization 2011).

The appearance of new evidence suggesting governance to be an important determinant for health systems performance and population health has stimulated this thesis to examine how governance practices at the national level affect health outcomes, decision making and the implementation of decisions within the health sector. The aim set for this thesis was to make a contribution by increasing the knowledge related to the link between governance and health systems in countries at different income levels by applying various research methods. No such study exists in which the relationship between governance and health systems performance is coherently explored both in terms of breadth (different settings) and depth (application of mixed but robust method of analysis). By incrementally increasing the knowledge of this link, this thesis provides additional evidence around the relationship between governance quality and health outcomes, health equity and decision making within health systems. All these research areas have been scarcely studied. The potential benefit is that policy makers are provided with improved evidence based knowledge which they can apply to develop and improve their working procedures with the aim of allocating public resources more efficiently and equitably.

A concept map of the thesis is shown in Figure 1. The first part of the study is an analysis undertaken in a low income setting, investigating the **association** between governance indices and health outcomes, measured through child mortality and the ratio between child mortality in the lowest versus the highest wealth quintiles. Secondly, it explores how governance practices, in relation to **decision making**,

affect the initial response towards an advanced health system as a high income country goes through an abrupt economic crisis. Thirdly, the thesis examines how health system financing reforms are influenced by governance practices, in relation to **implementation** of policies, in a middle income setting (see Figure 1).

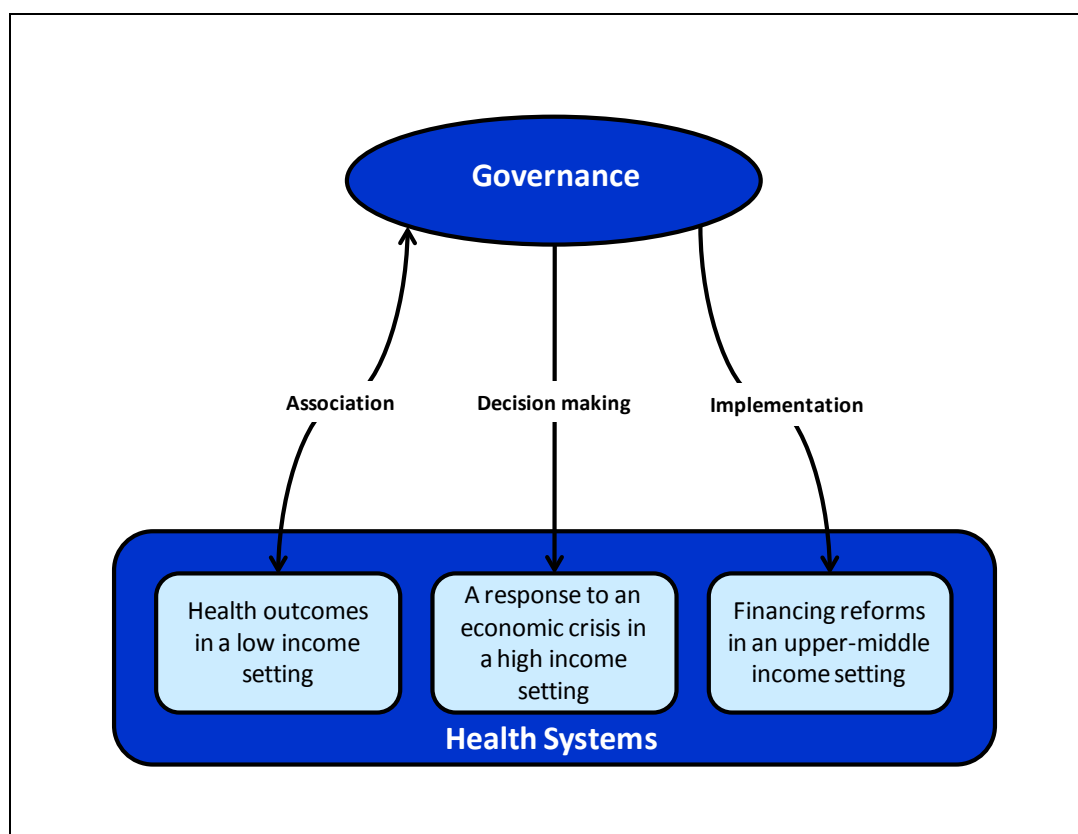


Figure 1: A concept map of the thesis

In the subsequent chapter, the terms governance and health systems will be discussed in more detail and the results from the literature review on the association between governance and health systems will be presented. Chapter 3 provides a more thorough description of the conceptual framework for the thesis, which is then followed by the results from the individual studies. Chapter 4 presents the results of the quantitative analysis in Africa, Chapter 5 the results from the qualitative analysis exploring the response to an economic crisis in a high income setting and Chapter 6 demonstrates the results of the association between health system financing reforms and governance in a middle income setting. The Discussion of the thesis will be presented in Chapter 7, followed by the Conclusion in Chapter 8.

Chapter 2: Literature review, governance and health systems

The aim of the literature review was to identify and evaluate the broader nature of the relationship between governance and health systems and how governance practices might impact on health systems performance. As per the nature of the DrPH programme, some research had already been identified in relation to the individual projects of this thesis and therefore a systematic appraisal was not an appropriate method for this literature review (Centre for Reviews and Dissemination 2009). The additional search was carried out to update study-specific review and consider wider literature on the links between governance and health systems. The Scopus database and the advanced scholar search at Google were employed. Scopus was selected as it is one of the largest databases presenting peer reviewed literature from the sciences, medicine and the social sciences. Google scholar was used to increase the probability of finding working papers and discussion papers from professional associations and international organisations that have studied the relationship, but not necessarily published their results in peer reviewed journals. The search was restricted to papers written in English and the search criteria were limited to the word “governance” and the exact phrase “health system”. These search criteria might have missed some specific articles related to the link between governance and health systems, but as this literature review was to establish the broader link it is not seen as a problem for this thesis. However, to compensate for that issue, reference lists of identified papers were studied in order to discover additional studies. The search on Scopus delivered 182 articles and the Google search showed 32 links. They were scrutinised to ascertain papers focusing on governance at the national level in relation to health systems.

Before discussing the existing literature on the broad relationship between governance and health systems, it is important to appraise the terms “governance” and “health system”. The next section will give an overview of the conceptualisation of “governance” and “health systems,” which will be followed by the presentation of the results from the literature review. As political ideologies were identified in the

literature as an important factor in public health policy making, the issue of political ideologies will be addressed in a sub-section in relation to governance.

2.1 Governance

One universal definition of the term “governance” does not exist and international organizations apply different explanations to interpret the concept of “governance”. The World Bank defines governance as “...the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them” (World Bank 2010c). In order to evaluate the quality of governance, the World Bank has developed a methodology used to rank countries of the world according to their governance quality. As illustrated in Table 1, the Bank employs six categories of variables as an input into their evaluation of governance quality: (i) Voice and Accountability; (ii) Political Stability and Absence of Violence; (iii) Government Effectiveness; (iv) Regulatory Quality; (v) Rule of Law; and (vi) Control of Corruption (Kaufmann, Kraay & Mastruzzi 2003; Kaufmann, Kraay & Mastruzzi 2009). Every category has a wide variety of subordinate variables or indicators based on data gathered from a number of survey institutions, think tanks, non-governmental organisations and international organisations (World Bank 2010c).

Table 1: Six categories used by the World Bank to evaluate governance quality

Category	Inclusion
Voice and Accountability	Captures, inter alia, the extent to which citizens are able to participate in elections, freedom of expression and liberty to form free association and to run free media.
Political Stability and Absence of Violence	Involves the likelihood of governments being overthrown or destabilised, as well as including political violence and terrorism.
Government Effectiveness	Includes the perception of the quality of public services and their independence from political pressure. Also captures the quality of policy formulation and implementation and the credibility of governments' commitment to policy making.
Regulatory Quality	Involves the perception of the ability of governments to formulate and implement policies and regulations and the promotion of private sector development.
Rule of Law	Includes the extent to which agents can abide by the rules of society, particularly property rights, the police and the courts and the likelihood of violence and crime.
Control of Corruption	Captures the extent to which public power is exercised for private gain and the influence on states by elites and private interests.

Source: Kaufmann, Kraay & Mastruzzi (2009).

The Organisation for Economic Co-operation and Development (OECD) describes governance as: "...the exercise of political, economic and administrative authority necessary to manage a nation's affairs" (Organisation for Economic Co-operation and Development 2007). The OECD is one of the few organisations that include politics in its definition of governance. They further describe good governance as "... characterised by participation, transparency, accountability, rule of law, effectiveness, equity, etc." (Organisation for Economic Co-operation and Development 2007).

These two definitions demonstrate the complexity of the governance concept and despite the effort made by the World Bank and several other organisations, there does not exist any simple way to measure its quality. The underlying terms most commonly used to describe and define governance are policy formulation, accountability, transparency and partnership. Other terms also frequently applied, are rule of law, effectiveness and efficiency, equity and stewardship. Neither the World Bank nor the OECD include stewardship as a stand-alone term in their

definitions and evaluations, however, the World Health Organization has described stewardship as the essence of good governance (World Health Organization 2000).

Stewardship is yet another concept which is hard to define and therefore difficult to measure. The World Health Organization identifies several elements of stewardship, inter alia; having the broad strategic vision for improving populations' health, formulating health policy, exerting influence, building partnership and ensuring accountability and transparency. Despite the absence of the word "stewardship" in many of the definitions of governance, stewardship is recognised as one of the fundamental factors affecting governments' accountability and responsibility in securing the welfare of nations, exercised through trust and legitimacy (Saltman, Ferroussier-Davis 2000), (World Health Organization 2007b).

It should also be noted that intelligence and information, despite their importance for governance at all levels, are terms that are rarely included in governance definitions. Intelligence and information is essential for informed decision making within health systems. Therefore relevant data must be available, analysed and applied to generate meaningful information for the decision making process (Siddiqi et al. 2009).

In 2009, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) presented a short and simple definition of governance which will be referred to in this thesis, namely "the process of decision making and the process by which decisions are implemented (or not implemented)" (Sheng 2011). Although short, this definition is quite precise and the phrase "process of decision making" embraces, in my view, a successful, corruption-free managerial execution of the authority showing respect to citizens by including them in the policy process. UNESCAP recognises governments as one of the most important actors in decision-making and the implementation of decisions, although they also identify the media, international organisations, donors and others as important players in the process (Sheng 2011). UNESCAP applies similar categories as the World Bank to prescribe governance quality, although it uses eight categories in comparison to the six outlined by the World Bank: (i) Accountable; (ii) Responsive; (iii) Transparent; (iv)

Participation; (v) Equitable and Inclusive; (vi) Follows the rule of law; (vii) Effective and Efficient; and (viii) Consensus oriented. Figure 2 illustrates these categories and they will subsequently be discussed in more detail.



Figure 2: UNESCAP's eight categories for good governance.

It can be argued that **accountability** and **responsiveness** are two of the fundamental requirements of good governance. **Accountability** and **responsiveness** ensure that decisions are made by authorities that have the responsibility to respond to the needs of the population and to keep promises, often made through an election process. It includes the obligation of governments to provide information regarding their decisions and actions and to justify them to the public (World Bank 2007a). This implies that decisions and consequent actions must be enforced **transparently** with easy access to understandable information and imposed in accordance with established and accepted **rules and regulations** (Sheng 2011). Good governance includes fair **participation** in the decision making process, permitting stakeholders to freely express their opinions. Given scarce resources, good governance also requires an **effective** and **efficient** use of

resources, where an effort is made to reach a **consensus** around major decisions. Good governance also requires that the end result of all major decisions are **equitable** and in the best interests of the whole community (Sheng 2011).

The categories of good governance, presented by the UNESCAP and the World Bank, apply to all levels of governance; global, national, regional, organisational and even to households. The categories are also inter-related as it is for example unlikely that anyone in power can be responsive if not accountable at the same time. And if someone in power does not allow for fair partnership while dealing with social affairs s/he is not working transparently. Furthermore, there is an interaction between the governance of different sectors within a society. The Ministry of Health is the principal governing body of the health system; however other factors affect public health and health outcomes that fall under other ministries. Infrastructure, such as roads, is an example of something that can have significant impact on access to health care centre, especially in rural areas in less developed countries and roads do not fall under the Ministry of Health. Other broader social and economic politics and legislative functions also play a role such as the preparation of new bills in ministries or parliaments regarding issues affecting nations' welfare (Siddiqi et al. 2009). Even global governance can affect governance within national health systems such as in countries heavily depending on aid and are therefore capable of having an impact on the sustainability and performance of health systems and ultimately health outcomes (Siddiqi et al. 2009). However, as central governments are the main body responsible for nations' welfare, governance on national level plays the most important role for health outcomes in every society (United Nations 1993). This applies to all countries irrespective of their type of health systems providing public and/or private health care, as the national government makes the regulatory framework both for the public and the private sectors. This applies to health system financing mechanism and incentives (World Bank 2012), allocation of resources and accessibility of health care services. Furthermore, national governments formulate the general vision for national health, generate health policies, implement the policies and allow for partnership in the overall process.

Governance within health systems also plays an important role for health outcomes. As resources are limited, governance within health systems plays an important role for the utilisation and distribution of the scarce resources. Therefore, governance within health systems is an important determinant for the overall efficiency and equity of the health sector (Brinkerhoff, Bossert 2008).

2.2 Health systems

A health system is a highly complex phenomenon. It is a system whereby the primary purpose is to improve populations' health and well-being, embracing all participants who are active in protecting people against ill health, treating the sick and protecting people from the costs of ill-health (World Health Organization 2005; McIntyre, Mooney 2007). Health systems are subject to nations' economic strength and political stability, but they are also shaped by interaction with other sectors of a society, neighbouring countries and international organisations, as well as a range of national characteristics such as cultural inheritance, religion, norms and dominant political ideologies, behaviour and social capital³ (Morgan, Swann 2004; Roemer 1991).

A framework of a health system and its main associate sectors is illustrated in Figure 3.

³ Social capital includes social networks and connections and how people perceive their belonging to a community (Putnam 2000).

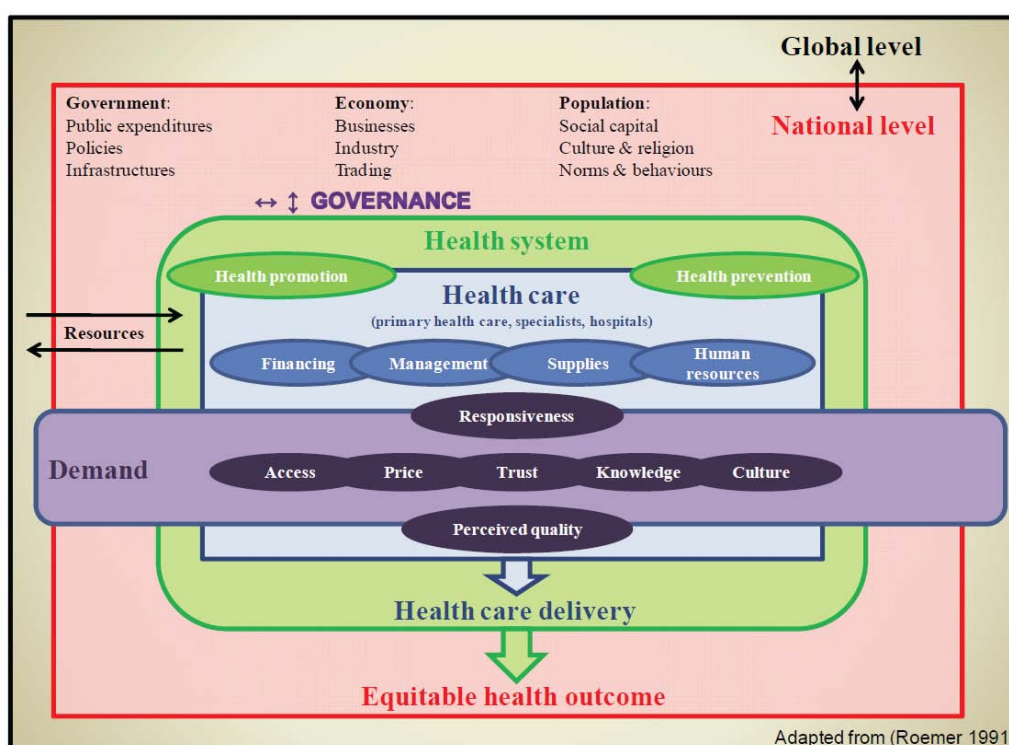


Figure 3: A framework of a health system.

No single universally accepted measure exists to assess health system performance, but in 2000 the World Health Organization made an attempt to establish an index for health systems performance, suggesting three intrinsic factors to be used as measures: health outcomes, responsiveness and fair financing (World Health Organization 2000). Health outcome measures were based on disability-adjusted life expectancy and health equality in terms of child survival. Responsiveness was a new concept established to measure how well a health system met the legitimate expectations of the population regarding the non-health enhancing aspects of the system (Darby et al. 2000). The third factor, fair financing and financial risk protection, measured how health systems assure that households do not become impoverished with regard to obtaining necessary health care. The World Health Organization report from 2000 provoked a strong debate, especially in relation to its methodology and data availability and reliability (Almeida et al. 2001; Williams 2000; Navarro 2000; Smith 2002). However, a revision of the report, ten years later, suggests that it marked the onset of new discussions on health system

performance, especially with regard to health system financing (Frenk 2010; McIntyre 2010).

Child mortality and health equality in terms of child mortality in different socio-economic groups was used to operationalise health system performance in the African setting of this thesis, while decision making and implementation in relation to governance quality were used to evaluate health system performance in relation to economic crisis and financing reforms.

2.3 A review of the literature - the link between governance and health systems

New empirical evidence, suggesting an association between governance and health system performance, has grown in recent years (Kaufmann, Kraay & Zoido 1999; Gupta, Davoodi & Tiongson 2000; Wagstaff, Claeson 2004; Rajkumar, Swaroop 2008; Sheaff 2005; Tarin et al. 2009; Marks, Cave & Hunter 2010; Mitchell, Bossert 2010; Plochg et al. 2006; Victora et al. 2000; Eichler 2001). At the beginning of this century, both the World Bank and the International Monetary Fund published Working Papers demonstrating a negative association between governance quality and infant and child mortality (Kaufmann, Kraay & Zoido 1999; Gupta, Davoodi & Tiongson 2000). Kaufmann et al. (1999) performed cross-sectional regressions of 150 countries, applying, then relatively new, governance indices from the World Bank (Kaufmann, Kraay & Zoido 1999). They found a strong negative association between infant mortality and each of the six aggregate governance indicators, suggesting better governance might improve development outcomes. Gupta and colleagues also based their study on a cross-sectional analysis, but used the corruption perception indices presented by the Political Risk Services Group⁴ as a measure of governance quality (International Country Risk Guide 2011; Gupta,

⁴ The Political Risk Services Group publishes the International Country Risk Guide (ICRG), which has evaluated and forecasted international risks based on the level of perceived corruption, bureaucratic quality and law and order since the early 1980s. The methodology was developed by Professors William D. Coplin and Michael K. O'Leary at the Maxwell School of Citizenship & Public Affairs (International Country Risk Guide 2011).

Davoodi & Tiongson 2000). Despite the different proxies for governance, both studies found a positive association between child survival and governance quality. Numerical proxies for complicated subjects like governance are not flawless and do not necessarily cover all aspects of good governance practices. Nevertheless, these studies indicate that low governance quality might reduce social gains like improved health.

A few years later, Wagstaff and Claeson (2004) addressed the adverse impact of governance quality on child mortality in a comprehensive report from the World Bank, "Rising to the Challenges", suggesting that increased public spending on health would only reduce child mortality if governance indices were above certain minimum levels (Wagstaff, Claeson 2004). This suggestion is consistent with a newer finding from Rajikumar and Swaroop (2008), who examined the links between public spending, governance and health outcomes (Rajkumar, Swaroop 2008). They, like Gupta and colleagues, measured governance by applying indices from the International Country Risk Guide (International Country Risk Guide 2011). Their results indicate that governance quality had a significant impact on how efficiently increased public health spending improved health outcomes and suggest that public spending had virtually no impact on health outcomes in poorly governed countries (Rajkumar, Swaroop 2008).

Cross country data, although good for searching for associations, do not inform about causal relationships. Case studies can serve that purpose well, as they can inform through establishing the kind of pathways through which governance affects health system performance. A few case studies have been undertaken to evaluate the impact of governance on health systems, applying some of the criteria used by the UNESCAP and the World Bank, as presented in Table 1 and Figure 2. These studies have suggested health systems performance to be negatively affected if authorities fail to meet good governance criteria (Sheaff 2005; Tarin et al. 2009; Marks, Cave & Hunter 2010; Mitchell, Bossert 2010; Plochg et al. 2006; Victora et al. 2000; Eichler 2001).

Governance failures, related to a lack of partnership and inefficiency, were recognised as impediments for successful health system reforms in case studies from Russia and Pakistan (Sheaff 2005; Tarin et al. 2009). Following the economic crisis in Russia in the 1990s, changes in hospital funding were introduced (Sheaff 2005). After the alterations, hospitals were funded by local authorities and through insurance. The new funding mechanism was overlapping due to incompatible incentives. If hospital management reduced the number of day-beds, they were penalised by the local authorities with fewer payments. If, on the other hand, they increased day-beds they received fewer insurance payments. The case suggested that the reforms failed, due to a lack of partnership, coordination and insufficient preparedness when evaluating causes and consequences, leading to negative impacts on the health systems performance, with unfortunate consequences for patients and health professionals (Sheaff 2005). Similar governance failures were revealed in the case study from Pakistan, exploring policy processes of different health sector reforms in Punjab in the 1990s (Tarin et al. 2009). The results suggest failures in health system reforms caused by immature policy processes related to deficiency in analysis prior to the policy formulation and a shortage of supporting background materials, as well as limited partnerships (Tarin et al. 2009). Both these cases demonstrate the importance of good governance practices in the planning and implementation phases of new policies.

Other studies have recognised governance failures related to accountability and responsiveness (Marks, Cave & Hunter 2010; Mitchell, Bossert 2010; Plochg et al. 2006; Victora et al. 2000; Eichler 2001). Marks et al. (2010) studied public health governance in Britain and interviewed key stakeholders, as well as discussing the issue with focus groups who expressed their concerns over limited coordination between organisations, reflected in vague boundaries of responsibilities between individual institutions (Marks, Cave & Hunter 2010). The lack of partnership and coordination caused the accountability mechanisms to be ill defined, making it unclear who was accountable for what, thus negatively affecting the efficiency of the health system. Interviewees also recognised an absence of accountability in monitoring and managing health risks and were concerned about limited responses

to addressing public health hazards such as the obesity epidemic and misuse of alcohol (Marks, Cave & Hunter 2010). This result is consistent with results from Mitchell and Bossert (2010), who investigated health system reforms in six countries in relation to decentralisation within the health system. The aim of the decentralisation was to improve local participation in decision making, empowering local governments and making them more accountable and responsive to local preferences. Their results indicated that, if health systems were to achieve their objectives in a decentralised system, improved mechanisms of accountability were imperative (Mitchell, Bossert 2010). Additional studies support these findings and have shown improvements in health system performance if institutions, health professionals and supervisors are given clear tasks with explicit responsibilities (Victora et al. 2000; Eichler 2001; Plochg et al. 2006).

2.4 Governance and political ideologies

Politics are not commonly part of the definition of governance. Nevertheless, it is difficult to distinguish governance from the concept of politics, a term that is related to decision making enforced by a group of people usually sharing similar ideas and often belonging to the same political party (Walt 1994; Buse, Mays & Walt 2005). These groups are constantly striving for power to attain authority to influence and manipulate societies according to their ideologies; an effort that makes politics a continuous battle between political rivals. Political ideologies of ruling parties, at any given time, therefore have an impact on policy making⁵. Dominant political ideologies, which voters usually elect, play a significant role in designing national health systems and deciding how they are managed and funded, which further affects both average health outcomes and health equity (Navarro et al. 2003). Hence, the political scenery must be kept in mind when evaluating health systems performance, especially when the evaluation is based on variables that might be influenced by dominant political ideologies.

⁵ As an example, the policy of applying taxation and subsidisation to influence the consumption of healthy and unhealthy food or alcohol depends to a great extent on political beliefs and ideologies.

Societies and associated political systems are dynamic and no two systems are exactly the same. However, countries that follow a social democratic philosophy tend to have less inequalities and better health outcomes than countries in which liberal ideologies have been followed (Navarro et al. 2003; Navarro, Shi 2001; Safaei 2006). Some have argued that countries following a neo-liberalistic philosophy favour “individualism” and promote privatisation and minimisation of government interventions, which not only “breeds inequality but needs inequality” and is therefore deemed to be an “anti-equity” ideology (Mooney 2007; Maynard 2007; Wilkinson, Pickett 2009; Navarro 2007).

2.5 Summary

Cross country data reveal a relationship between health outcomes and governance indices, suggesting that improved governance quality enhances positive health outcomes. Indices from the World Bank and the International Country Risk Guide have primarily been used, while no literature was found applying the relatively new Mo Ibrahim Index, appraising governance in Africa. Cross country studies do neither disclose the causality nor enlighten possible pathways through which the association exists. A few case studies have detected accountability and responsiveness to be critical governance qualities for health system performance, suggesting that unclear boundaries between institutions cause delays in acting on public health problems. Other studies have identified lack of cooperation with stakeholders and limited analytical work, prior to policy formulation, to have a negative impact on health systems performance. Limited research exists on how governance quality affects the decision making process within the health sector; how stakeholders are selected to participate in the process (partnership); how accessible information is to stakeholders (transparency); and whether stakeholders have equal opportunities to influence the process (fair participation).

According to the literature review more research is required on exploring and possibly explaining the association between health outcomes and governance by applying specifically the Mo Ibrahim Index of governance and also to study how public health policy making is affected by the quality of governance.

Chapter 3: The conceptual framework of the thesis

The literature suggests that there is a link between governance and health systems and that the relationship is universally apparent. This doctoral thesis was intended to add knowledge to the evidence base regarding the association between national governance and health systems and to explore this association in settings that are different in terms of both the level of income and quality of national governance. The focus of the thesis was to examine possible pathways through which national governance might affect health systems performance and health outcomes. The objective was to explore how governance quality on a national level affects decision making and implementation of decisions within health systems and whether some categories of the UNESCAP's definition for good governance might be more influential than others.

There are several limitations related to this conceptual framework. Firstly, as no universally accepted way exists to measure neither quality of governance nor health systems performance, interpretations of the association between these two complex concepts, as set up in this conceptual framework, might be affected. Secondly, the perception of governance quality differs depending on the context within which health systems operate, which could cause some important governance qualities affecting health systems performance to be overseen. Thirdly, as the focus of the thesis is on national governance, important governance factors within the health sector, having an influence on health systems performance and health outcomes, might be neglected.

The concept of the DrPH program to compile the doctoral thesis from three individual research projects, opened up for opportunities and flexibility to explore the link under different geographical, cultural and economic settings. Furthermore, the existing empirical evidence, indicating a diverse and complicated association between governance and health systems, was a motivation to apply different research methods in the different settings.

The main research questions, which the thesis was intended to provide an answer to, are the following:

1. Is there an association between governance and health system performance in a low and middle income setting when applying the Mo Ibrahim Index as a measure for governance?
2. How does governance affect decision making and implementation of decisions within health systems in an upper-middle and high income setting?

The first research project was intended to address the first question. It was undertaken in the African region of the World Health Organization (AFRO) where 83% of the nations are categorised as low income or lower-middle income countries (World Bank 2010b). The specific research question raised was the following:

- Is there a relationship between governance and health outcomes in low and lower-middle income countries, evaluated through governance indices, child mortality and health equity measured as the ratio between child mortality in the poorest versus the richest wealth quintiles?

The methodology used was a quantitative analysis using publicly available data to investigate the association between governance and health outcomes. In order to measure health outcomes, under-five mortality rate and the ratio between under-five mortality rate in the poorest income quintile versus under-five mortality rate in the wealthiest income quintile were applied. As a governance measure the Mo Ibrahim Index was used, which is specific for the African region (Mo Ibrahim Foundation 2010). The method used was Ordinary Least Square regressions of cross sectional data using the statistical software STATA.

The second and the third research project were intended to give answers to the second main question of the thesis.

The second project of the thesis was a case study conducted in a high income setting, investigating the responsiveness of the Icelandic health authorities in an abrupt economic meltdown. The specific research question raised was the following:

- How does governance affect decision making within a health system going through an abrupt economic meltdown?
 - Did the decision making comply with good governance practices?
 - Were stakeholders involved in the decision making process and who were the key influential actors?
 - Was health equity affected in the decision making process?

The economic crisis gave exceptional opportunity to examine the initial governance response to an advanced health system as it became clear that health care spending had to be reduced; a subject that has rarely been studied. The method used was qualitative analysis, applying the Grounded Theory approach, thus allowing a theory to emerge from the data (Glaser, Strauss 1967). Primary data was collected from interviews with key stakeholders and secondary data was collected from parliamentary documents and Icelandic newspapers.

The third project was a case study carried out in an upper-middle income setting, where health system financing reforms were explored in relation to governance practices. The specific research question raised was the following:

- How does governance affect implementation of decisions with regard to health system financing reforms?
 - Have various requests of different ethnic or socio-economic groups been taken into consideration?
 - Have stakeholders been involved and who have been the key influential actors?

The study was performed in Malaysia, a country which has demonstrated improved health outcomes over the last few decades. This study was a policy analysis applying the Multiple Stream theory (Kingdon 1995) and the Policy Triangle framework (Walt, Gilson 1994) using multiple data sources to investigate content, context, process and actors. Primary data was collected from interviews with key stakeholders and secondary data was collected from various sources.

The conceptual framework of the thesis is illustrated in Table 2.

Table 2: A conceptual framework of the thesis

The main research questions:	<p>1. Is there an association between governance and health systems performance in a low and middle income setting when applying the Mo Ibrahim Index as a measure for governance?</p> <p>2. How does governance affect decision making and implementation of decisions within health systems in an upper-middle and high income setting?</p>		
Research projects:	<p>AFRICA The association between governance and health systems performance – the case of Africa 2006</p>	<p>ICELAND Analysis of the initial response towards the health system in a high income country going through an economic crisis - the case of Iceland 2008 – 2009</p>	<p>MALAYSIA Understanding the impact of governance on health system financing reforms in an upper-middle income setting – the case of Malaysia 1995-2010</p>
Specific research questions:	<p>Is there a relationship between governance and health outcomes in low and lower-middle income countries, evaluated through governance indices, child mortality and health equity measured as the ratio between child mortality in the poorest versus the richest wealth quintiles?</p>	<p>How does governance affect decision making within a health system going through an abrupt economic meltdown:</p> <ul style="list-style-type: none"> • Did the decision making comply with good governance practices? • Were stakeholders involved in the decision making process and who were the key influential actors? • Was health equity affected in the decision making process? 	<p>How does governance affect implementation of decisions with regard to health system financing reforms:</p> <ul style="list-style-type: none"> • Have various requests of different ethnic or socio-economic groups been taken into consideration? • Have stakeholders been involved and who have been the key influential actors?
Research Setting:	Low and lower-middle income setting.	High income setting going through economic meltdown	Upper-middle income setting.
Method:	Quantitative analysis of secondary data - applying Ordinary Least Square regression.	Case study approach with qualitative techniques applying the Grounded Theory.	Policy analysis applying the Multiple Stream and Policy Triangle frameworks.
Data sources:	Child mortality from the World Health Organization and the Demographic Health Surveys. Governance indices from the Mo Ibrahim Foundation.	Parliamentary documents, newspapers and interviews with key stakeholders.	Multiple data sources including publications of the health system, national strategic plans, World Bank, World Health Organization, local surveys, newspapers and a few interviews with key stakeholders.

Chapter 4: Governance and Health Systems I: the association between governance and health systems performance – the case of Africa 2006

4.1 Introduction

In the World Health Report 2000, a health system is discussed in terms of “all the organizations, institutions and resources that are devoted to producing health actions” (World Health Organization 2000, p.xi). Notwithstanding this very broad description of a health system, the operational approaches have tended to be narrow with regard to the analysis of health systems performance, focusing on those aspects of the system that relate directly to the delivery of health care. This is particularly apparent in the analyses of health systems performance in high income countries (Lakhani et al. 2005; Westert et al. 2008; Schoen et al. 2006) and does not appear to have been materially influenced by the development of wider frameworks of analysis (Arah et al. 2006).

In high income countries the lack of distinction between a health system and a health care system may be appropriate. With few exceptions, the OECD countries and the high income non-OECD countries have stable governments and well-developed national infrastructures, including functioning commercial and financial systems, embedded utility grids delivering clean water and energy, systems that facilitate communication and transportation, liveable national housing, a functioning judicial and educational system, etc. In these settings, population health gains are part of a marginal game often based on incremental improvements to an existing health care system that operates within the established context of a high quality national infrastructure (Nolte, McKee 2004; McKee et al. 2009). It is surprising, therefore, that the analysis of health systems performance in low income countries is also based largely on an analysis of systems that deliver care, despite the absence of the wider infrastructure required to support functioning health care systems (Hanson et al. 2008; Armstrong Schellenberg et al. 2008; Kristiansson et al. 2009; Travis et al. 2004).

Some would explain the focus by arguing the inappropriateness of looking at non-health care factors, because an analysis of non-health care factors effectively holds the health sector to ransom, making it accountable for those determinants of health that do not fall under its direct control (Murray, Frenk 2000). The difficulty with this position is the overwhelming body of evidence that demonstrates the critical role of socio-economic, environmental, and other structural determinants of health (Commission on Social Determinants of Health 2008). Furthermore, ignoring broader structural factors assumes that a health system can be “strengthened” without regard to the economic, social, and physical context within which the delivery of health care is supposed to occur. If the health system is not held accountable for these larger determinants, argues Murray and Frenk, there will be no advocate in a country for addressing them (Murray, Frenk 2000); if not us, then who?

For high income countries, the question of the appropriateness of using the health care system as a proxy for a broader health system is moot (McKee et al. 2009). In low income countries with poor infrastructure and often weak political, commercial, financial and regulatory systems, however, the exclusion of non-health care system artefacts from the analysis of health systems performance is based on a much more tenuous foundation. It is thus unlikely that health systems performance in low income countries can be reduced to an analysis of the incremental health gains associated with improvements to the health care system. This point is clearly demonstrated again by ongoing challenges to universal access to health care (Carrin, Xu & Evans 2008; World Health Organization 2008a).

The aim of this study was to investigate the link between governance quality and health outcomes of health systems in a low income setting, with the main research question being:

- Is there a relationship between governance and health outcomes in low and lower-middle income countries, evaluated through governance indices, child mortality and health equity measured as the ratio between child mortality in the poorest versus the richest wealth quintiles?

Other structural factors such as finance and the economy (World Bank 1993b), the education system (Singh-Manoux et al. 2008; McAlister, Baskett 2006) and physical infrastructure (Ako, Nkeng & Takem G.E.E. 2009), have all been shown to be related to health systems performance. Governance, however, has emerged relatively recently as a measurable, structural artefact of countries that could be related to performance in a number of domains (Kaufmann, Kraay & Mastruzzi 2009; Kaufmann, Kraay & Zoido 1999), including health (Reidpath, Allotey 2006); however, a relatively small amount of research has explored this.

4.2 Methods

An ecological analysis⁶ of cross sectional data was performed to look at the association between governance and health systems performance, measured as health outcomes, in the African region of the World Health Organization (AFRO), independent of other known health care and non-health care measures. The analysis was carried out using the most up to date publicly available country level data from the Statistical Information System of the World Health Organization (WHOSIS) (World Health Organization 2008b) and the Mo Ibrahim Foundation (MIF) (Mo Ibrahim Foundation 2010). Data were available from 46 countries that, together with all indicators used in this analysis, are listed in Appendix 1 and Appendix 2.

Additionally, the under-five mortality rate (U5MR) in different socio-economic groups was examined in a few selected countries in the AFRO region, applying data from the Demographic Health Surveys (Demographic and Health Surveys 2008).

4.2.1 Variables

Outcomes: Health outcomes were operationalised in terms of two separate dimensions: health outcomes and health equity. The variable chosen for health outcomes was a country's under-five mortality rate (U5MR); the probability of a child's death before the age of five. Other variables exist that can be applied as a

⁶ Ecological analysis is a statistical analysis commonly using aggregate data to investigate relationships between an outcome (dependent variable) and one or more predictors (independent variables). Ecological analysis does not, however, inform about causal relationship.

proxy for health outcomes such as life expectancy. However, U5MR has been successfully used as a general indicator of population health, as it is sensitive to both structural changes and to rising epidemics that affect the wider population (Blaxter 1981; Reidpath, Allotey 2003; Reidpath et al. 2009; Gwatkin et al. 2007). A selection of other outcome variables might be differently associated with governance and the covariates used in this analysis.

A fair or equitable health system would be one that produces equivalent health outcomes for rich and poor (Braveman, Gruskin 2003; Reidpath, Allotey 2007). Using U5MR as the health outcomes measure, health equity was operationalised as the ratio of the U5MR in the poorest social quintile to that of the U5MR in the wealthiest social quintile (quintile ratio). Data on the quintile ratio of the U5MR were available for 30 of the 46 countries. Combining the two dimensions of health outcomes and equity, a health system that was performing well would have a low U5MR and a U5MR quintile ratio approaching 1.

Governance: At least two relevant sources of governance measures for Africa are available: the World Bank governance index (Kaufmann, Kraay & Mastruzzi 2009) and the Mo Ibrahim Index of African Governance (Mo Ibrahim Foundation 2010). The latter index was selected because of its greater contextual relevance to the AFRO region and as it had never been applied in analysis of this kind. The index was developed in cooperation with the Harvard Kennedy School, but the Mo Ibrahim index aggregates third party (inter alia from the World Bank) and original data to create an index that ranks every country in Africa according to governance quality (Rotberg, Gisselquist 2007; Barry 2010). The index assesses nations against 57 different measures and has been used as a quality indicator for investors in Africa (The Africa Report 2009). As the total Ibrahim index included child mortality, two sub-indicators from the 2006 Ibrahim Index that did not include child mortality in the measure were used to operationalise governance, namely (i) “Rule of Law, Transparency and Corruption” (RLTC); and (ii) “Sustainable Economic Opportunity” (SEO). The RLTC index highlights democracy and human rights in a country. The rating is based on indicators such as public sector corruption, efficiency of the courts and the strength of judicial processes and national security such as domestic armed

conflict. The SEO index measures how governments manage to provide essential goods for their citizens including reliability of electricity supply and computer usage. The index is based on economic management such as the government's budget deficits or surpluses, the quality of public administration, the reliability of financial institutions and the overall business environment (Mo Ibrahim Foundation 2010). The Index as a whole and the sub-scale were recently independently analysed and found to be both reliable (i.e., the scales could be independently reproduced) and valid (i.e. they captured, and reflected the position of the countries on the specific "pillars" of governance) (Saisana, Annoni & Nardo 2009).

Covariates: Four additional factors were included in the analysis, reflecting health care, financing/economy, education and physical infrastructure. For each factor, a number of indicators were used. The indicators' selection was based on what has been identified in the literature (Commission on Social Determinants of Health 2008; Kabir 2008; Anyanwu, Erhijakpor 2007; Kiros, Hogan 2001; Fotso et al. 2007) and the availability of data. Unless otherwise stated, all country data are from 2006 and onwards.

For **health care** (Kabir 2008), there were three different indicators: (i) the percentage of births attended by skilled health personnel; (ii) the percentage of one year olds immunised with three doses of diphtheria, tetanus toxoid and pertussis (DTP3); and (iii) the number of hospital beds per 10,000 population. Although two of these indicators are related to child health, they can nevertheless be used as indicators of the wider health care system. Information from Cape Verde regarding birth attendance by skilled health workers was from 1998.

For the second group, **financing/economy** (Anyanwu, Erhijakpor 2007), two factors were considered, namely (i) per capita total expenditure on health; and (ii) gross national income (GNI) per capita. Both financing indicators were measured in international dollars adjusted for purchasing power parity (ppp int.\$).

The third group, **education** (Kiros, Hogan 2001), was measured in terms of: (i) adult literacy; (ii) the percentage of net primary school male enrolment ratio; and (iii) the percentage of net primary school female enrolment ratio. Net primary school

enrolment ratio is the ratio of the number of children of official school age enrolled in school to the total number of children of official school age in the population.

Education data for Angola, Cameroon, Democratic Republic of Congo and Sierra Leone were from 1991.

The fourth group was **water and sanitation** (Fotso et al. 2007), which was measured in terms of: (i) the percentage of population with sustainable access to improved drinking water sources; and (ii) the percentage of population with sustainable access to improved sanitation. An overview of the indicators within the classified factors, as well as the outcome measures, is given in Table 3.

Table 3: Sources of the variables used in the AFRO analysis.

Variables	Sources	Year
<p><u>Outcomes:</u></p> <ul style="list-style-type: none"> • Under-five mortality rate • Ratio between the poorest and the richest U5MR¹ quintiles 	WHOSIS	2006
<p><u>Health care:</u></p> <ul style="list-style-type: none"> • Births attended by skilled health personnel (%) • One year olds immunised with DTP3² (%) • Number of hospital beds (per 10,000 population) 	WHOSIS	1998 - 2007
<p><u>Finance/Economy:</u></p> <ul style="list-style-type: none"> • Per capita total expenditure on health (ppp int. \$)³ • Gross national income (ppp int.\$) 	WHOSIS	2006
<p><u>Education:</u></p> <ul style="list-style-type: none"> • Net primary school enrolment ratio for females (%) • Net primary school enrolment ratio for males (%) • Adult literacy (%) 	WHOSIS	1991 - 2006
<p><u>Water and Sanitation:</u></p> <ul style="list-style-type: none"> • Population with sustainable access to improved drinking water sources (%) • Population with sustainable access to improved sanitation (%) 	WHOSIS	2006
<p><u>Governance:</u></p> <ul style="list-style-type: none"> • Rule of Law, Transparency and Corruption-index (RLTC) • Sustainable Economic Opportunity-index (SEO) 	Mo Ibrahim Foundation	2006

¹ U5MR: Under-five mortality rate

² DTP3: Three doses of diphtheria, tetanus toxoid and pertussis

³ ppp int.\$: Purchasing Power Parity International Dollars

Gross national income (GNI) was used as a log-transformed variable, since the logarithm of GNI gave a better fit in the regression.

The results of this analysis are restricted to the choice of indicators made here, but a wide variety of indicators could have been selected based on their association to U5MR, giving different results.

4.2.2 Other data

The analytical work of this study is limited to the poorest and the richest wealth quintiles. However, as it has been suggested that the U5MR in sub-Saharan Africa might be highest in the second poorest wealth quintile (World Bank 2007b), I decided to explore additional data providing information concerning U5MR in all wealth quintiles. The Demographic Health Surveys (DHS) were selected for this purpose as the World Health Organization only provided the ratio or the difference between the U5MR in the richest and the poorest wealth quintiles (Demographic and Health Surveys 2008). As the U5MR variation is highest among the poorest countries it was decided to focus the exploration on countries spending less than USD\$100 on health per capita. It was further decided to limit the exploration to countries with available English written reports with data from the year 2000 onwards.

DHS are household surveys that provide data for a wide range of indicators in the areas of population, health and nutrition in low and middle income countries (Demographic and Health Surveys 2008). U5MRs are based on retrospective birth histories from the women's questionnaire. They have, with their present sampling design, been able to recognise changes in U5MRs equal to or bigger than 15% (Korenromp et al. 2004).

4.2.3 Analysis

The statistical program Stata IC 10, from StateCorp USA, was used to analyse the data. Prior to analysis of the association between governance and health outcomes, the inter-relationships between all variables were investigated. This was done in order to identify possible confounding effects. The analysis consisted of fitting six linear models, three to the U5MR and three to the U5MR quintile ratio. The first model measured the strength of the unadjusted bivariate association between the U5MR, governance and the covariates. The second model measured the strength of the adjusted association between the U5MR and the covariates in the absence of the governance measures. This model was included so that a comparison could be

made between it and an extended model including the governance measures. This was done in order to illuminate the strength of the relationship between U5MR and governance. The third model measured the strength of the association between the U5MR and governance in the presence of the covariates. The estimated standardised coefficients (β 's) from the regression analysis are reported, because they simplify the comparison of the relative contribution of the independent variables and covariates. The same modelling was applied to the U5MR quintile ratio, referred to as models four to six. The relationship was considered to be statistically significant if the probability of an association (p) was less than 0.05. Model diagnostics were undertaken to test if the data fit the models.

Missing data was an issue for U5MR and the U5MR quintile-ratio because of the small size of the dataset and the percentage of countries that did not have complete data for all covariates. A sensitivity analysis was conducted to look at the change in the estimates when covariates that reduced the sample size (due to missing data) were removed, and the relationship between U5MR and the U5MR quintile ratio with missing data in the covariates.

As model three to six revealed a statistically positive association between per capita total expenditure on health and the health outcomes, indicating worse outcome with increased expenditure on health, this relationship was explored in more details.

4.3 Results

The results are presented in five sections. The first section reveals how the variables are related to each other. The second section demonstrates how U5MR is correlated to governance and the third section displays the association between the U5MR quintile ratio and the governance indicators. The fourth section discusses the relationship between the outcome variables and per capita health expenditure while the final section presents the U5MR numbers in all wealth quintiles from selected countries in the AFRO region.

4.3.1 Variables and inter-relationships

Descriptive statistics of all variables are presented in Table 4.

Table 4: Descriptive statistics for the U5MR, the U5MR quintile ratio and the predictor variables used in the AFRO analysis.

Health systems performance	n	Mean	SD	Min	Max
U5MR ¹	46	138.5	62.5	13	269
U5MR quintile ratio	30	1.8	0.66	0.9	4
Health care					
Births attended by skilled health personnel %	45	55.5	22.2	6	99
One year olds immunised with DTP3 ² %	46	77.5	18.7	20	99
Number of hospital beds/10,000 population	44	13.7	11.2	1	57
Finance/Economy					
GNI per capita (untransformed) \$	45	2,923	3,995	260	16,620
Health expenditure per capita \$	46	153	200	15	869
Education					
Female school enrolment ratio %	45	69.7	20	36	100
Male school enrolment ratio %	45	74.1	15.8	40	99
Adult literacy %	42	62.2	20.6	23.6	91.8
Physical Infrastructure					
Population with sustainable access to improved drinking water sources %	46	67.7	16.2	42	100
Population with sustainable access to improved sanitation %	45	34.5	19.7	5	94
Governance					
Rule of Law, Transparency and Corruption-index (RLTC)	46	54.2	14.4	24.3	86.1
Sustainable Economic Opportunity-index (SEO)	46	41.8	10.9	23.3	71.4

¹ U5MR: Under-five mortality rate

² DTP3: Three doses of diphtheria, tetanus toxoid and pertussis

Most of the variables span a broad range; the countries' wealth and therefore the ability to spend on health differed vastly. GNI per capita ranged from USD\$260 to USD\$16,620 and per capita health expenditure from USD\$15 to USD\$869. The U5MR ranged from 13 to 269 deaths per 1,000 live births; Seychelles had the lowest U5MR and Sierra Lone the highest. The U5MR quintile ratio ranged from 0.9 (slightly better outcome for the poorest than the wealthiest quintile) up to 4, where the lowest level (least inequality) was found in Chad and the highest value (highest inequality) was found in South Africa.

The inter-relationship between the two selected dimensions of health outcomes (U5MR and the U5MR quintile ratio) was examined. There was no discernible

relationship between the two measures, and the correlation was low ($r=-0.15$; $p=0.42$), suggesting that U5MR and the U5MR quintile ratio are independent measures of health systems performance, at least in the case of the AFRO data. This reinforced the need for separate models of their relationship with governance.

The inter-relationships between the other variables were tested as per Table 5. The strongest relationship was found between the net primary school enrolment ratio among boys and the net primary school enrolment ratio among girls ($r=0.95$). The net primary school male enrolment ratio was therefore excluded from further analysis.

Table 5: A correlation matrix showing the inter-relationships between the governance indicators and the covariates. Numbers above show the correlation coefficient (r) and numbers beneath display the p-value.

		Health care			Finance		Education			Water & sanitation		Governance	
		Birth attended	DTP3 ¹	Hospital beds	Health expendit.	logGNI ²	Female edu.	Male edu.	Literacy	Water	Sanit.	RLTC ³	SEO ⁴
Healthcare	Birth attended	1											
	DTP3	0.35 0.02	1										
	Hospital beds	0.68 .<001	0.33 0.03	1									
Finance	Health expend.	0.64 .<001	0.32 0.03	0.75 .<001	1								
	logGNI	0.68 .<001	0.08 0.62	0.60 .<001	0.77 .<001	1							
Education	Female edu.	0.46 .<001	0.30 0.04	0.54 .<001	0.50 .<001	0.53 .<001	1						
	Male edu.	0.41 0.01	0.14 0.36	0.48 .<001	0.46 .<001	0.51 .<001	0.95 .<001	1					
	Literacy	0.62 .<001	0.28 0.07	0.71 .<001	0.54 .<001	0.59 .<001	0.62 .<001	0.48 .<001	1				
Water & sanitation	Water	0.72 .<001	0.47 .<001	0.60 .<001	0.57 .<001	0.58 .<001	0.38 0.01	0.28 0.06	0.46 .<001	1			
	Sanit.	0.59 0.000	0.23 0.13	0.45 .<001	0.51 .<001	0.54 .<001	0.47 .<001	0.41 0.01	0.51 .<001	0.45 .<001	1		
Governance	RLTC	0.46 .<001	0.41 0.01	0.55 .<001	0.65 .<001	0.58 .<001	0.64 .<001	0.55 .<001	0.38 0.02	0.61 .<001	0.33 0.03	1	
	SEO	0.70 .<001	0.33 0.03	0.71 .<001	0.80 .<001	0.80 .<001	0.67 .<001	0.58 .<001	0.71 .<001	0.64 .<001	0.56 .<001	0.70 .<001	1

¹ DTP3: Three doses of diphtheria, tetanus toxoid and pertussis

² GNI: Gross National Income

³ RLTC: Rule of Law, Transparency and Corruption

⁴ SEO: Sustainable Economic Opportunity

4.3.2 Health outcomes (U5MR)

The next step in the analysis was to apply the dataset to three different models in order to investigate the association between U5MR, governance and the covariates under different settings (see Table 6). Model 1 shows the bivariate relationship between U5MR and the nine covariates, and the two measures of governance using the parameter estimate (β coefficient). Model 2 represents the multivariate model of the linear relationship between U5MR and the covariates in the absence of the measures of governance. Due to missing data in the covariates, only 37 of the 46 countries that had U5MR data were available for this analysis. The model accounted for around 59% of the available variance (Adjusted $R^2=0.59$). After adjustment, only two of the covariates retained a significant association with U5MR: sustainable access to safe drinking water ($\beta=-0.41$, $p=0.03$) and the percentage of female children enrolled in school ($\beta=-0.57$, $p<0.001$).

Model 3 replicated Model 2, with the addition of the two governance measures ($n=37$). The model accounted for 76% of the available variance (Adjusted $R^2=0.76$), and identified a significant association between one of the governance indicators (sustainable economic opportunities; $\beta=-0.90$, $p<0.001$) and U5MR, after adjustment for the other governance indicator (rule of law, transparency and corruption; $\beta=-0.12$, $p=0.42$) and the other covariates. The governance indicator for sustainable economic opportunities (SEO) had the largest standardised coefficient of any of the variables included in the analysis. Female enrolments remained significant ($\beta=-0.32$, $p=0.02$), while sustainable access to safe drinking water was no longer significant in the fully adjusted model ($\beta=-0.10$, $p=0.52$). GNI per capita, however, became significant in the fully adjusted model ($\beta=0.40$, $p=0.04$) and showed, counter intuitively, that increases in GNI per capita were associated with increases in U5MR. This kind of instability in parameters is sometimes seen when there are large numbers of covariates in relation to the sample size, but could also indicate multicollinearity between the independent variables. Potential multicollinearity was tested for with a post-regression analysis in which each independent variable was regressed on all of the other independent variables, indicating minor multicollinearity. Leverage

analysis⁷, following the regression of Model 3, identified eight countries with the largest influence on the regression's outcome. These were, listed from the largest to the lowest impact: South Africa, Sao Tome and Principe, Angola, Equatorial Guinea, Democratic Republic of Congo (DRC), Gabon, Algeria and Chad. No action was taken to exclude any countries, as the sample size was already small and the countries with the greatest influences were heterogeneous in most indicators. However, the instability raised concerns about the precision of the estimated relationship between governance and U5MR.

Table 6: Three models estimating the relationship between U5MR, governance and nine covariates.

U5MR						
	Model 1 (42≤n≤46)		Model 2 (n=37)		Model 3 (n=37)	
	β	p	β	p	β	p
Health care						
Births attended by skilled health personnel (%)	-.56	.<001	-.27	.20	-.31	.06
One year olds immunised with DTP3 (%)	-.44	.<001	.00	.98	.01	.93
Number of hospital beds (per 10,000 populations)	-.63	.<001	.03	.90	.02	.90
Finance						
LogGNI	-.47	.<001	.09	.68	.40	.04
Per capita total expenditure on health (\$)	-.50	.<001	.03	.87	.18	.27
Education						
Female net primary school enrolment ratio (%)	-.64	.<001	-.57	.<001	-.32	.02
Adult Literacy %	-.55	.<001	.03	.86	.20	.19
Physical Infrastructure						
Population with sustainable access to improved drinking water sources (%)	-.67	.<001	-.41	.03	-.10	.52
Population with sustainable access to improved sanitation (%)	-.35	.02	.10	.47	.15	.20
Governance						
Rule of Law, Transparency and Corruption-index (RLTC)	-.70	.<001			-.12	.42
Sustainable Economic Opportunity-index (SEO)	-.72	.<001			-.90	.<001
Adjusted R-squared			.59		.76	

⁷ Leverage analysis detects the leverage of each observation on the regression outcome.

4.3.3 Health equity (U5MR quintile ratio)

The pattern of results was distinctly different for the models of the U5MR quintile ratio data (see Table 7). Model 4 shows the bivariate relationship between the U5MR equity ratio, the two measures of governance and the nine covariates. No indicators of health care, education or physical infrastructure were significantly correlated with the U5MR quintile ratio data ($p < 0.05$). SEO was significantly correlated with the U5MR equity ratio ($\beta = 0.42$, $p = 0.02$), as was health expenditure ($\beta = 0.53$, $p = 0. < 001$). A number of the indicators “approached significance” ($p < 0.1$), including births attended (health care) ($\beta = 0.32$, $p = 0.09$), GNI per capita (finance) ($\beta = 0.35$, $p = 0.06$), sanitation (physical infrastructure) ($\beta = 0.33$, $p = 0.08$), and RLTC (governance) ($\beta = 0.32$, $p = 0.09$).

Model 5 represents the multivariate model of the linear relationship between the U5MR quintile ratio and the covariates in the absence of the measures of governance ($n = 25$), and it accounted for 30% of the variance (Adjusted $R^2 = 0.30$). Only two of the covariates were, independently, significantly associated with the U5MR quintile ratio. The first of these was the availability of hospital beds per 10,000 population ($\beta = -0.73$, $p = 0.04$), as the number of hospital beds per 10,000 increased, so there was an associated improvement in health equity. The second independently significant covariate associated with the U5MR equity ratio was per capita total expenditure on health ($\beta = 0.88$, $p = 0.01$); increases in per capita health spending were associated with deteriorating equity.

Model 6 replicated Model 5, with the addition of the two governance measures ($n = 25$). The addition of the governance indicators results in a poorer fit to the data (Adjusted $R^2 = 0.21$), and neither SEO ($\beta = 0.19$, $p = 0.71$) nor RLTC ($\beta = 0.1$, $p = 0.77$) were significantly associated with the U5MR quintile ratio. In the fully adjusted model, the only covariate that remained significantly associated with the U5MR quintile ratio was per capita total expenditure on health ($\beta = 0.85$, $p = 0.02$).

Table 7: Three models estimating the relationship between the U5MR quintile ratio, governance and nine covariates.

U5MR Quintile Ratio						
	Model 4 (28≤n≤30)		Model 5 (n=25)		Model 6 (n=25)	
	β	p	β	p	β	p
Health care						
Births attended by skilled health personnel (%)	.32	.09	.31	.30	.32	.34
One year olds immunised with DTP3 (%)	.24	.19	.15	.55	.10	.72
Number of hospital beds (per 10,000 populations)	.07	.73	-.73	.04	-.73	.06
Finance						
LogGNI	.35	.06	-.04	.92	-.14	.77
Per capita total expenditure on health (\$)	.53	<.001	.88	.01	.85	.02
Education						
Female net primary school enrolment ratio (%)	.25	.20	-.18	.44	-.24	.40
Adult Literacy %	.23	.24	.42	.18	.36	.35
Physical Infrastructure						
Population with sustainable access to improved drinking water sources (%)	.15	.43	-.42	.21	-.47	.25
Population with sustainable access to improved sanitation (%)	.33	.08	.27	.23	.27	.25
Governance						
Rule of Law, Transparency and Corruption-index (RLTC)	.32	.09			.10	.77
Sustainable Economic Opportunity-index (SEO)	.42	.02			.19	.71
Adjusted R-squared			.30		.21	

4.3.4 Expenditure on health in relation to the health outcomes

There is a positive association between life expectancy and expenditures on health although the variance is high, especially among countries with the lowest health spending (Poullier et al. 2002). Counter intuitively, this study showed a positive relationship between spending on health and the U5MR and the U5MR quintile ratio in multivariate regressions. These results stimulated further exploration of the per capita health expenditures in relation to the U5MR and the U5MR quintile ratio as presented in the next two sections.

(i) In relation to U5MR quintile ratio

Per capita total expenditure was positively related to the U5MR quintile ratio in all models and was statistically significant in all cases. However, the variance was high

with leverage analysis indicating a substantial impact from South Africa, as revealed in the two way scatter graph shown in Figure 4.

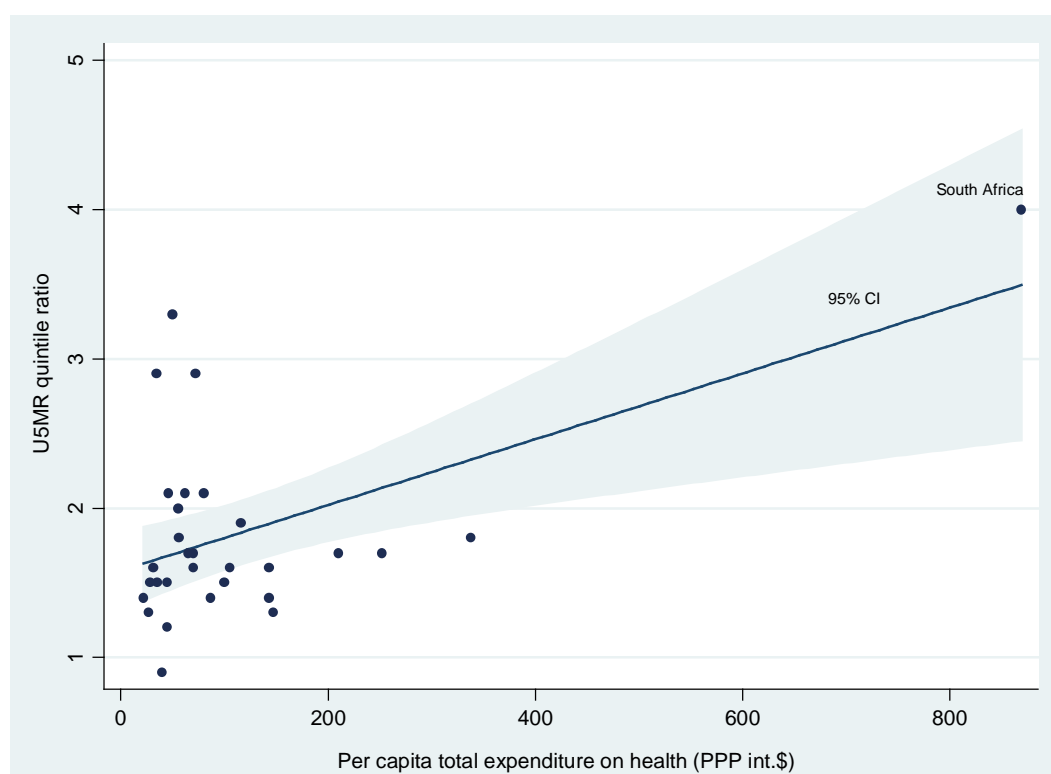


Figure 4: A two-way scatter graph of the U5MR quintile ratio and per capita total expenditure on health.

When South Africa was excluded in a bivariate regression between the U5MR quintile ratio and per capita total expenditure on health the association turned from positive to negative, however, was not statistically significant ($\beta=-0.06$, $p=0.75$). Model 6 was also run again, without South Africa, causing the association between the U5MR quintile ratio and health expenditure to become non-significant but still positive ($\beta=0.55$, $p=0.32$). The small size of the sample and the high variation makes interpretation of these results difficult.

(ii) In relation to U5MR

Per capita total expenditure on health was either positively or negatively associated with the U5MR, depending on whether it was run in a single regression or multivariate regressions. The small sample size, especially in relation to the number of covariates, might cause instability in the results, although negative confounding is

also likely to have caused the sign to change. Health expenditures and the SEO index are positively related ($r=0.8$, $p<0.001$); at the same time, the SEO index has a stronger negative association with the U5MR than per capita total expenditure does. This could cause the SEO index to act as a negative confounding factor, which changes the expenditure variable from negative to positive when run in a multivariate regression (Mehio-Sibai et al. 2005).

A two-way scatter graph in Figure 5 illustrates the negative bivariate association between the U5MR and per capita total expenditure on health in the AFRO area.

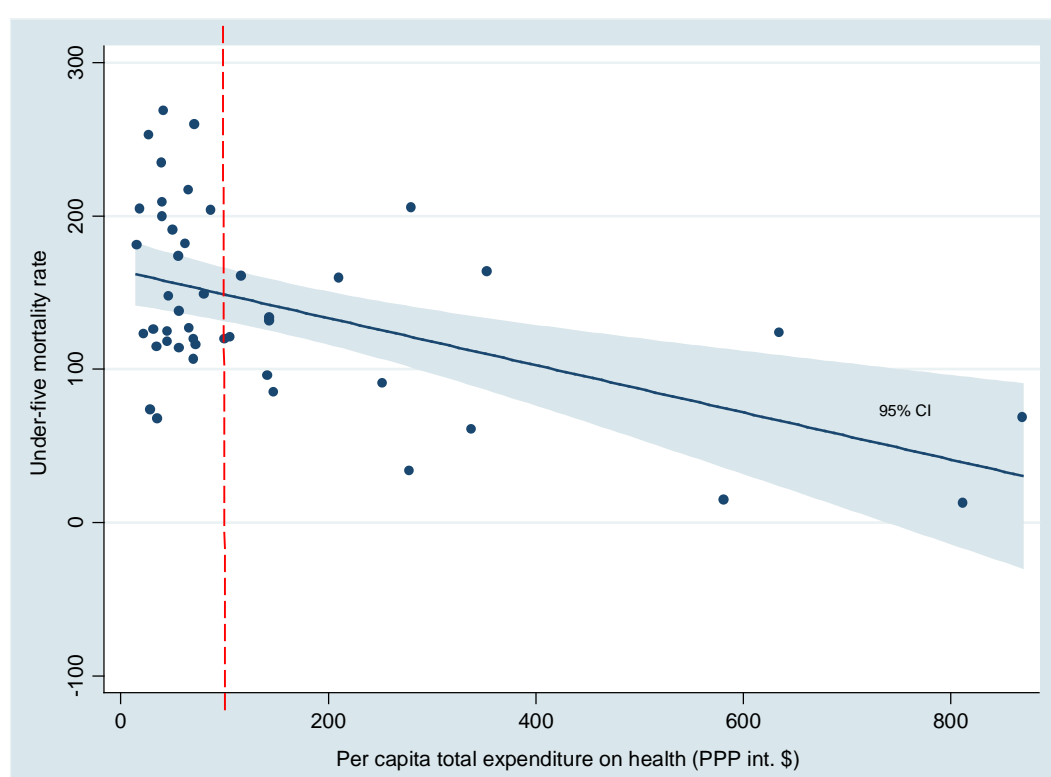


Figure 5: Two-way scatter graph for the U5MR and per capita total expenditure on health.

The bivariate association is statistically significant ($r=-0.2$, $p<0.001$), but the variance is high (Adjusted $R^2=.23$). For countries that spend below USD\$100 on health per capita, the probability of dying before the age of five varies from 68 deaths per 1,000 live births to 269 deaths. This is a substantial variation, given the low level of health expenditure. The negative association does not remain for the countries that spend less than USD\$100 on health, as shown in Figure 6.

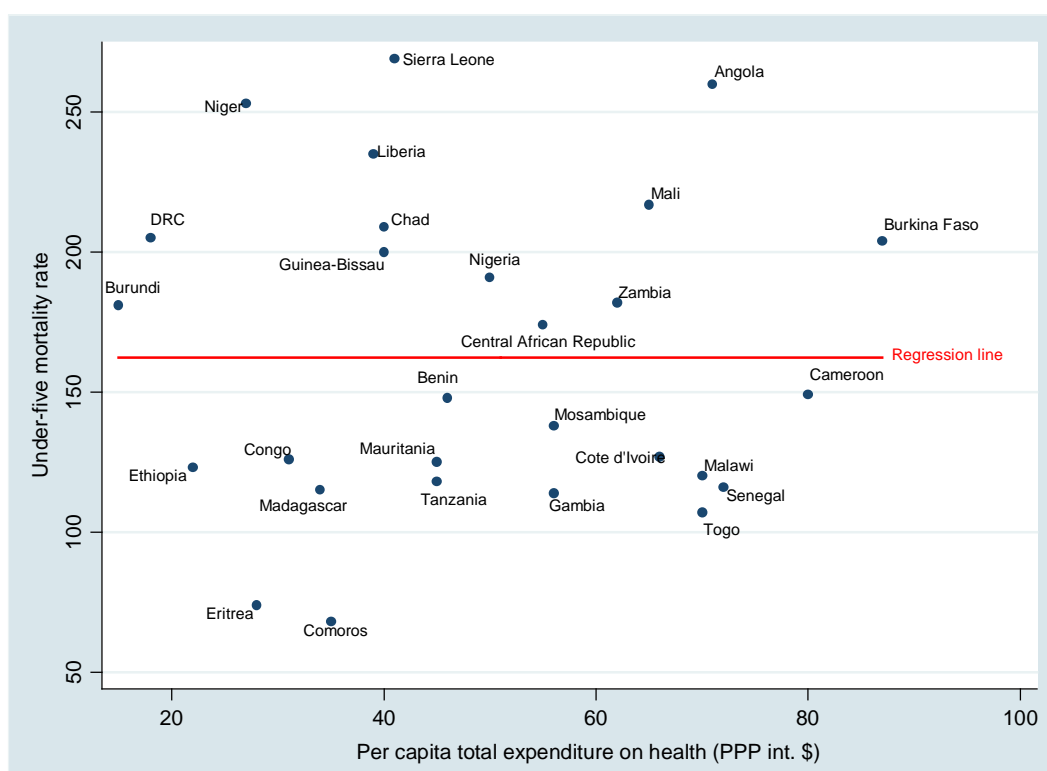


Figure 6: A two-way scatter graph for the U5MR and per capita total expenditure on health in countries that spend less than USD\$100 on health per capita. Source: WHOSIS

Studies on the association between health expenditures and health outcomes have been controversial; some have shown no association between child mortality and health expenditure, especially in the poorer countries (Musgrove 1996). The findings range from no impact to limited impact or impacts in the case of specific interventions (Dollar, Burnside 1998; Filmer, Pritchett 1999; Anyanwu, Erhijakpor 2007; Abed, Gupta 2002). The results shown in Figure 6 raise a number of questions. Why does Eritrea have a much lower U5MR than Niger, even though they spend similar amounts on health per capita? There is no simple explanation and this finding needs to be investigated further.

4.3.5 U5MR in all wealth quintiles

Under-five mortality rate was explored in all wealth quintiles in countries spending less than USD\$100 on health per capita (Figure 6). Data from the Demographic Health Surveys (DHS) was used for this purpose, as the World Health Organization only provided information on U5MR in the highest and the lowest wealth quintiles. Data was available for five countries: Eritrea, Ethiopia, Malawi, Nigeria and

Tanzania. The World Health Organization's statistics from 2006 presented in Figure 6 differ from the DHS numbers, which are from 2002 to 2005. The difference is up to 20% for these five countries with the biggest difference in numbers from Eritrea; the WHO presents 74 deaths per 1,000 live births while the comparable number is 93 in the DHS report.

The U5MR varies depending on wealth quintiles in all countries with the trend of lower U5MR with increased wealth; however, the lowest wealth quintile does not always have the highest U5MR number as might be expected. The highest U5MR is registered in the second lowest wealth quintile in four out of the five countries as illustrated in Figure 7.

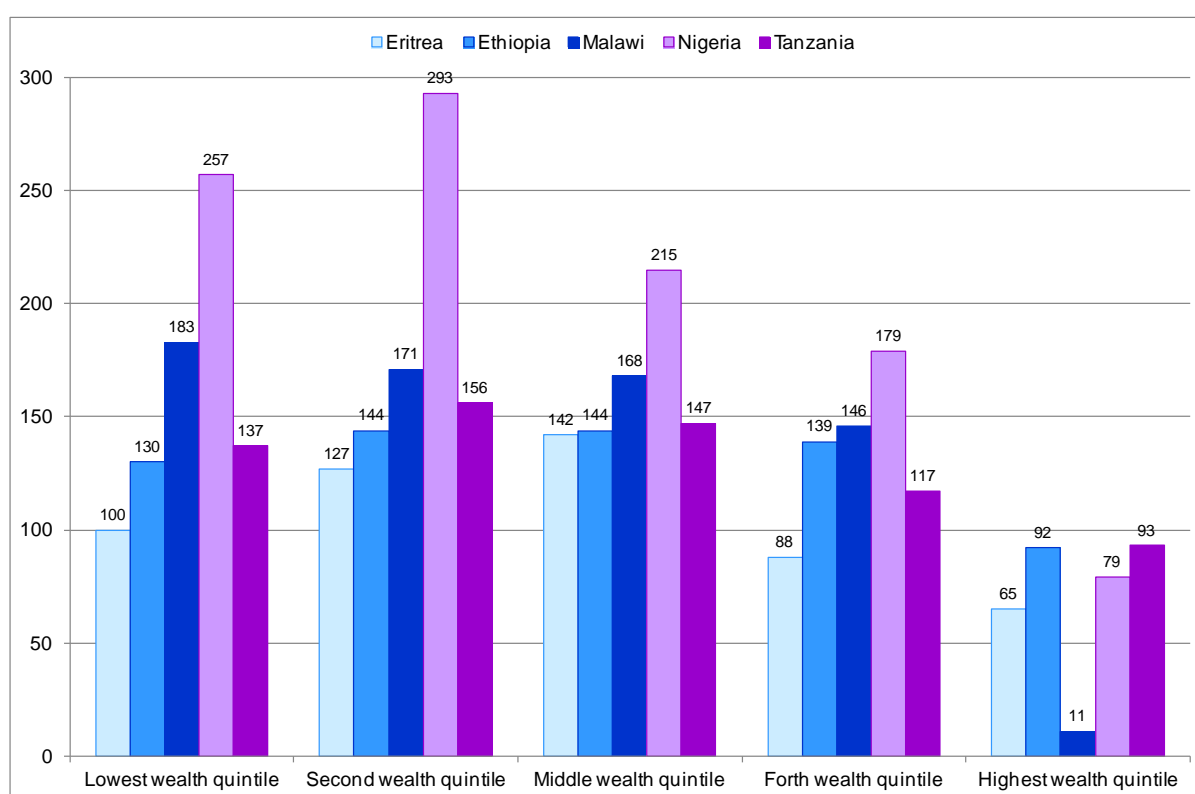


Figure 7: The U5MR in Eritrea, Ethiopia, Malawi, Nigeria and Tanzania in all wealth quintiles. Source: DHS.

Data in Figure 7 suggests that merely looking at the ratio between the lowest and the highest wealth quintiles in the AFRO region might be too restrictive. Data from the World Bank indicates that the U5MR in sub-Saharan Africa is on average higher in the second wealth quintile than in the lowest (World Bank 2007b). The second

wealth quintile had a higher U5MR in 13 countries out of 29 in sub-Saharan Africa in the World Bank's report "Socio-Economic Differences in Health, Nutrition, and Population Within Developing Countries" (Gwatkin et al. 2007). In nine countries out of 29, the U5MR was higher in the third wealth quintile than in the poorest.

4.4 Discussion

The discussion starts with quantitative analysis related to the U5MR, then the U5MR quintile ratio and finishes with a short discussion of the U5MR in different wealth quintiles.

The primary interest in the quantitative analysis regarded the association between health systems performance (health outcomes and health equity) and the non-health care factor, governance. It is notable that there was no apparent relationship between the health outcomes dimension of health systems performance (U5MR) and the health equity dimension (U5MR quintile ratio). This is important for two reasons. Firstly, and purely from an analytic perspective, the lack of a relationship reinforces the need to independently model the two dimensions of health systems performance. Secondly, and with a policy perspective in mind, the independence of the dimensions reinforces the need to take them both seriously and not assume that addressing one will necessarily address the other.

The quantitative analysis unveiled a statistically significant bivariate association between U5MR and governance, measured through two separate governance indices, the "sustainable economic opportunity" (SEO index) and the "rule of law and transparency" (RLTC index). After controlling for nine covariates representing health care, finance/economy, education, and physical infrastructure, only the SEO index remained significantly related to U5MR. The relationship was negative, indicating that the higher the SEO index (improved governance), the lower the U5MR. Although a causal relationship cannot be established in an ecological, cross sectional analysis of this kind, the results leave open the possibility that good governance helps to create an environment in which a health system can perform well and certainly invites further research to examine the issue of causation. These results are

restricted to the dataset chosen and the method applied, but are consistent with other studies and reports that have suggested that good governance is a prerequisite for improved health outcomes (Kaufmann, Kraay & Zoido 1999; Gupta, Davoodi & Tiongson 2000; Wagstaff, Claeson 2004; Rajkumar, Swaroop 2008; Abed, Gupta 2002; Lazarova, Mosca 2008; Reidpath, Allotey 2006; Global Water Intelligence 2007; Transparency International 2008).

Child mortality and life expectancy are outcomes commonly used as indicators of health systems performance. However, average numbers do not inform about the distribution of the performance. The U5MR ratio between the poorest and the richest wealth quintiles was employed to evaluate the association between governance and the distribution of health system performance. Notwithstanding a significant bivariate association between governance (SEO index) and health equity, there was no significant association in the multivariate analysis. Given the apparent independence of health outcomes and health equity, this may not be entirely surprising.

Nevertheless, it raises important questions about which non-health care factors should be future targets for investigation, and no clear answer presents itself. The unanticipated relationship between finance and health equity certainly warrants further consideration. Earlier findings indicate that increased spending on health could reduce the U5MR if governance scores are above certain “minimum levels” (Wagstaff, Claeson 2004). More research looking at causal relationships, especially in countries spending little on health per capita, would help to improve our understanding of the association between under-five mortality rate and health system financing.

The results from the quantitative analysis should be regarded as preliminary, due to limitations in the amount, the quality and the type of data used. The Ibrahim Index has not been used much in studies on health system performance and use of other governance indices might have given different results. The number of countries contributing data was small relative to the number of variables included in the analyses, both for the analysis of equity and for the analysis of average health outcomes. The weakness in the quality of the data is best illustrated by the difference explored in databases from different international organisations. The

difference between information provided on under-five mortality rate in Nigeria for 2008 was 23% between the World Health Organization database and the World Bank database; the World Health Organization presented 186 deaths per 1,000 live births while the World Bank presented 143 deaths per 1,000 live births (World Health Organization 2010; World Bank 2010a). This difference needs clarification, but it has been pointed out that the sum of deaths claimed by data supplied by the World Health Organization exceeds the total number of deaths in the world (Murray, Lopez & Wibulpolprasert 2004). Limitations in the interpretation of the results lie also in the type of data used in this research. Longitudinal data, allowing for the inclusion of time-lag, would strengthen the analysis considerably and reduce the danger of the ecological fallacy. Changes in child mortality rates are a consequence of several actions taken over a period of time and looking at governance and under-five mortality rate at one single point in time is limiting. Nonetheless, governance and other non-health care factors appear to be significantly associated with health outcomes. If the association is causal, and it might be anticipated that it is (Commission on Social Determinants of Health 2008), then it would be unwise to ignore that possibility because of data quality issues.

The observation of U5MRs in all wealth quintiles disclosed an unexpected U5MR profile, showing that the highest U5MR rate was not associated with the lowest income quintile. There might be several reasons for this distortion, one being the influence of a pro-poor approach to reduce health inequities within health systems (Gwatkin, Bhuiya & Victora 2004; Kruk et al. 2010). Studies that focus only on the poorest wealth quintiles compared to the richest wealth quintiles run the risk of missing out essential information, at least in the AFRO region. According to the World Bank, the second wealth quintile has a higher under-five mortality rate than the lowest wealth quintile in 45% of countries in sub-Saharan Africa, which indicates that the higher under-five mortality rate of the second poorest quintile is an issue, not only restricted to the five countries explored in this study (Gwatkin et al. 2007).

4.5 Conclusion

This study suggests a strong association between health outcomes, measured as under-five mortality rate and governance, calculated through Ibrahim indices, in the African context. An association was also detected between governance and health equity, measured as the under-five mortality ratio between the poorest and the richest wealth quintiles, in a bivariate regression which did not remain after controlling for confounding factors. However, interpretations are limited because of the small dataset and limited data quality. The inconsistency in databases from supposedly reliable international organisations like the World Health Organization and the World Bank must be clarified and synchronised to improve the reliability of future research. Nevertheless, this research indicates that there are a range of largely under-utilised indicators such as governance that could play an important role when planning future interventions. This complies with recent data from large scale studies such as the Commission on Social Determinants of Health, which provides important and alternative ways of conceptualising the factors that should be within the purview of the health sector. Analyses such as that presented here provide an argument for inter-sectoral approaches to population health improvement, notwithstanding weaknesses in the data. It also points out that it might be limiting to restrict equity research to the ratio between the richest and the poorest wealth quintiles. This needs to be addressed in future research on equity, in health as well as in policy making, in relation to the pro-poor approach in reducing inequity in health. The assessment of health care systems alone as a proxy for health systems performance is restrictive, both in terms of making progress and assessing improvements, especially in countries where broader determinants such as governance and infrastructure remain inadequate.

Chapter 5: Governance and Health Systems II: analysis of the initial response towards the health system in a high income country going through an economic crisis - the case of Iceland 2008 - 2009

5.1 Introduction

The recent global economic crisis created significant challenges for governments, including those with stable economies and political structures, as economic contractions have the potential to affect societies' capability to provide social services. However, earlier economic crises have affected countries differently, depending on their economic strength, political stability and social security systems prior to the crises, amongst other factors (Stuckler et al. 2009; Parry, Humphreys 2009). A decrease in mortality rate has been reported in countries with strong economies during economic downturns, which has been related to less smoking, reduced alcohol intake, increased physical activity, reduced height-adjusted weight and fewer road traffic accidents (Granados, Roux 2009; Gerdtham, Ruhm 2006; Khang, Lynch & Kaplan 2005). On the other hand, research from middle and low income countries has shown a rise in mortality along with some health-specific deaths or morbidities related to economic crises (Hopkins 2006; Cutler et al. 2002; Waters, Saadah & Pradhan 2003; Paxson, Schady 2005; Falagas et al. 2009). The main reason has been diminished governmental ability to provide social services and, hence, the reduced ability to protect national welfare, especially among the poor, who are most vulnerable during times of crises (Cutler et al. 2002; Waters, Saadah & Pradhan 2003). In Peru, for example, infant mortality rose during the crisis in the late 1980s. The reason suggested was a collapse in public and private expenditure on health (Paxson, Schady 2005).

In the case of a political crisis on top of an economic crisis, such as in Indonesia during the East-Asian crisis in 1997, negative health impacts increased (Hopkins 2006). A substantial increase in distress indicators at all ages and among both genders was reported in Indonesia and they took longer to recover than the

economy (Friedman, Thomas 2008). During Indonesian crisis, household expenditure on health decreased and so did health service utilisation. This stands in stark contrast to Thailand, where health service utilisation increased during the East-Asian crisis, corresponding with expansion in their social security and health system (Waters, Saadah & Pradhan 2003).

When societies experience severe shocks, an increase in psychological stress among the population can be expected, with unfortunate consequences for population health. This was the case in Russia after the collapse of the Soviet Union and the subsequent abrupt and severe economic transition in 1992-94. Life expectancy dropped among both men and women in Russia during this time, which has been related to psychological stress and socio-economic shock (Shkolnikov et al. 1998).

In order to mitigate turmoil such as an economic crisis, a multi-sectoral approach and cooperation is needed, in which both social and economic determinants of health are addressed (World Health Organization 2009a). Nevertheless, it is governments' responsibility, as one of the principle actors in protecting nations' health and well-being, to lead the initial response to such crises and to provide a strong stewardship⁸ for policy making and reforms (United Nations 1993; Sen 1999; World Health Organization 2000). In the current economic crisis, the World Health Organization encouraged governments to consolidate their leadership and to monitor early warning signs, related to the economic crisis, to help them to respond appropriately with the aim of mitigating the negative impacts of the crisis (World Health Organization 2009a). Member states were urged to protect health spending and to focus on the poor, as well as taking longer-term perspectives in order to make health systems more resilient in the future.

⁸ Stewardship has been defined in different ways, although most of the definitions imply that it is greatly related to governance, whereby governments have the sole responsibility for population welfare, lead public health policy making, set priorities and safeguard patients' rights (Saltman, Ferroussier-Davis 2000).

Post hoc analyses of health outcomes following economic crises have been undertaken, but there has been a lack of systematic inquiry into how authorities at national level respond during times of crises, how well these responses comply with “good” governance and, ultimately, how these responses influence and affect the health systems. The recent economic meltdown (an economic, currency and political crisis) that hit Iceland in late 2008 provided an ideal opportunity for this analysis to be undertaken, using a case study research approach. The aim of this study was to describe and analyse the response of the Icelandic government and health system authorities⁹ towards the health system in the first months of the economic crisis in 2008 and how well the decision making process complied with good governance practices based on the UNESCAP definition of good governance (Sheng 2011). The main research questions were:

- How does governance affect decision making within a health system going through an abrupt economic meltdown?
 - Did the decision making comply with good governance practices?
 - Were stakeholders involved in the decision making process and who were the key influential actors?
 - Was health equity affected in the decision making process?

The approach to the case study research was predominantly qualitative, using parliamentary documents, news and health discussions in two of the biggest newspapers in Iceland, and interviewing key stakeholders in the health sector.

5.2 Background to Iceland

Iceland is an island in the North Atlantic Ocean. It is 103,000 square kilometres and has a population of 317,000 inhabitants (Statistics Iceland 2009a). More than half of the population lives in the capital, Reykjavik, and its surrounding areas. The rest of the population is distributed around the country, mainly along the coastline.

⁹ Health system authorities are the Minister of Health, the Ministry of Health and its institutions.

Iceland is a democratic republic with a parliament whose members are elected in general elections, every four years or less. Most commonly, a parliamentary majority forms the government under the leadership of a prime minister. Iceland has a president, who is elected by direct popular vote for a term of four years, with no term limit. Legislative power lies with the parliament and the president, who has to sign off all new laws passed by the parliament before they become valid. Should the president refuse consent to new legislation, the parliament can either withdraw the bill or settle the issue by referendum. There are four major political parties: The Independence Party and the Progressive Party, both conservative parties that have ruled for the past two decades, and the Social Democratic Alliance and the Left-Green Movement, both liberal democratic parties that are currently in power.

5.2.1 Governance in Iceland

Iceland has been given high scores when evaluated in terms of governance quality. According to the World Bank, Iceland commonly scores above 90% of the maximum score given, as illustrated in Table 8 (World Bank 2010c). However, scores for “Regulatory quality” have declined after the economic crisis which commenced in 2008.

Table 8: The World Bank's governance indicators for Iceland. Source: World Bank (2010c)

Year	Voice and accountability	Political stability	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
1996	92.3	88.5	89.3	57.1	90.0	92.7
1998	94.7	97.1	98.1	88.8	94.3	94.2
2000	95.7	98.6	97.6	93.2	98.6	99.5
2002	97.6	98.6	98.1	91.7	100	97.6
2003	98.6	99.0	99.5	94.6	100	98.1
2004	96.2	97.1	98.5	95.1	100	98.1
2005	97.1	99.0	99.0	96.6	100	100
2006	96.6	100	97.6	94.1	99.0	98.5
2007	96.2	100	95.2	92.2	98.1	98.6
2008	96.2	93.3	92.8	81.6	96.2	98.1
2009	96.2	92.0	93.3	79.0	94.8	97.1
Green means: 90th to 100th percentile of maximum score						
Light green means: 75th to 90th percentile of maximum score						
Yellow means: 50th to 75th percentile of maximum score						

Despite high scores in “Control of corruption,” many Icelanders perceive a substantial level of dishonesty among politicians and a jumble of interests with the business sector (Gylfason 2009; Visir 2009b; Eyjan 2009). Although corruption has traditionally been related to the poorer countries of the world, it has been pointed out that several rich countries also have problems with ethics and corruption, which might be difficult to capture in governance indices; for example, the magnitude of cliquishness in the appointments of individuals to high public positions and committees that lead policy making (Kaufmann 2004; Gylfason 1993). Icelandic politics have functioned as a “buddy-system” for decades and one of the consequences is that people with the best qualifications are not always appointed to positions where their knowledge and experience are needed. Instead, political allies and even personal friends are selected, people who are not necessarily familiar with the subject in question. The risk of inequitable policy making increases under such circumstances as those with authority are inspired by policy “elites” or strong interest groups, commonly working in the ministers’ closest circles (Gudjonsson et al. 2005).

5.2.2 The economic crisis in Iceland

The Icelandic banking sector was fully privatised in 2003 after all the state owned banks were sold that same year. Although the banks were put out to tender, the whole process received extensive criticism, indicating an inappropriate connection between the politicians and the investors (Arnarson 2009). The global economy was favourable for expansion after the privatisation and soon the Icelandic banking sector became an active player in the global financial market. The Icelandic banks were new on the global market, with limited experience and with management that showed a willingness to take risks, driven by financial incentives. Compared to local wages, the bankers’ remuneration was extremely high, further increasing the gap between the rich and the poor.

The danger of bankruptcy was real, as the government neglected to strengthen the institutions intended to monitor the newly privatised banks. When the recent global financial crisis commenced, the Icelandic banks turned out to be vulnerable and, in 2008, the Icelandic government had to nationalise the banks again, then 10 times

the Icelandic gross domestic product and heavily indebted (Danielsson 2009; Arnarson 2009; Evans-Pritchard 2006; BBC 2009).

5.3 The Icelandic health system

The Icelandic health system is a comprehensive health system providing universal coverage. It is centrally governed and, to a great extent, financed through general taxation (Halldorsson 2003; Vilhjalmsson 2007). The health system is regulated by the Health Services Act, the Health Insurance Act and other related acts, which are intended to ensure the population has a right to the best possible health services at any given time (Icelandic Parliament 2007b; Icelandic Parliament 2008a). The health system is primarily publicly owned, although some institutions such as rehabilitation services and institutions for the elderly are outsourced to the private sector. Certain organisations working in prevention and health promotion are also privately owned, including the Cancer Society and the Icelandic Heart Association.

Primary health care services are generally the entry point for patients. There is, however, no referral system between doctors in Iceland, and patients can seek health services directly from specialists if they prefer. A referral system exists for certain other types of treatments such as physiotherapy. An overview of the Icelandic health system is shown in Figure 8.

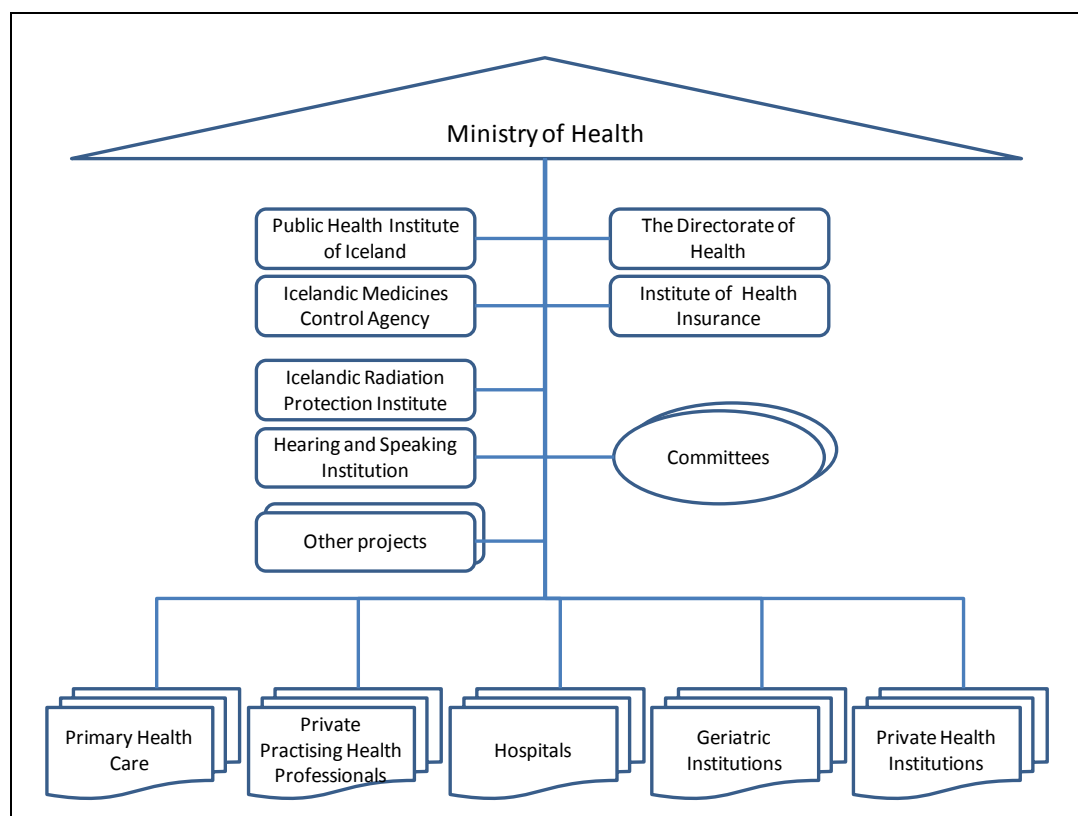


Figure 8: An overview of the Icelandic health system.

Health professionals working in primary health care and in hospitals are civil servants, as are the staff working in public geriatric institutions. Allied health professionals are privately hired, but provide health care services that are subsidised through the social security system.

The Icelandic health system is regarded as advanced and easily accessible, and people are generally happy with it (Thorarinsson et al. 2000). There are thirty different health care institutions nationwide, split up between seven regions as shown in Figure 9 (Icelandic Parliament 2007b; Ministry of Health 2007b). In the figure, the health regions are separated by colours and include population numbers as well. They differ not only in geographical and population sizes, but also in institutional collaboration within each region. The aim is to unite the institutions in the regions, or at least persuade them to cooperate more than they have done in the past.

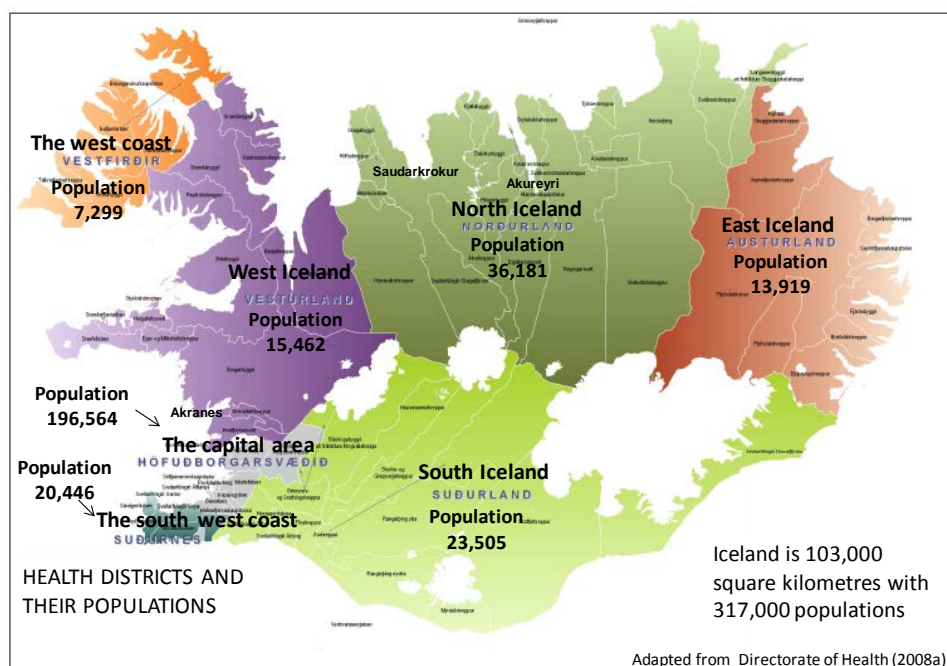


Figure 9: Health regions in Iceland and their population size. Source: Directorate of Health 2008a.

In 2008, the total expenditure on health was 137.5 billion Icelandic Kronur (USD\$ 1.1 billion)¹⁰, which corresponds to 9.4% of the country's GDP. The government covered 83% of the cost, while the rest was paid by domestic households (17%) as out-of-pocket payments (Statistics Iceland 2009b). These numbers are illustrated in Figure 10.

¹⁰ The exchange rate used in this study is 1 USD\$ to 125 ISK. The rate has been unstable during the economic crisis.

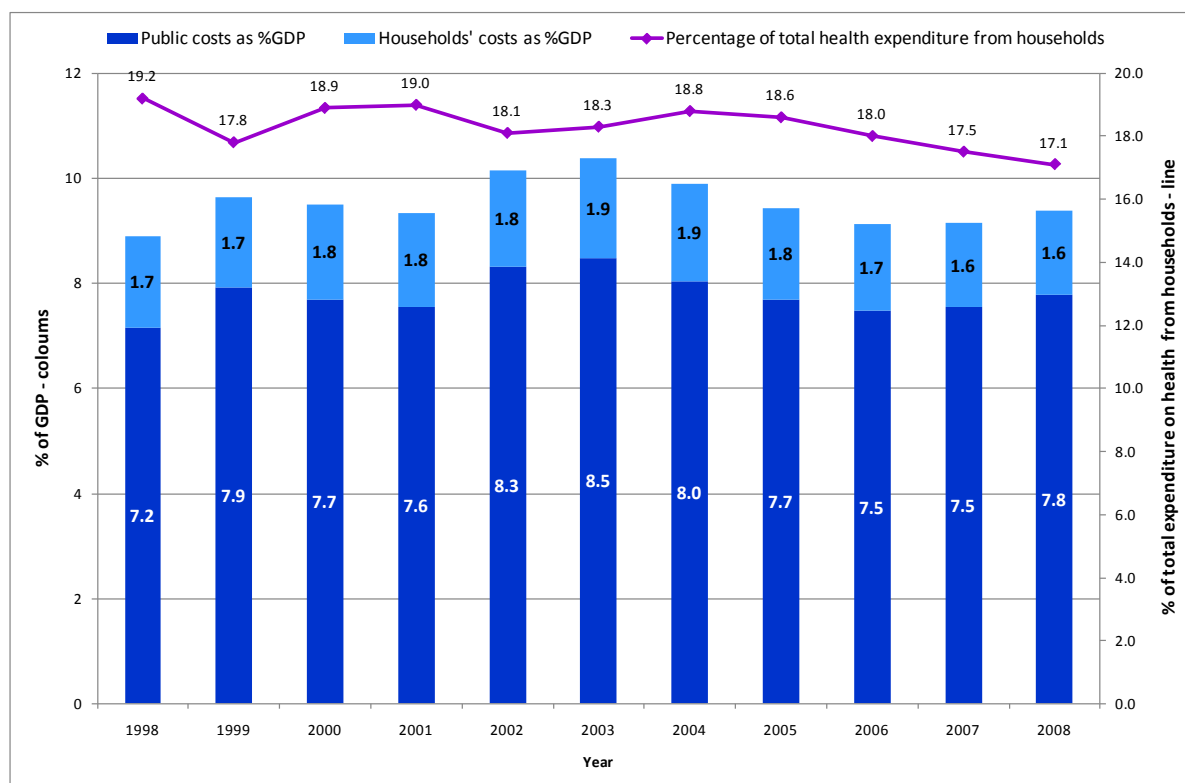


Figure 10: Health expenditure as percentages of the nation's GDP and as a percentage of household participation. Source: Statistics Iceland (2009b)

In 2008, the most expensive parts of the health system covered by the government were: hospital services, including geriatric institutions, which received 68% of governmental expenditure on health care. Outpatient care represented 19% of the cost, medical products and equipment outside the hospital 10% and other health services less than 3% of total governmental expenditure (Statistics Iceland 2008). These numbers are summarised in Figure 11.

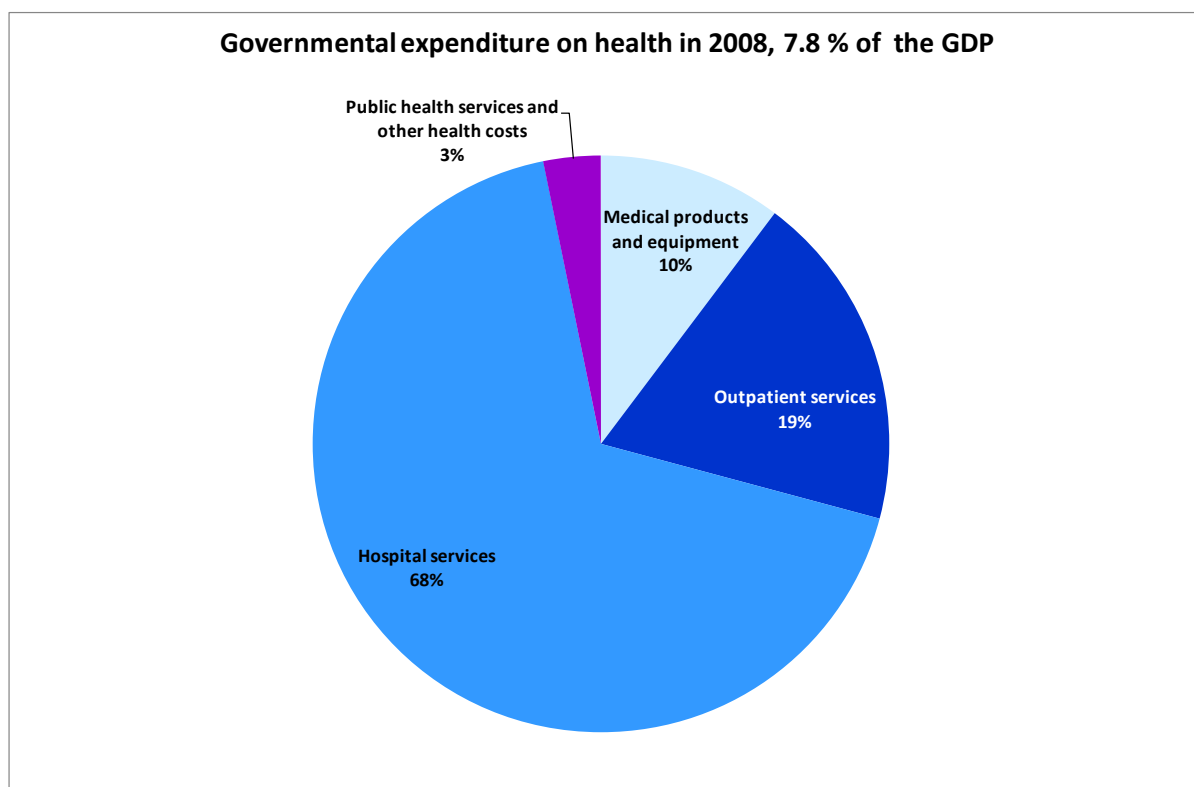


Figure 11: Governmental expenditure on the health system in 2008. Source: Statistics Iceland (2008)

Compared to the OECD, Iceland spent 3,319 USD\$ ppp on health per capita in 2007, while the average expenditure in OECD countries was 2,964 USD\$ ppp (Organisation for Economic Co-Operation and Development 2009). According to an OECD report, the comparison is unfavourable for Iceland when it comes to measuring efficiency, as several OECD countries have achieved similar or higher levels of health adjusted life expectancy (HALE) than Iceland with less public health care spending per capita (Organisation for Economic Co-Operation and Development 2008). The OECD suggested that Iceland could reduce its health care spending by one-third without compromising health outcomes. The Directorate of Health objected to this statement and claimed there were failures in the report (Directorate of Health 2009).

In 2008 Iceland was the highest performing country in the world in the United Nations Human Development Index (United Nations Development Programme 2008). The general health status was assessed as well above the average of OECD countries. Life expectancy at birth in 2007 was 81.2 years, compared to 78.9 years in

OECD countries on average. The infant mortality rate was 2.0 per 1,000 live births in 2007 and was the lowest rate among OECD countries, which was on average 4.9 (Organisation for Economic Co-Operation and Development 2009).

5.3.1 Equity in health

Limited data is available regarding health in different socio-economic groups in Iceland. No such information was found on the Ministry of Health's website, the Directorate of Health's website or on the website of National Statistics. That is surprising, as one of the goals in the National Health Plan to 2010 was to reduce the difference in life expectancy between socio-economic groups by 25% (Ministry of Health 2001); if it is not monitored, then how can such goals be set and measured? No systematic monitoring or public research is ongoing to examine inequalities in health in Iceland, even though general funding for public health research was said to be doubled in the National Health Plan 2000-2010. However, the studies that have been undertaken in relation to equity indicate different health status among Icelanders, depending on socio-economic groups (Thorarinsson et al. 2000; Gunnarsdottir 2005; Halldorsson et al. 2000; Halldorsson et al. 1999). It is well known that access to health services is not the only factor that affects inequity in health; it also depends on environmental and behavioural factors, which usually vary between socio-economic groups (Marmot, Wilkinson 2006). Results from studies on inequity in health indicate that those who are more educated and have a higher income live longer than those with a lower income and are less educated (Gunnarsdottir 2005). Differences in eating and smoking habits have been observed between the socio-economic groups in Iceland, whereby higher education has been associated with healthier eating habits (Steingrimsdottir, Thorgeirsdottir & Olafsdottir 2003) and less smoking (National Public Health Institute of Iceland 2005).

5.3.1.1 Inequity in the out-of-pocket payment mechanism

All Icelandic residents who have lived in Iceland for at least six months have health insurance that provides access to the health system (Icelandic Parliament 2008a). Health care users pay, on average, 17% of the total health care cost as out-of-pocket fees. Children under 18 years, the elderly over 67 years, and disabled citizens all pay lower fees than insured adults in general. There is an annual "safety net" cap of

25,000 Icelandic kronur (USD\$202) on out-of-pocket health expenditure, after which the patient is eligible for a discount card from the Institute of Health Insurance that secures lower out-of-pocket fees for health care services. The “safety net” ceiling is considerably lower for children under 18 years (the sum is for all children under 18 years in a family) the elderly and disabled; 8,100 Icelandic kronur (USD\$65) for children and 6,100 Icelandic kronur (USD\$49) for the elderly and disabled.

Hospitalisation is free of charge, but co-payments are requested for outpatient visits and visits to the Accident and Emergency (A&E) department. A co-payment for a onetime visit to A&E is 4,600 Icelandic kronur (USD\$37) and for a visit to a general practitioner (GP) it is 1,000 Icelandic kronur (USD\$8) for an insured adult. Fees for specialists differ depending on how the specialists have negotiated with the Ministry of Health or the Institute of Health Insurance. An initial fee for visiting a specialist is around 3,600 Icelandic kronur (USD\$29), plus a fee for some additional services needed for treatment (Icelandic Health Insurance 2009). Costs related to treatment received from other health care professionals, such as physiotherapists or occupational therapists, are not included in the discount card, although subsidised. A referral from a GP is needed to access these services. Certain services such as nutritional counselling and psychotherapy are not subsidised at all.

Mental health care is not, except in extreme cases¹¹, subsidised if it is received from a (clinical) psychologist (Ministry of Health 2007a). Their service rate is between 7,000 – 10,000 kronur (USD\$56 - \$80) for an hour's consultation and is a 100% out-of-pocket payment. Treatment from psychiatrists is, on the other hand, subsidised. The total price for one appointment with a psychiatrist is 17,000 kronur (USD\$136) but the patient pays around 38% or 6,500 kronur (USD\$52). The fee is further reduced if the patient possesses a discount card. The subsidisation in Iceland therefore not only discriminates against the type of health care services needed, but also exists on the grounds of health care specialisation. To further complicate matters, some primary health care institutions have hired psychologists, paid by the institutions. Patients living in that particular area can receive a free service from that

¹¹ The government has currently a contract with three psychologists for the whole country.

psychologist if they obtain a referral from their local GPs. This is an additional example of inequity, this time depending on where patients' homes are located.

Dental care is not included in the discount card scheme, although some patient groups do receive subsidisation which is listed in a special regulation (Social Insurance Administration of Iceland 2008; Ministry of Health 2005). Those that are entitled to reimbursement gain subsidies based on rates decided by the Ministry of Health. The minister's rates are much lower than those of the dentists themselves, who can freely decide their own rates (Ministry of Health 2005).

Pharmaceuticals are not included in the general discount card, depending on the type of medicine as to whether it is subsidised and to what extent. There is a special committee, The Committee of Medical Payments, which decides how medical costs are divided between the patient and the Institute of Health Insurance (Icelandic Parliament 2009b). The decisions made by the Committee of Medical Payments are not transparent, as there are no accessible rules governing its decision making process. If conditions are life-threatening, patients are issued a medication certificate which gives discounts and in some cases full coverage (Icelandic Health Insurance 2009; Icelandic Parliament 2008d; Ministry of Health 2009a).

Despite these guidelines, the Icelandic health insurance system has been described as inconsistent, patchy, inequitable and discriminatory. Bjartmarz et al. (2006) state that the out-of-pocket payment system is neither transparent nor logical (Bjartmarz et al. 2006). Research has shown restrictions in access for those with a low income and for those who live in rural areas, mainly because of long transport times and related costs (Vilhjalmsson et al. 2001). Individuals with a low income were more likely to postpone or cancel a visit to a health care professional due to cost concerns. Possession of a discount card decreased the possibility of postponing or cancelling a visit, but surprisingly the research also revealed that only 46% of those who had the right to a discount card possessed one (Vilhjalmsson, Sigurdardottir 2003). There are probably several reasons for this; the system is complicated and people may not be aware of their rights to a discount card, or they may simply forget to keep their invoices, which must be attached when applying for the card. Nevertheless, it should

be noted that, despite the flaws in the system, it is uncommon for people to be unable to afford health services in Iceland.

5.4 Method

5.4.1 Study design

Case studies are based on empirical inquiry, using multiple sources of evidence while investigating a contemporary phenomenon within its real-life context (Yin 2003). A case study was therefore suitable to investigate the initial responses towards a health system in real time while Iceland went through an economic meltdown. Various analytical tools can be applied to case studies, depending on the phenomenon under scrutiny and the research questions raised (Denzin, Lincoln 2000). The Icelandic case was an exploration of an unprecedented evolving phenomenon still with unknown outcomes. The Grounded Theory, which is applicable to form a theory based on data collection with concurrent data analysis, was therefore ideally suitable for this case study (Glaser, Strauss 1967). The Grounded Theory provides systematic working procedures allowing for use of multiple data sources. The analytical working procedures minimise bias at the same time as they are flexible when observing actions/interactions (detailed information in chapter 5.4.8. Data analysis). A theory emerges from the data collection and analysis that can help uncover and understand what lies behind the phenomenon, which is further illustrated by characteristic examples from the data (Glaser, Strauss 1967; Strauss, Corbin 1990). In qualitative analysis, the role of the researcher is always significant as it is her/him who studies the phenomenon under observation, collects data and interprets the findings to establish meaning which could guide policy making and stimulate further research.

5.4.2 The researcher

At the time the study was conducted, I was a doctoral trainee in public health at Brunel University in West London. I am an Icelandic citizen and have been a senior official in the Icelandic health system. I was the general director of the National Institute for Public Health, one of the Ministry of Health's institutions, prior to commencement of the doctoral training. I am therefore familiar with the Icelandic

health system, as well as the Icelandic culture and am acquainted with some of the individuals who participated in the research. Knowledge of the system facilitated access to documents that others might have found difficult to obtain. I was resident in Iceland for the duration of data collection and during the acute phases of the economic crisis and was therefore able to follow the developments contemporaneously. When I was outside the country, I followed the discussions and the ongoing developments through the Internet, mass media and personal communications with Icelandic residents.

Although I was brought up in Iceland with a good understanding of the local culture and how things happen in the society, these factors should have minimal implications for the study, as I followed the grounded theory research framework and was under tight and frequent supervision by my supervisors.

5.4.3 Sampling and data collection

The Icelandic Parliament, Althingi, opens on October 1st every year. The economic meltdown started one week after its commencement in 2008, when almost the entire banking sector collapsed and was nationalised. Three sources of data were used in this research: two sources of secondary data and one source of primary data, in addition to the researcher's observation. The secondary data was collected from the parliament, including all discussions related to health. This data was well suited to the purpose of this study, as the Icelandic health system operates in accordance with laws approved by the parliament, usually prepared by the Ministry of Health, and is funded through general taxation; the parliament decides how much of the state budget is allocated to the health system. Secondary data was also collected from two of the biggest newspapers in Iceland, as they closely follow ongoing issues in society and are open to receiving articles from citizens who want to stimulate discussions on issues about which they are concerned.

The primary data was collected from interviews with stakeholders held six months after the economic crisis commenced in order to gain a more in-depth understanding of actions and interactions in relation to the decision making process and what/who might have influenced the process. An interview protocol was followed, as detailed in

Appendix 3. This was done to minimise errors and biases in the study. The data will be discussed in more detail in the subsequent sections, but Figure 12 below gives an overview of the timing of the data collection.

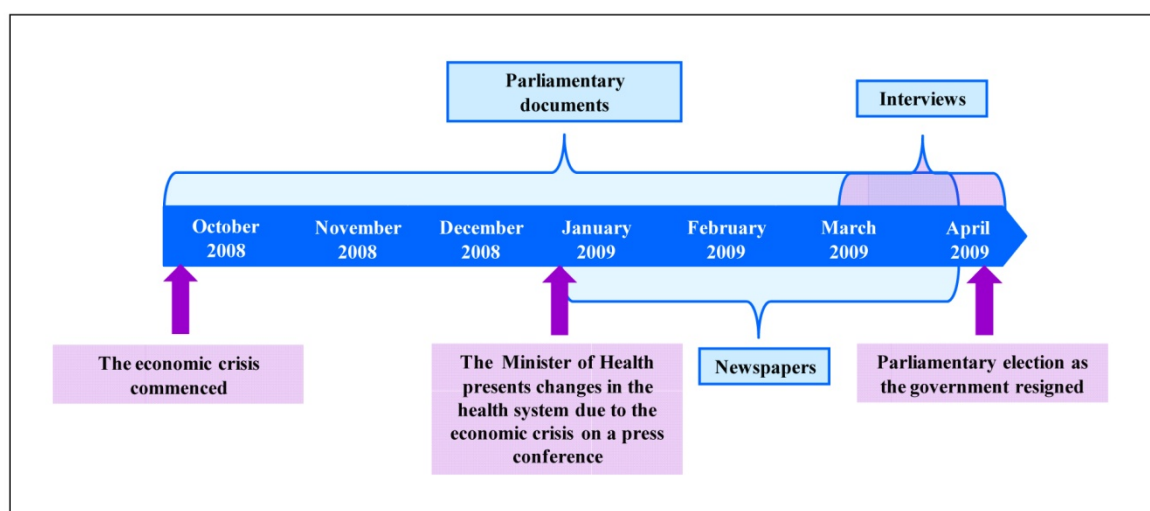


Figure 12: The timeframe of the data collection in Iceland.

5.4.4 Parliamentary documents and newspapers

The official documentation of parliamentary discussions about health took place between the 1st of October 2008 and the 17th of April 2009. This is the timeframe from the opening session of the parliament until the final assembly before parliamentary election, held on the 25th of April 2009. The parliamentary discussions were accessed through the parliament's website, where they are available with open access (www.althingi.is). During this time period, there were 135 parliamentary sessions. The second source was news and articles about the health system in two of the most frequently read newspapers in Iceland, Morgunbladid and Frettabladid, from 1st of January until 17th of April 2009. Data collection started in January 1st as the minister of health presented major changes in the health sector due to the financial crisis in a press conference on January 7th 2009, which caused reactions which were discussed in the media. The newspapers were observed on a daily basis, but additionally a search was conducted in the newspapers via the Internet using the keyword "heilbrigðiskerfi", which means "health system". In Morgunbladid, there were 447 articles/news, of which 94 were about the Icelandic health system in

relation to the economic crisis, while there were 52 in Frettabladid, of which 27 were relevant to this research.

5.4.5 Key informants' interviews

Primary data was from interviews with a purposive sample of key informants held in March and April 2009, or as soon as the ethics approval was received. Key informants were those who participated directly in the decision making process or those who governed health care institutions that were directly affected in the aftermath of the economic crisis. These were health professionals at the Ministry of Health and at the Directorate of Health, managers at health care institutions and health system specialists participating in or observing the policy process. Analysis of the data was made concurrently with the data collection to improve interview techniques and to ensure that emerging themes would be tested and further developed (Strauss, Corbin 1990). The data collection was continued until saturation, when interviews did not provide new additional information.

The purpose of the primary data sampling was to gather first-hand information from key informants on how they experienced the first response towards the health system in the economic crisis, how stakeholders were involved and what/who were the main influential bodies in the decision making process and whether they saw the actions as a threat to equity in health. The precise role played by the individuals is not described in order to ensure their privacy and confidentiality, which is especially important in a small country in which people belonging to the health system authorities¹² are few in number and move in intimate circles. Firstly, an e-mail was sent to senior individuals inside the Ministry of Health and the Directorate of Health, in which the research was introduced and their participation requested, see Appendix 4. In the same e-mail, a letter was attached that explained what would be discussed in the interview, as shown in Appendix 5. Based on the analysis of these first interviews, health care managers and health professionals in affected institutions were similarly approached. Health care specialists who were involved in the decision making process were also sent an e-mail requesting their participation. Altogether,

¹² Health system authorities are the minister of health, the Ministry of Health and its institutions.

ten individuals were sent an e-mail. Nine of the ten replied within a few days and agreed to participate; meetings were arranged through e-mails. One individual, who did not reply to the e-mail, was telephoned and then agreed to participate. Two individuals requested the inclusion of colleagues from their institute in discussions, although I restricted these group interviews to a maximum of three participants to ensure personal interaction and confidentiality. Altogether, the interviews consisted of two groups with three participants each and eight interviews with individuals, adding up to a total number of fourteen individuals of whom eight were professionally acquainted with me. The interviews took from 45 minutes to an hour and were largely unstructured, but were conducted according to an interview guide and the information sheet given to participants (Appendices 3 and 5). In cases where the interviewees knew the researcher, the personal introduction in the protocol was dropped. All interviews were held in the informants' work places and were recorded.

5.4.6 Ethics

Ethics approval was applied for from both the Graduate School Ethics Committee at Brunel University and from the National Bioethics Committee Office in Iceland. The research was approved by Brunel University, but approval from The National Bioethics Committee Office in Iceland was deemed unnecessary, since the research did not involve personal questions (Appendix 6 and 7).

Precautions were taken to maintain the confidentiality of participants; interviews were recorded and the audio files stored on my personal computer with a password. The names of the audio files did not utilise the name of the participants and their names were never mentioned in the records. It was therefore not possible to connect an audio file with a name. The same method was applied to transcripts made from the interviews, they were kept on the same computer and were not connected to the participants' names. A backup was kept on a disk stored in a safe only accessible by me. As soon as this thesis has been approved by Brunel University, all primary data will be destroyed.

5.4.7 An overview of data used in the research

An overview of data sources, types of data and its purpose is given in Table 9.

Table 9: Data used in the Icelandic case study

Data Sources	Type of data	Purpose
The Icelandic Parliament.	Transcripts from parliamentary meetings involving discussions on the national health system in association with the economic crisis.	To explore what the MPs and ministers were concerned about in relation to the economic crisis and what were the initial governmental responses towards the national health system.
The newspapers: Morgunbladid and Frettabladid	Articles and news about the Icelandic health system in relation to the economic crisis. Hard copies and printed out news and articles through the newspapers websites.	To investigate the press and public's view of the initial actions taken after the economic crisis and how stakeholders were involved.
Interviews with key informants.	Audio records from interviews with key informants, who were managers, professionals and specialists within the health system, about their views on the first responses towards the health system and partnership with stakeholders.	To examine professionals' opinions in relation to the decision making process and how stakeholders were involved.

5.4.8 Data analysis

ATLAS.ti 5.2 qualitative data analysis software was used to analyse the data.

Original data, both textual and interviews, were in Icelandic. Audio recordings of interviews were played back to check for quality and to improve interview techniques, as they were collected concurrently with the analysis. Transcripts from the parliament, newspapers and audio recordings were imported into ATLAS and open coding undertaken using conceptual labels relevant to the research questions (forming different categories). Further analysis was conducted using axial coding, in which categories (formed in the open coded process) were compared and connections made between them, leading to the formation of new core categories; a process of grouping concepts that pertained to the same phenomena (Corbin, Strauss 1990; Strauss, Corbin 1990). The final step was selective coding, whereby core categories were selected and systematically related to each other to reveal the grounded theory of the research. Quotations were translated into English. An overview of the Grounded Theory approach is illustrated in Figure 13 and an example of the analytical process of the case study, based on the selection of two transcripts, is shown in Figure 14.

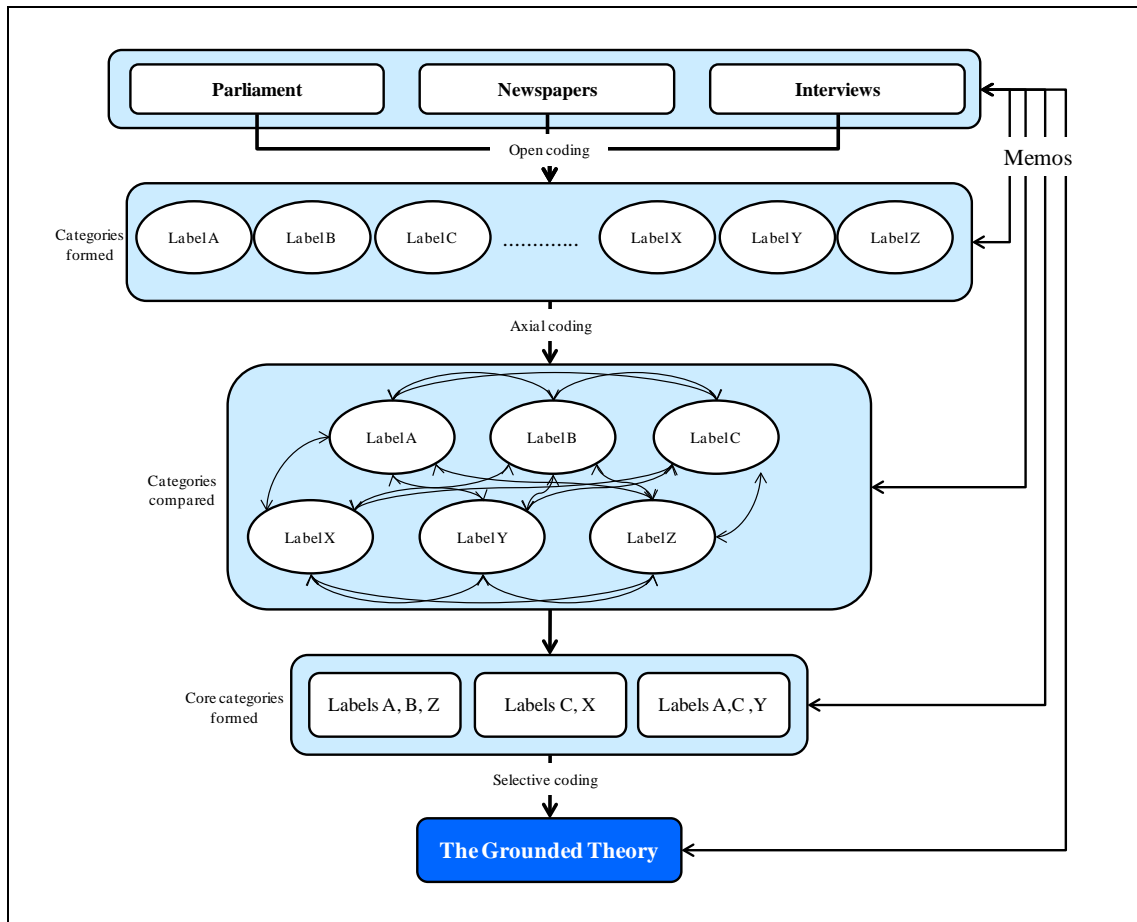


Figure 13: Data analysis using the Grounded Theory approach.

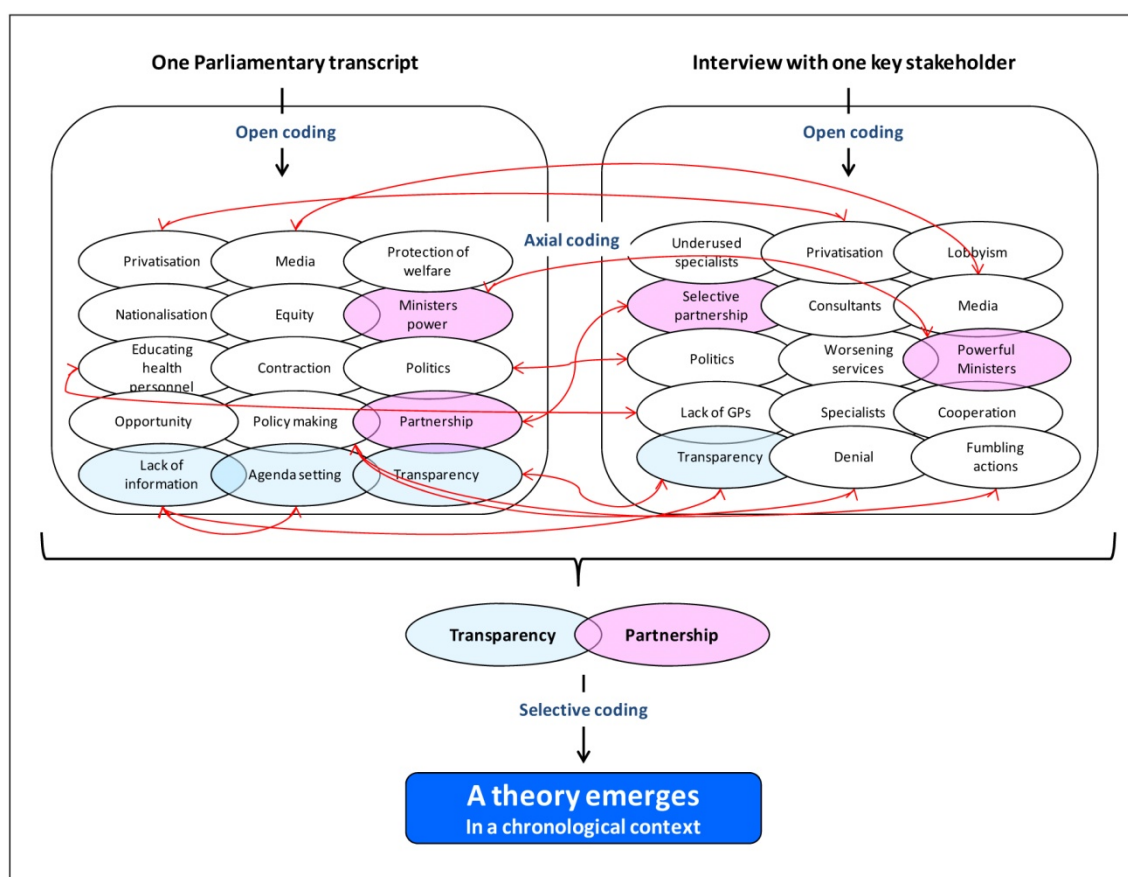


Figure 14: The analytical process of two selected transcripts to show how categories were formed, compared and used to establish core categories which were applied to develop the grounded theory.

5.5 Results

As will be presented in subsequent chapters, the data revealed several themes. The concept of “**information**” appeared as one of the core themes in relation to how information was sourced, analysed, deployed and made available to stakeholders. The analysis indicates that the quality of information was poor, scarcely used and kept within a narrow group of people, leading to the formation of an “**elite**” having the most impact on the decision making process and actions taken. The “**information**” theme was strongly related to two other themes identified in the data, namely “**transparency**” and “**selective partnership**”. The analysis reveals that those with access to information disseminated it to selected interest groups while keeping it

from - and even actively concealing it from - other stakeholders, causing opacity in the decision making process. Another important theme emerging from the data was lack of “**accountability**“, which also was highly linked to lack of “**information**” as those expected to be accountable did not have necessary information in order to “**respond**” timely to the unfolding crisis. Yet another theme identified was “**stewardship**” as interviewees described weak leadership as one of the fundamental issues missing in the policy making process during the time under observation.

“**Rule of law**”, as per definition by the World Bank, is one of the governance indicators that was not referred to directly in the data collected, however, the “**power exercise**” appeared quite frequently in the data, mentioned in relation to “**politics**” and different “**political ideologies**”.

All these themes will be further discussed as the results will be presented in chronological order in the following sub-chapters. Furthermore, a flowchart in Appendix 8 gives an overview of the course of events.

5.5.1 An abrupt crisis causes a shock

Traditionally, the parliament, “Althingi” opens on October 1st every year and adjourns at the end of May. Two days before the opening in autumn 2008, the prime minister announced that the government would take over 75% of the shares in the country’s third largest bank, which faced liquidity problems (Prime Minister’s Office 2008). The decision was never discussed in the parliament or with the minister of commerce and the whole working procedure, in the preceding months, indicates a lack of trust between those with authority, opacity and selective participation in the decision making process (also observed by the Investigation Committee¹³) (Hreinsson, Benediktsdottir & Gunnarsson 2010; Arnarson 2009; Bjarnason, Kristjansson & Stefansson 2008). The Governor¹⁴ of the Central Bank was involved, which has

¹³ The Icelandic parliament passed a law in December 2008 assigning a new Investigation Committee to execute a comprehensive and detailed investigation of the events leading up to fall of the banking sector and the economic crisis in Iceland. The committee submitted a comprehensive report in nine volumes on 12th April 2010 (Hreinsson, Benediktsdottir & Gunnarsson 2010).

¹⁴ The governor of the Central Bank has been active in Icelandic politics for decades. He is the former leader of the Independence Party, the same party as the prime minister when the economic crisis

been questioned *inter alia* because of his acquaintance with the prime minister, and since it is not the role of the Central Bank and its governor to be involved in political decisions (Arnarson 2009; Visir 2008a; Frettabladid 2008b; Central Bank of Iceland 2008).

The first few days in parliament in autumn 2008 can be described as disorientated, reflecting increasing unease. Concerns were growing that the global “credit crunch” might have serious negative impacts on the Icelandic banking sector, which had been growing fast and had, in the space of a few years, grown to tenfold the size of domestic production (Zoega 2008). On the 6th of October, “Althingi” passed a new law, often called the Emergency Act (Act No. 125/2008), enabling the government to intervene extensively in Iceland’s banking and financial sector¹⁵ (Icelandic Parliament 2010b). A day later, the second and third largest banks of Iceland were nationalised. Neighbouring countries, especially Great Britain and The Netherlands, were worried as their citizens and organisations had placed deposits in Icelandic banks (BBC 2009). The British government decided to invoke anti-terrorism legislation and freeze the Icelandic banks’ assets located in Britain (HM Treasury 2008; HM Treasury, Financial Sanctions Notice 2008). The biggest bank of Iceland subsequently collapsed and was also nationalised. Within two days, the Icelandic government had nationalised almost the entire banking sector in Iceland.

Despite the critical implications of the financial collapse, both nationally and globally, discussions addressing the government’s response were initially not included on the parliament’s agenda. The agenda in parliament for 9th of October 2008, the day after the nationalisation of the banking sector, shows that the bank crisis only appears as a subheading under a general purpose agenda called “unprepared questions-time” which allows 1-2 minutes’ questions from the MPs followed by short answers from the ministers. The opposition leaders criticised the prime minister:

started. The governor was the prime minister of Iceland for 13 years, minister of foreign affairs for a year and the mayor of Reykjavik, the capital, for nine years.

¹⁵ This “emergency law” was necessary for the government to nationalise private financial institutions.

“...the prime minister has time, despite a heavy workload, to host long press conferences with foreign reporters. ...he must be able to give the parliament and the Icelandic nation some of his time so we can exchange **information** and opinions about the current situation.”

MP from the Left-Green Movement
From parliament transcripts (emphasis added)

“Today is not a normal day. I expected the prime minister to show us some respect and to address the parliament in this situation when everything in our banking sector has collapsed in the worst possible way. ...**we do not have any data, no information ...**”

MP from the Progressive Party
From parliament transcripts (emphasis added)

These accusations from the opposition members of the parliament support the suggestions made by the Investigation Committee that the parliament was not involved or informed about the actions taken by the prime minister in the name of the state. The prime minister was defensive, although his words also support the indication of opacity in the political arena:

“I will of course report to the parliament as soon as we have all relevant information, which is **appropriate to publish**. ...things are happening very fast. We are experiencing **drastic changes in our society** in a very short time, unfortunately **serious changes**. We need to discuss it, and we hopefully will, **on a confidential basis**, and I will try to arrange a meeting later today.”

The prime minister from the Independence Party
From parliament transcripts (emphasis added).

The key informants interviewed for this study were asked to comment on how the MPs and ministers had handled the situation as the private banks collapsed. Those who responded all thought that the MPs had not realised how serious the situation was and that “surprisingly little action” was taken towards solving the expected

backlash and minimising the damage. What “little action” taken was “fumbling”, as one of the informants described it.

The atmosphere in parliament was gloomy in these early days of October 2008, as MPs were shocked and left without information and excluded from major decision making processes¹⁶. The crisis was the main subject of all news and was the main topic of discussions at work places, club meetings and on street corners where individuals and representatives of different organisations expressed their worries and anger, especially towards the management of the banks, rich businesspeople as well as politicians. This course of events, in which a nation has had to take over almost the entire domestic banking sector worth more than ten times the nation’s GDP, has few global precedents (Zoega 2008).

The observation indicates a government in a state of shock and a subset of ministers and their political allies having exclusive access to vital information. The decisions taken in relation to the nationalisation of the banking sector seem to have been kept within a narrow circle of people, suggesting lack of transparency, selective partnership and even corruption (Gylfason 2009).

5.5.2 Actions to minimise society’s distress

The financial crisis caused great distress among the people of Iceland. Many were worried that they would lose savings kept in the Icelandic banks (National Broadcasting service November 2008). People who had kept their money in bonds and those who kept their savings on the stock market lost significant amounts as the value of bonds and equity in companies fell¹⁷. The nation was worried about the future and as anger grew, so did rioting in the streets.

The minister of health sent a letter to health care managers and requested them to prepare health care services for increased psychosomatic disorders caused by the crisis. The primary health care services of the capital area reacted fast and two hours after they received the minister’s request, they had sent out an e-mail to all

¹⁶ The MPs agreed to approve the “Emergency law” that was prepared in three days and subsequently required more information on the situation and future prospects.

¹⁷ The stock market fell more than 80% in two days when the banks were nationalised.

their institutions informing health professionals. A few days later, the management had prepared an action plan for the primary health care to follow under the circumstances. The minister of health also entrusted the manager of Landspítali (the main national hospital) to strengthen the mental health department so it could meet a projected increase in psychosomatic disorders (Sigurdsson 2009). On the 10th of October 2008, a new psychiatric reception was opened, free of charge. At first 1-4 individuals used the service per day, but that number soon decreased. Approximately 50 individuals used the service during the six months it was open, less than two individuals per week on average (Sigurdsson 2009).

Many key informants held the view that the minister of health wanted to show compassion, but some also believed he had used the opportunity to demonstrate to the nation that he was a strong politician who “took responsibility” and “acted swiftly” in difficult situations, as evidenced by the ample publicity for the opening of the new psychiatric reception. This view was opposed by an individual who participated in the process of opening the psychiatric reception, although he conceded that politicians often do expect some reward for their efforts. Although key informants all believed this action had been well-meant, they said it was not what the nation needed at that time. They, as well as the former Chief Medical Officer, claimed that to overcome disasters, which this undoubtedly was, people needed information (Frettabladid 2008a). One of the key informants said:

“[The psychiatric reception] was opened with some pomp and circumstance... Many people have pointed out that this was not the right reaction and among them are psychiatrists. ... [A psychiatrist] said that this was absolutely the wrong reaction as a new psychiatric reception is not what people need at this stage. When the nation is experiencing disaster, like this, **people need information**, not psychiatric-nonsense. ... **People did not know what was happening** to their country and what the consequences for its inhabitants would be.”

Health care manager (emphasis added)

The observation indicates that the first action, which was meant to meet an upturn in trauma among the nation, turned out to have limited utility and was viewed as an example of the “fumbling” actions taken in the early days of the economic crisis. The citizens demanded information on the government’s accountability and responsiveness and MPs requested information to which they should have access. This strengthens the indication of lack of transparency.

5.5.3 The health system’s first adaptations

In November 2008, the minister of finance sent a letter to all ministries requesting them to reduce costs by 10%. The minister of health made no attempt to defend the health system and sent a letter to health institutions that, according to key informants, was interpreted in different ways by the recipients. Some understood the letter as an order to cut costs by 10% at their institution, while others believed it to be a request for suggestions on how best to decrease costs by 10%. The content of the letter therefore caused controversy, as it was generally accepted by health professionals and health care managers that a 10% levelled cost reduction for all institutions was unfair and would have negative consequences for health equity. The minister of health was criticised for weak stewardship and for not taking the lead in prioritising where to reduce costs within the health system, which was meant to be his responsibility. The minister claimed he was asking for suggestions and said it was reasonable to make the institutions themselves responsible for deciding how to prioritise within their institutions.

Landspítali University Hospital, connected to the University of Iceland, is the main hospital. It is a state-owned hospital with three main roles: to serve patients, teach and train clinical staff and participate in scientific research (Landspítali University Hospital 2009). Landspítali had been running at a deficit for some years and from 1st of October 2008 a new director was appointed¹⁸. She immediately prepared the staff for changes and announced that the organisation chart would be changed with the aim of diminishing overhead costs. These changes were, according to the manager, not connected to the financial crisis and would have been enacted regardless. As a

¹⁸ The new appointment was not connected to the economic crisis.

response to the financial crisis, divisions were merged, which led to fewer hospital beds (Morgunbladid 2009a). Overtime payments to staff were reduced and wards that had been open seven days per week were now operated as five-day wards (Morgunbladid 2009c; Morgunbladid 2009e).

The District General Hospital in Akureyri, the second biggest hospital in Iceland, closed down one of its units for the elderly. The plan was to move the patients and part of the staff to another location, outside the main hospital. This action resulted in staff redundancies (District General Hospital in Akureyri 2009; Frettabladid 2008c). In addition, the hospital closed down a day clinic in the psychiatric unit, although the intention was to reopen it later in another location. Funding expected for various other projects was withdrawn (District General Hospital in Akureyri 2009).

The minister of health implemented a new regulation, introducing new out-of-pocket payments for hospitalisation, which allowed for charges every time people had to be hospitalised, with the exception of births (Icelandic Parliament 2008c). This was new in Icelandic health care history and caused a great deal of anger among some citizens and health professionals.

The management at the primary health care service in the capital area decided to cut administration costs and make some structural changes, in addition to cutting staff payments, especially to general practitioners (Morgunbladid 2009f). These are a few examples, but all health care institutions in Iceland immediately started to prepare for reduced budgets.

5.5.4 Opportunity for reforms – the decision making process

A new state budget for 2009 was approved in parliament on December 22nd 2008. Allocations to the health system were reduced by 6.7 billion Icelandic kronur (USD\$54 million) from what had been presented in the original state budget, reducing it from 119.4 billion kronur (USD\$955 million) to 112.7 billion kronur (USD\$902 million). The reduction corresponded to 6% of actual governmental health expenditure in 2008, which was then 112.2 billion kronur (USD\$898 million) (Ministry of Health 2009f). The state budget had been discussed and revised under difficult circumstances and the members of the opposition parties, sitting in the Budget

Committee, were dissatisfied with the working procedure. They wrote a special committee report signed by the opposition members only (Bjarnason, Kristjansson & Stefansson 2008). Their main criticism was lack of information from the government, information that was related to losses and over-commitments that would affect the nation for many years to come. They claimed that the agreement with the International Monetary Fund¹⁹ (IMF) had been treated like a “military secret” and that MPs had first seen the agreement after a reporter obtained and published a copy of it in the press (Bjarnason, Kristjansson & Stefansson 2008).

Even though people recognised that there were many difficult decisions ahead, all key informants, politicians and others saw the crisis as an opportunity for health care reform and claimed that this was the right time for a comprehensive reconstruction of the whole health system.

The Ministry of Health started preparing for cost reductions with two main objectives: (i) to act quickly on the basis of the proposals from the health care institutions; and (ii) to speed up the feasibility study on basic structural changes of the Icelandic health system²⁰. Little time was given for both of these tasks, and the Ministry’s staff were under pressure to act swiftly. Consultants chosen by the minister were hired to take part in the process and, in some cases, to lead the work. One interviewee said:

“[The minister] used external consultants extensively. Later it became clear that they were more or less closely related to him, some were even his personal friends.”

Health care manager

Another interviewee found it surprising that expertise and professional knowledge in the Ministry was not used more for this process:

¹⁹ Iceland asked formally for assistance from the International Monetary Fund (IMF) on October 24th, which the IMF approved on November 19th 2008.

²⁰ Some of the ideas in the feasibility study had been under discussion before, but were never approved due to political resistance, mainly from rural areas.

“..it was surprising to see how little [the minister] used the professional knowledge inside the Ministry.at these meetings were consultants who I had met in another contextthese consultants, who might be good in finance and economic questions, had very limited knowledge of the health system..”

Health care specialist

Some health personnel and politicians were worried that the economic difficulties would cause irreparable damage to a welfare system that had taken many decades to build. The minister was encouraged to work openly by keeping all documents and discussions transparent to increase the likelihood of consensus among the population (Directorate of Health 2008b). The chief medical officer emphasised the importance of maintaining a strong primary health care service and reminded the minister of the importance of equity in health (Directorate of Health 2008b). It is interesting to note that, even though this advice was given, documents were not easily accessible and memos about important conversations or minutes of meetings were either non-existent or unavailable.

On the 7th of January 2009, the minister of health held a press conference in which he explained how his Ministry intended to meet the 6.7 billion kronur (USD\$54 million) reduction in 2009 (Ministry of Health 2009e).

The changes proposed by the minister of health were twofold:

1. Merging of health care institutions in rural areas.
2. Cooperation between hospitals in the capital area.

The minister of health asserted that the ideas presented were prepared in partnership with health care managers and that the main objectives had been presented to the staff in affected institutions, which was not confirmed by all key informants and not reflected in the newspapers. After the meeting, on January 7th, the minister appointed four committees and gave them 12 days to prepare recommendations on how to implement the decisions presented. The committees delivered a memo a few days before the government resigned on the 26th of January

2009²¹. The implementation was therefore put on hold, but its fundamental ideas will be discussed in the next two subsections.

5.5.4.1 Merging of health care institutions in the rural areas

The country had, from 2007, been divided into seven health regions, as shown in Figure 9. The structural changes, presented by the minister of health proposed a merger between all health care institutions within each region, led by the biggest institution in the area. The capital area, having the densest population, was still to operate with multiple health care institutions (Morgunbladid 2009d). As an example, eight health care centres in west Iceland were to be merged with their headquarters in Akranes, home town of the only hospital in the region. In north Iceland, nine districts were to be merged into one region under the leadership of the District General Hospital in Akureyri. The minister stated that no institutions were to be closed down; these changes primarily meant reduced overhead costs (Ministry of Health 2009c).

Many municipalities opposed this proposal. Only one health care centre welcomed it publicly (Ministry of Health 2009d; Visir 2009a). In a local newspaper in south-west Iceland one citizen wrote:

“It is good that the minister wants to change out-of-date organisations, but it is sad if he rushes forward and does not think of patients or employees. Such methods are not likely to be successful, even for good ideas.”

(Thoroddsen 2009).

Although the minister of health stated that decisions were made in partnership with stakeholders, only a few informants confirmed this statement. The interviews revealed that selected staff from the main hospital, Landspítali, played a prominent role in the preparation work. Key informants were unanimous in the view that some of the minister’s ideas were sensible, but because of selective partnership (i.e.

²¹ After thousands of protesters called for the government to step down in January 2009, the prime minister decided to resign and call an early election. See also McLaughlin’s report (McLaughlin 2009).

disregarding important stakeholders), lack of transparency and few documents to support the ideas, the minister failed to establish a consensus on them.

“... Part of the minister’s problem was lack of cooperation. ... Some of his ideas were good but the problem was that he did not cooperate with the stakeholders ... even though good advice was given, it was not accepted”.

Health care specialist

Before the press conference on the 7th of January, work had been on going at the Ministry of Health and meetings were held with certain stakeholders, Ministry staff and consultants. One key informant said that these meetings were not held to exchange information or for participation, and stated that all decisions were in fact made “behind closed doors”:

“... it was made quite clear to us [in a meeting at the beginning of December] that the ideas on the structural changes should be treated confidentially and that we could not talk about them with others. I immediately had the feeling that the ideas presented were much more than just ideas. This had already been decided. Now they only had to prepare the text and figures to justify the ideas. ... As the minister presented his decisions one month later, at the press conference on January the 7th, they were exactly the same as the ideas presented at the meeting in December.”

Health care manager

MPs from the opposition criticised the minister of health for “hasty” actions with limited partnership and lack of documentation and expressed their concerns over the lack of information on how the minister intended to adapt the health system to the budgetary reduction. One of the opposition MPs said:

“The actions that the ... minister was going to introduce were hasty and not based on good governance. Blind merging of primary health care in every country’s quarter, where no notice is taken of their geographic position or special needs nor what the local knowledge is ... does not automatically mean

increased efficiency. ...We still have not made the policy of how we want to streamline our health system in the current financial crisis ...Such policy-making must be executed in cooperation between the government, health professionals, educational institutions and the citizens.”

Progressive Party MP
From parliament transcripts

By law, all parts of the country are represented in parliament and politicians from the rural area are faithful to their home areas, lobbying actively for the welfare of their people. To merge many small health care units, distributed around an area of more than 100,000 square kilometres serving 317,000 people, is a sensitive issue and requires strong leadership with active participation from all stakeholders in a search for consensus oriented solutions, backed up by sound documents²².

5.5.4.2 Cooperation between hospitals in the capital area

The second set of decisions, presented at the press conference on 7th of January, were changes regarding hospitals in the capital area and Keflavik²³, in the south-west corner of Iceland (see Figure 15).

²² In this context, it is important to keep in mind that Iceland is located in the North Atlantic Ocean between the 63rd and the 67th degrees North latitude. The average temperature is around 4 degrees, ranging from approximately -3 to +13 throughout the year, although greater extremes are often seen. The weather can change fast and become so bad that it is not possible to travel, sometimes for a couple of days.

²³ The name of the city, Keflavik, has now been changed to Sudurnes.



Figure 15: A map of the south west corner of Iceland. Source: googlemap.com

The main alteration was a closure of St. Josefsspítali, a hospital in Hafnarfjörður (inside the capital area) in order to change its usage into a geriatric institution²⁴. There is an operating theatre at the hospital, which is also used by “visiting” specialists for orthopaedic surgery, for example. The minister’s plan was to split up the operating theatre at St. Josefsspítali, move one part to Keflavík and merge it with the theatres there, and the other half to Landspítali in Reykjavík (Thordarson 2009). The operating theatres at Keflavík were to be run as a new (private) organisation led by the health professionals from St. Josefsspítali (Thordarson 2009). Other specialised services that were to be moved to Landspítali were introduced as potential subjects for tenders (Thordarson 2009). According to a memo written by one of the minister’s consultants, these changes were supposed to save 160 million Icelandic kronur (USD\$1.3 million). The memo did not specify whether this saving was to occur at once or whether it was to be accumulated over a longer period of time. No background information for the calculations was shown (Gudgeirsson 2009).

The minister’s decision to change the hospital in Hafnarfjörður into a geriatric institution caused anger, both among the staff at St. Josefsspítali and generally in the municipality of Hafnarfjörður, amongst its citizens. Even some of the minister’s

²⁴ St. Josefsspítali runs one general ward and one ward for internal medicine, besides having specialists in subjects such as ophthalmology and gastroenterology.

political partners (in the same political party) were dissatisfied and one said that he had, unsuccessfully, tried to change the minister's mind, claiming that he had not seen any convincing arguments to support the decision. He said he could not deny that such working procedures caused one to think there might be some other underlying political issues behind the minister's decision (Frettabladid 2009).

Key informants stated that there was little consultation with St. Josefsspitali, the municipalities and other citizens prior to this conclusion and that the decision was not supported by adequate documents:

“There was a serious lack of cooperation and under such conditions people start to imagine that there **must be some other underlying issues behind the decision**... ..it was [the minister's] style not to cooperate. He probably thought that he would not be able to make such drastic changes in the health system in such a short time with too much cooperation with stakeholders.”

Health care manager (emphasis added)

The “underlying (political) issues” indicated by interviewees and those opposing the minister's proposals regarding St. Josefsspitali were not clarified. However, in light of earlier discussions in the news about an investor interested in launching and running private operating theatres in Keflavik, it is possible that this was part of the “underlying (political) issues”.

The protests on the streets amplified every month and in January 2009 the prime minister resigned and the cabinet stepped aside for a new government, which took control on February 1st 2009.

5.5.5 New temporary government

The two politicians who exchanged keys to the Ministry of Health on February 1st 2009 favoured extremely different political ideologies. It is therefore not an overstatement to say that the Ministry of Health went from one political extreme to another. The first action, taken by the new minister of health from the Left-Green

Movement²⁵, was to withdraw the new regulation that permitted hospitalisation charges (Morgunbladid 2009b; Ministry of Health 2009b). He also withdrew the decision to change St. Josefsspitali to an institute for the elderly, and appointed a new committee to develop revised proposals on how St. Josefsspitali hospital could be better linked to the main national hospital, Landspitali. Mergers of health care institutions in rural areas ceased, except where they voluntarily merged; for example, in west Iceland and partly in north Iceland (Baejarins Besta 2009). The opposition parties said that the new minister only “dared to” take popular decisions which he refuted and said he needed time to consult with stakeholders.

All key informants said that political views had a much stronger influence on actions and decisions than the opinions of health professionals:

“The political advisors that ministers of health have in their closest circle have had much more influence on policy making than health professionals have ... The policy making process runs down the wrong paths, delivering disputable results.”

Health care specialist

The key informants also shared the general view that the extreme political ideologies of the ministers in charge had a disruptive effect on the work done within the Ministry and was a waste of resources, changing directions without a clear vision or a basis of good, consensus oriented background material:

“Then we got a yet another minister [February 1st 2009, from the Left-Green Movement] and the first thing he does is to stop or reverse most of the decisions made by the previous minister. Not necessarily because they were bad but just because [the former minister] made them ... equally irrational as the decision making by the previous minister appeared to have been. This is

²⁵ This minister lasted only for eight months in office before he resigned because of political collision with the cooperative party and yet another person, also from the Left-Green Movement, took over.

terrible governance, not to mention the waste of money involved ... and the poor staff ... these are ridiculous working conditions.”

Health care specialist

5.5.6 Equity in health

Economic crises and how governments respond to them could affect equity in health if they are not mitigated and health specialists claimed that the consequences of the Icelandic crisis were visible among vulnerable groups soon after the trouble commenced. Decreasing family income caused by increased unemployment, together with rising prices (caused by the depreciation of the currency) made it more difficult for disabled, unemployed and low income families to pay for their pharmaceuticals, and eventually more individuals had to ask, for example, the Icelandic Church Aid for assistance to pay for their essential medicine (Icelandic Church Aid 2009).

Most informants used dental health as an example of an area where increased inequity in health would probably first strike in the economic crisis. Dentists have been fighting for increased governmental subsidisation on their services for some years. A few months after the financial crisis started, the Icelandic Society of Dentists launched a free dental clinic that was open once a week for four weeks (Icelandic Society of Dentist 2009). This service was only for children whose families could not afford their dental care. Demand exceeded supply and many were turned away. This action inspired the discussion about inequity in dental health, but one year after the crisis commenced no new regulations had been introduced concerning this issue.

As indicated in the section about Iceland, out-of-pocket payment arrangements in Iceland are inconsistent and discriminatory with regard to illness and place of treatment. Politicians are aware of the flaws in the system and the matter has been put on the agenda in the parliament. The minister of health, in power when the crisis commenced, appointed a committee to scrutinise the out-of-pocket payment system in health care services. When the new minister, from the Left-Green Movement, came to power (February 1st 2009), he abolished the committee, despite

encouragement from many MPs to let it continue its work (Johannesdottir 2009). The committee had collected data for over a year and worked “day and night”, according to an Independence Party MP. The new minister claimed the committee was on the “wrong course” and that he would use part of the committee’s work and bring it to a “more acceptable path”. No documents could be found in the parliamentary library from this committee, but the Ministry of Health possesses a draft of a report (Committee to explore the out-of-pocket payments in the health care service in Iceland 2009). The draft report was not easily available and it took effort to gain access to it. The data collected by the committee are from the entire population; they reveal that out-of-pocket payment varies immensely among Icelandic citizens, although only a few people have had to bear considerable costs. In 2007, 97% of those who used the health services paid on average 49,630 kronur (USD\$400), while 51 individuals (0.02% of the health care users) paid on average 490,558 kronur (USD\$3,956) (Committee to explore the out-of-pocket payments in the health care service in Iceland 2009). Income data is not part of the collected statistics and therefore it is unknown how costs are spread between socio-economic groups. Furthermore, it is unknown what kind of health care services were received and what type of services could have accounted for the high costs. These data are summarised in Figure 16.

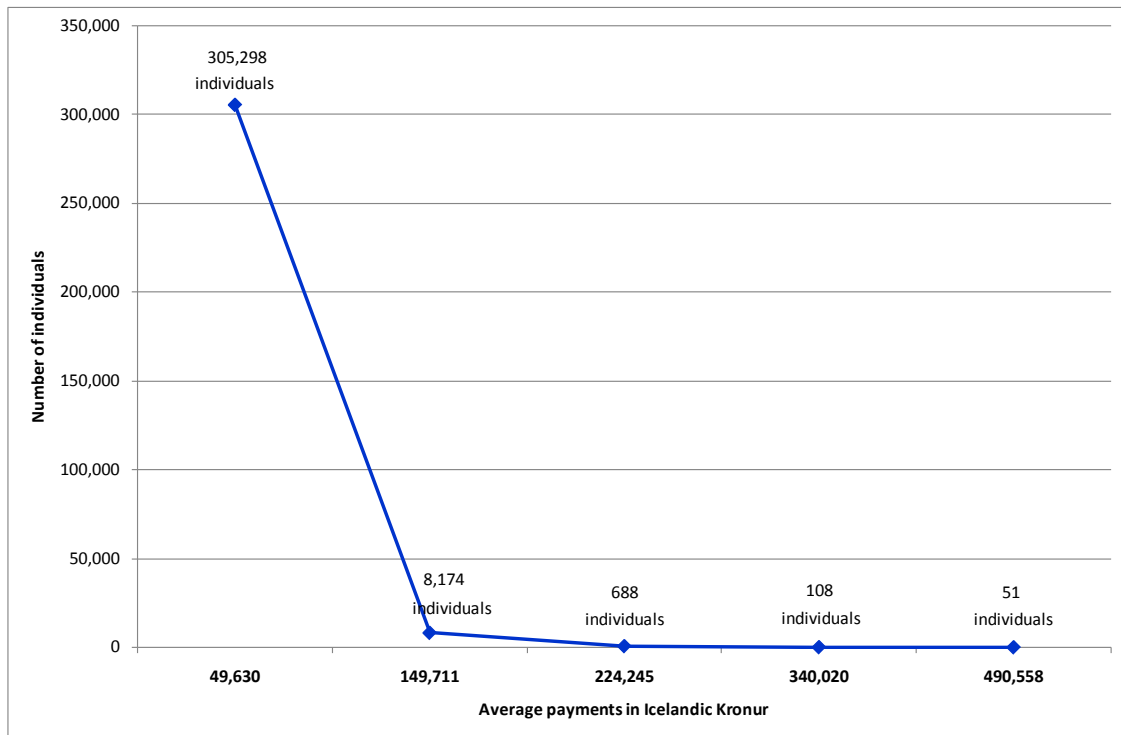


Figure 16: Out-of-pocket payments in the Icelandic health system in the year 2007. Source: Committee to explore the out-of-pocket payments in the health care service in Iceland (2009)

Unemployment increased in Iceland as a consequence of the economic crisis, which caused a threat to health as when people are faced with unemployment they have to think carefully about how they spend their money. Five months after the commencement of the economic crisis, the minister of health made some changes in the regulations regarding subsidising the cost of health care services to the unemployed. The new regulation added children under 18 and the unemployed to the same category as the elderly and disabled, which reduced the medical costs for these population groups by half. However, the unemployed had to prove that they had been unemployed for more than six months by presenting a certificate from the Directorate of Labour (Social Insurance Administration of Iceland 2009). Similar arrangements were introduced for pharmaceuticals, whereby the unemployed received the same price reductions as the elderly, children and disabled (Ministry of Health 2009a). These changes provide some solace in a society where unemployment has increased, but in order to secure equity in health the whole health system needs to be revised, especially the out-of-pocket payment mechanism.

5.6 Discussion

5.6.1 The Grounded Theory

Iceland was hit by a triple crisis: a banking crisis, a currency crisis and a political crisis following the collapse of all the major banks, whose worth was at least tenfold the national GDP. As the crisis hit, the authorities were caught unprepared and, together with the citizens, entered a state of shock, categorised by limited information, time pressure and “fumbling” actions. When reality started to set in, the urge to react appropriately emerged and a window of opportunity opened up for health system reforms. However, due to the authorities’ lack of preparation, transparency and supporting documents, as well as their disregard for fair participation, the opportunity for health system reforms in the first months of the crisis was not successfully utilised. These failures in good governance practices, together with weak stewardship, demonstrated the government’s incapability to reach consensus oriented solutions, causing anger and frustration among many stakeholders. The emerging grounded theory of this study is presented in Figure 17.

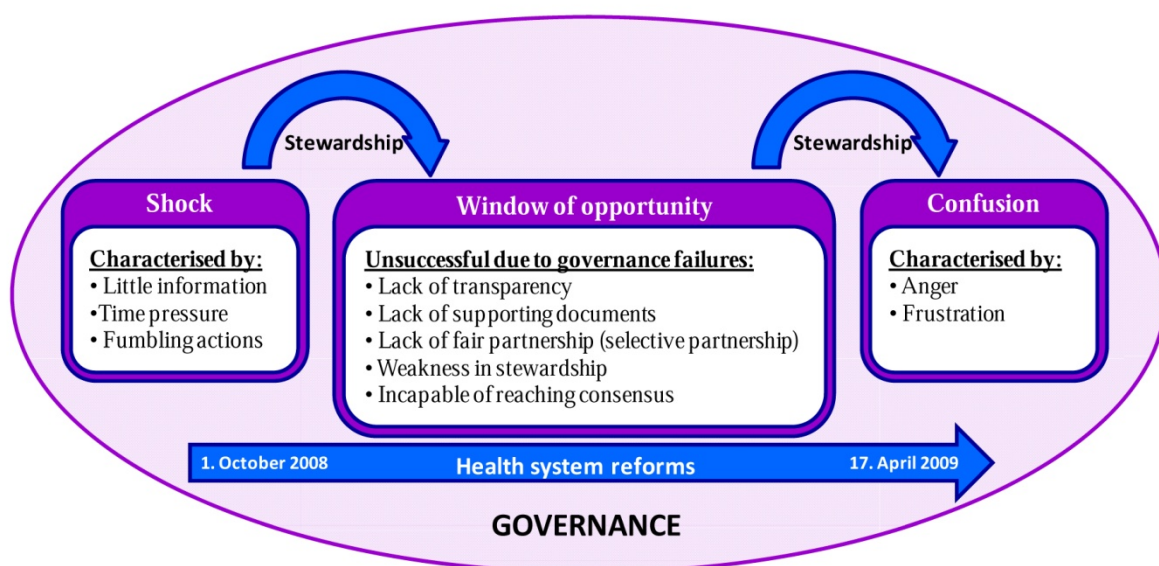


Figure 17: The grounded theory of the Icelandic case study

To test the validity of the theory, in relation to this particular case, the collected data was explored again to check if the statements from key informants, discussion in parliament and newspapers were consistent with the information presented in the emerging grounded theory above.

The economic meltdown in Iceland has few if any precedents, both in terms of the scale of the crisis and the type of country, which makes comparison difficult and therefore also the validation of the emerging grounded theory. However, the results are consistent with results from a qualitative case study under a similar setting; as Russia went through economic turmoil in the 1990s, health system reforms failed due to a lack of partnership, coordination and insufficient preparation, negatively affecting the system performance (Sheaff 2005). Moreover, the results are in harmony with studies suggesting dominant political ideologies to play an important role in public health policy making and actions (Wagner, Wollmann 1986; Walt 2006).

The government's conduct of the economic crisis suggests a failure in governance practices, according to definitions of good governance by UNESCAP and the World Bank (Sheng 2011; World Bank 2010c). The government was not accountable because of its lack of preparation and was therefore unable to respond immediately to the crisis. It did not work transparently and did not allow for fair participation (inequitable inclusion). Hence, it did not manage to reach consensus oriented conclusions. These working procedures further affected other aspects of governance, namely its effectiveness and efficiency.

There are several limitations to this study and results could differ if other data sources or a mix of other data sources were used or if it were performed by another researcher. As an Icelandic citizen and a former participant in the Icelandic health system, my presence in the interviews might have affected the key informants; it might have inspired them to express their opinions more freely or even caused them to be more reluctant to reply to my questions. It must also be kept in mind that, as an Icelandic citizen, I was personally affected by the economic crisis which might have affected my interpretation of the findings. However, it must also be emphasised that as an insider I might also have been able to find and gain access to information that an outsider might have found difficult to obtain.

5.6.2 The Grounded Theory and the research questions

The emerging theory was intended to answer how the minister of health and his Ministry involved stakeholders in the decision making process initially after the economic crisis commenced and who were the main influential actors.

In the first weeks of the crisis, given the state of shock, the staff at the Ministry of Health and its institutions, together with external consultants, were put under pressure. They were given limited time, in some cases only a few days, to come up with suggestions and plans for how to adapt the health system to the diminishing public expenditure on health. Under such time pressure, they did not succeed in preparing sound supporting documents, either in accordance with the guidelines from the Ministry of Finance (Ministry of Finance 2008) nor consistent with the recommendations from the World Health Organization given in relation to the economic crisis (World Health Organization 2009a).

It is generally accepted that a threat can be an opportunity if those with authority are accountable and respond to the threat by developing consensus oriented policies with participation from stakeholders, including citizens. In the Icelandic case, the minister of health did not manage to use the window of opportunity for reform. The minister applied selective partnership, as he only consulted with a narrow, handpicked group of stakeholders, people with similar opinions and those who potentially would benefit from the changes, deliberately or unwittingly forming an “elite” with the privilege of having more influence than others. It seems as if those negatively affected by the proposed changes were deliberately excluded from the decision making process and that, furthermore, ideas were concealed from them. This caused widely expressed anger among affected individuals/groups, health personnel, institutions and municipalities.

The decision making process lacked transparency and did not provide documents to support the proposals. This caused mistrust among stakeholders, who suspected the minister of health of concealing some underlying issues, involving his preference for selected organisations. The minister, who was in charge at the beginning of the economic crisis (from the Independence Party), used his authority in a top-down

attempt to introduce drastic changes to the health system within a short period of time. The haste in the decision making process, particularly involving the change of St. Josefsspitali hospital to a geriatric institution, therefore moving some of the operating theatres to Keflavik, could indicate that the minister of health was attempting to privatise the operating theatre without attracting too much public attention while the population was busy coping with the economic crisis. It was known from earlier discussions, both in the parliament and in the media, that a new private company was interested in running the operating theatres in Keflavik (Visir 2008b; National Broadcasting service 2009). The minister did not emphasise this clearly, possibly because privatisation in the health sector is not very popular among voters²⁶.

The Independence party's manifesto supports the privatisation of the health sector, which complies with the neo-liberalist ideology to increase the participation of the free market (Navarro 2007a; McIntyre, Mooney 2007). Since the party was in power at this time, and for the first time ever in charge of the Ministry of Health, it can be argued that the minister of health was going to use the opportunity of the serious national crisis to introduce controversial structural changes. According to liberals like Friedman, national shock is a convenient opportunity for radical societal changes, but they must be swiftly introduced before the society reverts to normal (Friedman, Friedman 1984; Klein 2008; 2007).

This study was also intended to explore whether the responses to the economic crisis affected health equity. The Icelandic health system is universal, whereby the state covers 83% of total health expenditure, while patients bear 17% of expenditure as out-of-pocket payments, which makes the system less likely to cause inequity based on ability to pay. However, unemployment increased as a consequence of the economic crisis, which threatened people's health and welfare because people have to prioritise when they have less capital. During the research period, the minister of health increased subsidisation for the unemployed and children under 18 years, which was a positive action for the unemployed and their families. Nevertheless,

²⁶ A survey among Icelanders shows that 81% want public hospitals and 76% publicly owned primary health care (Vilhjalmsson 2007).

with an out-of-pocket payment mechanism that discriminates against the type of disease, the probability of inequity in health still exists.

5.6.3 Governance practices and power dispersion

The power dispersion between the legislative, the executive and the judiciary of the Icelandic political system received increased attention following the economic crisis, particularly the party-political aspect of the executives. Ministers, who are the political heads of the executives, have to work within the framework of laws passed by the legislative part of the system, but they have substantial flexibility to “adapt” the acts through regulations. New regulations or amendments to older ones do not require approval from the parliament, which is the legislative part of the system.

The minister of health is generally not committed to consulting with stakeholders before making new regulations or changing older ones. Nevertheless, the minister does have to consult with relevant local authorities when deciding to merge health care facilities within the health region (Icelandic Parliament 2007b). According to the findings of this study, there was a lack of partnership in the decision making process related to the merging of institutions, as demanded by the Health Service Act.

It is the minister of health who, through regulations, decides the out-of-pocket payments for different health services (Ministry of Health 2009b; Icelandic Parliament 2007b; Icelandic Parliament 2008a). The only limitation is that governmental expenditure must be kept within the annual state budget, as approved by the parliament. By using regulations, it was possible for the minister of health, who was in charge when the economic crisis commenced, to implement hospitalisation charges without any further approval from the parliament. It was equally easy for the minister of health who took over after the government resigned to abolish those same fees only a few weeks after they were implemented. Both actions were not supported by any publicly available background documents such as economic evaluations and seemed first and foremost to be based on different political ideologies.

How Iceland will recover from the current economic crisis, and how the crisis will affect the nation’s health in the long run, remains to be seen. The Icelandic people

have had a good education system and have enjoyed good public services in many areas, but at the same time some have been surprised at this state of affairs, considering the obvious flaws of the political system (Wade 2009). A short overview of the situation in Iceland in February 2011 is given in Appendix 9.

5.7 Conclusion

Economic crises are likely to cause distress in affected societies and are a major challenge for governments and policy makers. However, to avoid unnecessary torment, good governance practices are essential. Transparency, with sufficient analytical work, and broad participation with all stakeholders, is fundamental.

As economic crises occur regularly and do usually have some preceding warning signals. Governments should be able to monitor the economic- and financial situation and trends and if accountable, be able to respond early to an upcoming crisis by preparing public institutions, including the health sector. Nevertheless, even though economic crises can be stressful, it is important to give sufficient time to undertake necessary analytical work, to make economic evaluations and to allow for open and honest discussion about the causes and consequences of policy proposals. Good governance practices, together with strong stewardship, increase the probability of consensus oriented solutions, which ultimately make the whole system more efficient. Economic crises are a critical test on health systems' resilience; how governance practices influence the ability of the health system to adapt to changes and re-organise without causing stress, confusion or anger and without changing its basic structure and function.

Chapter 6: Governance and Health Systems III: understanding the impact of governance on health system financing reforms in an upper-middle income setting – the case of Malaysia 1995 - 2010

6.1 Introduction

Health financing reforms have become one of the central issues for governments in countries at all income levels. Although health expenditures are associated with countries' economic strengths, other factors also play a role such as nations' background and history, dominant political ideologies, the quality of governance practices and the degree of international influences (McIntyre, Mooney 2007; Lee, Goodman 2002).

Although health system financing policy making falls under the purview of governments, policies in low and middle income countries have been under the influence of the World Bank for decades. One of the World Bank's reports "Financing health services in developing countries: an agenda for reform," published in 1987, had a strong impact on health financing strategies, especially in low and middle income countries (World Bank 1989). The report promoted the introduction of user fees in low and middle income countries, particularly for individual health care services. The recommendation was based on the principle of health care as a commodity and users as consumers purchasing private goods and services (World Bank 1989). International evidence has now shown that out-of-pocket payments are the most regressive form of health system financing, causing increased inequity and the impoverishment of households without any significant improvements in efficiency (McPake 1993; Gilson, Russell & Buse 1995; Gilson 1998; World Bank 2006; McIntyre et al. 2006).

Another equally influential report from the World Bank was titled "World development report 1993: investing in health," which introduced further perspectives on health

system financing reforms (World Bank 1993b)²⁷. This report focused on efficiency and cost-effectiveness analysis to allocate resources; it encouraged governments to revise their health financing policies, making health system financing sustainable and securing universal coverage of health care services. Low and middle income countries were urged to focus more on cost-effective public health interventions and to provide minimum packages of essential clinical services, leaving other clinical services to the private sector with costs to be born through insurance schemes (World Bank 1993b). Governments were advised to extend the insurance coverage to include the poor and to compensate for problems related to uncertainty and market failures with the aim of eliminating inequalities (World Bank 1993b).

The increase in private-for-profit health service providers, without a simultaneous introduction of insurance mechanisms, has placed financial burdens on individuals and households in countries of all income levels. This course of events has stimulated international organisations to revise health system financing and has turned their attention towards sustainable prepayment mechanisms with equitable revenue collection, risk pooling and effective purchasing of health care services from both public and private providers (World Bank 2006; Fifty-Eighth World Health Assembly 2005; World Health Organization 2000). The World Bank now claims that systems funded through general taxation or mandated social insurance mechanisms have the potential to be the most equitable form of health care financing, providing universal access to health care services (World Bank 2006). Health system financing is discussed in more detail in Appendix 10.

Ultimately, local governments are responsible for the efficient use of public funds and other resources. However, it is also their responsibility to stimulate and support equity among citizens. These two responsibilities, to establish efficient and equitable health systems, present a challenge, as these objectives can be mutually exclusive - if equity is an objective, maximising average health outcomes from a given budget might be a challenge (Mooney 2003). Equity is a concern in most societies and

²⁷ Some scholars believe the World Bank has been under strong influence of dominant ideologies of the ruling classes of the world, especially in the United States and the United Kingdom (Banerji 1999; Navarro 2007b).

ordinary citizens may find it unfair if people are unable to access health care services because of social and economic inequalities (Daniels 2008). An appropriate balance between equity and efficiency is a major challenge for governments and more research is required into the development of equity oriented health system financing strategies, especially in low and middle income countries (McIntyre et al. 2006).

The aim of this study was to explore how health system financing reforms are associated with governance quality, as outlined by the United Nations Economic and Social Commission for Asia and the Pacific UNESCAP (Sheng 2011). The purpose was to gain a better understanding of the governance leverage on health system financing reforms over time and to establish the identity of the main actors in the decision making processes of such reforms. The main research questions were:

- How does governance affect implementation of decisions with regard to health system financing reforms?
 - Have various requests of different ethnic or socio-economic groups been taken into consideration?
 - Have stakeholders been involved and who have been the key influential actors?

Reforms, however, may span a considerable period and can be influenced by many factors, one of the most notable of which is the dominant political ideology at any given time. In this last regard, a country with a stable dominant political ideology was appropriate. Malaysia was ideal in this respect - the country has long been under the leadership of one major political party (in cooperation with smaller parties).

Additionally, Malaysia was a low income country when it became independent in 1957, but has since enjoyed rapid economic growth. It is, however, grappling with several of the issues described above with regard to health care funding and coverage and has instigated reforms that include elements of privatisation.

6.2 Background to Malaysia

Malaysia is a country in South-East Asia comprising Peninsular Malaysia and the states of Sabah and Sarawak on the island of Borneo. Malaysia gained

independence from Britain in 1957 and at that time had a similar health and development profile to most of the countries in Asia and sub-Saharan Africa that gained independence within the same decade. Today the country is a constitutional monarchy with a non-elected upper house and an elected lower house, allowing for many political parties. The biggest party is the United Malays National Organisation (UMNO), which has ruled the country ever since it became independent. Malaysia is composed of 13 states and three federal territories with a total land area of 330,252 square kilometres. The population of Malaysia in 2006 was just over 26 million people, with 68% of the nation living in urban areas (World Health Organization 2010). The population consists of 65% Bumiputera²⁸, which embraces the indigenous people of the Malay Archipelago, 26% Chinese and 8% Indian (Selvaraju 2006).

In 1971, after a serious ethnic riot followed by a political crisis that forced the prime minister to step down, a New Economic Policy (NEP) was launched. The most important stated objective of the NEP was to unite the nation, focus on economic growth, reduce absolute poverty irrespective of race and reduce disparities between socio-economic groups (Economic Planning Unit 2008a). However, the NEP's intention was to favour Bumiputeras, the majority ethnic group. Indeed, one of the policy targets was to help Bumiputeras' own at least 30% of all enterprises.

In 1983, the Malaysian government announced its privatisation policy (Economic Planning Unit 2008b). The aim of the policy was to facilitate the country's economic growth, reduce the administrative and financial burden of the government and to lower public spending (Lit 2008). The government's general philosophy was to open up the free market as a way to "improve efficiency and productivity" (Economic Planning Unit 2008b).

The trend in Malaysia's Gross National Income (GNI) has been impressive, seen in a global context, as summarised in Figure 18. The emphasis on poverty eradication has, according to official documents, also been successful - poverty diminished by

²⁸ Bumiputera means "the sons of the soil". The term is used for aboriginal Malaysians and ethnic Malays (Ghee, Gomes & Rahman 2009).

almost 70% between 1990 and 2002 (Economic Planning Unit 2005). Nevertheless, the downside is that, over the same period, income inequality has increased in Malaysia.

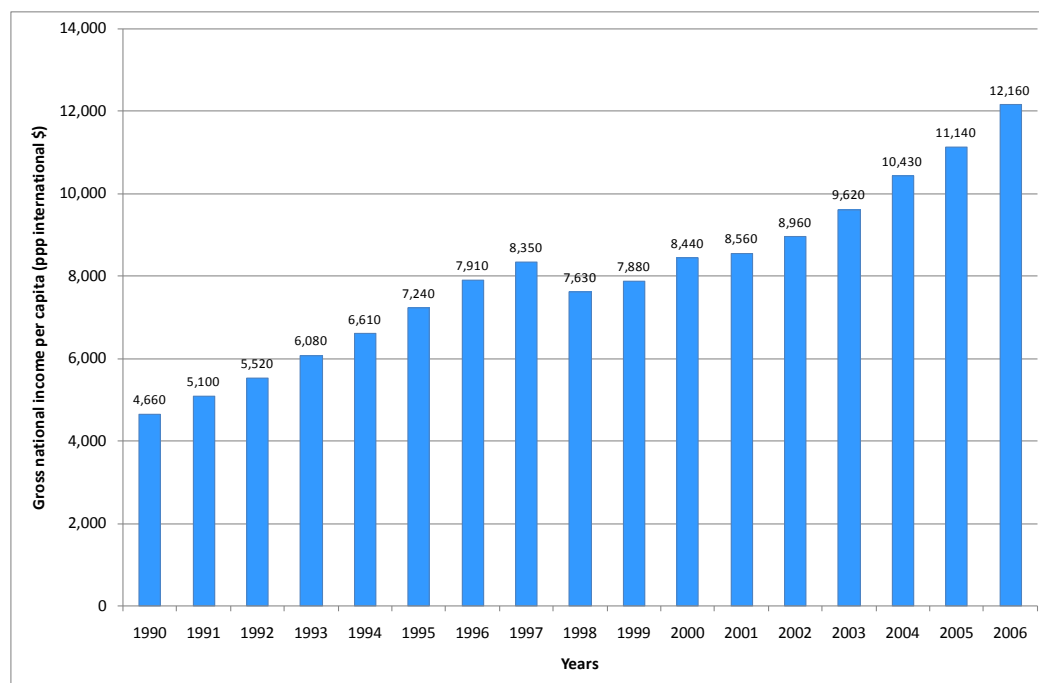


Figure 18: Gross National Income per capita (ppp International \$) in Malaysia from 1990 to 2006. Source: World Health Organization Global Health Observatory.

6.2.1 The health system

The Malaysian health system is administered through four different ministries. The Ministry of Health is the main health care provider, while the Ministry of Higher Education, the Ministry of Defence and the Ministry of Rural and Regional Development (Hospital Orang Asli²⁹ Gombak) provide health care for specific groups (Ghani, Yadav 2008). The Ministry of Higher Education is responsible for medical education and provides health care at various teaching hospitals. The Ministry of Defence has an Army Medical Corps that provides health care for service personnel and their families. The Ministry of Rural and Regional Development provides health care services to aboriginal communities (Orang Asli). Malaysian health care provision is, however, quite well integrated. The Director General for Health is

²⁹ The name of one of the aboriginal tribes in Malaysia.

responsible for the overall provision of health care services and the health of the nation (Ghani, Yadav 2008). Every state has its own health director, who is accountable to the Director General. The states are again divided into districts with district health officers. The health districts are further subdivided into rural health units that are supported by several community clinics (Ghani, Yadav 2008). The rural health services provide primary health care and are interconnected through a referral system. Patients are referred from the primary care level to district hospitals and further to the state and regional hospitals and finally to the general hospital in Kuala Lumpur if necessary (Leng, Barraclough 2007; World Health Organization 2009b).

After its independence, Malaysia at first kept the health system as a national health service, funded through taxation, except for primary care in the urban areas which was provided by both the private and public sectors (Leng, Barraclough 2008). After the government published its privatisation policy in the 1980s, the number of private hospitals started to increase and the Malaysian health system became a two tiered health care system. In 1980, private hospital beds comprised 6% of all hospital beds in Malaysia; by 2003 they made up 26% of all hospital beds. The increase in private hospital beds, as an absolute number and as a percentage of all hospital beds, is shown in Figure 19.

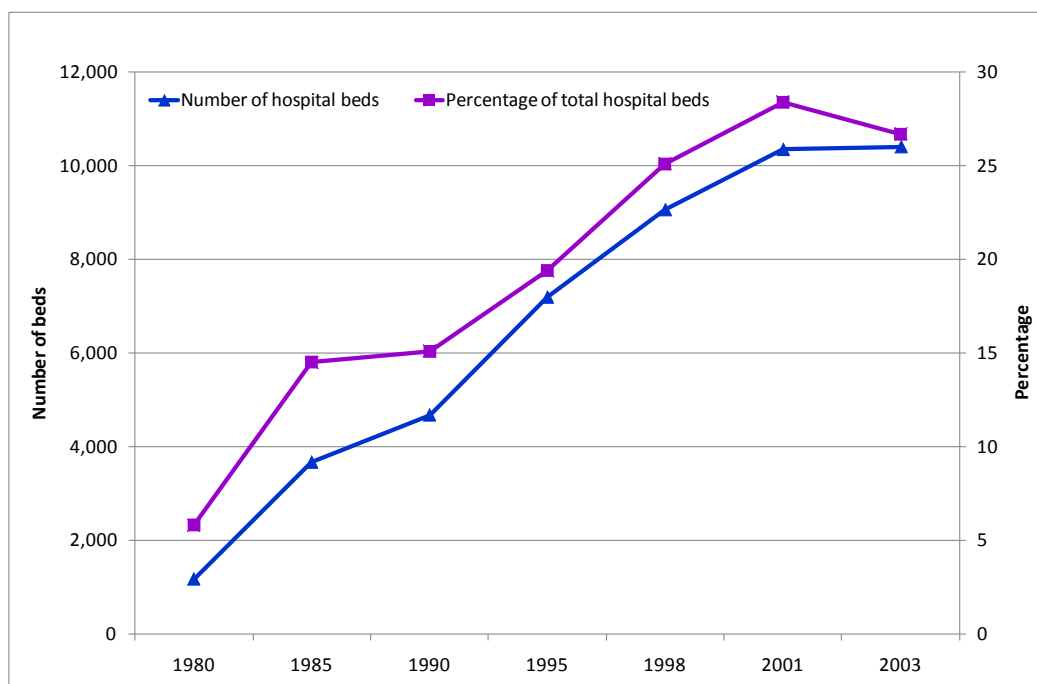


Figure 19: The increase in private hospital beds from 1980 to 2003, presented as absolute numbers and as a percentage of total hospital beds. Source: Leng, Barraclough (2008)

Although the number of private hospital beds has increased, the public sector is still the dominant provider of beds, providing 77% of the total in 2005 (Ramesh 2007). Despite its size, the public sector employs only 54% of physicians in Malaysia, while the private sector employs 46% (Ramesh 2007). In the two tiered health system, migration of health personnel from the public sector to the private sector is a serious and an unresolved problem. Specialists and other highly experienced health personnel often resign from the public sector in order to work in the more lucrative private sector (Economic Planning Unit 1996a; Lit 2006; Quek 2004).

This privatisation process has been criticised for a lack of transparency and the absence of competitive tendering (Barraclough 2000; Chik 2000; Khoo 2000; Quek 2004). It has been pointed out that politically well-connected organisations have had a great influence over the privatisation process and have benefited from it. Moreover, details about the privatisation process have been kept from the public on the grounds that they fall under the Official Secrets Act in force in Malaysia³⁰. This

³⁰ There is an Official Secrets Act in force in Malaysia, which limits distribution of official information and restricts the civil servants' freedom to give information (Malaysian Parliament 1972)

opacity and secrecy is evident in a number of important developments. In 1993, the government's pharmaceutical procurement and distribution centre (The Government Medical Store) was privatised (Economic Planning Unit 1996a). The buyers in that case also won a contract to manufacture and distribute drugs to all government hospitals for 15 years. Similarly, the Government Medical Store was sold to Remedi Pharmaceuticals, owned by United Engineers Malaysia, a company linked to the United Malays National Organization (UMNO), the ruling party (Gomez, Jomo 1999). Two years later, in 1995, hospital support services were also privatised, again with a 15 year service contract that covered cleansing, linen and laundry, clinical waste management, biomedical engineering maintenance and facility engineering maintenance for all Ministry of Health hospitals and clinical facilities (Economic Planning Unit 1996a). One of the companies that benefitted was, at that time, owned by the then prime minister's son (Leng, Barraclough 2008).

The stated goal for the privatisation of hospital support services was to improve efficiency. According to figures from the Finance Division of the Ministry of Health this goal was not met. Expenditure on hospital services increased by 330% from 1996 to 1997 or from RM143 million (US\$54 million³¹) in 1996 to RM468.5 million (US\$174 million) in 1997. This increase could not be explained by increased services or improvements in quality (Khoon 2000). And in a parliamentary debate it was pointed out that the privatisation had caused a 250% increase in management costs at one University Hospital (Chik 2000). In another example, the National Heart Institute was corporatized with the aim of expanding and providing better services in cardiothoracic medicine while attracting and retaining experienced medical personnel (Economic Planning Unit 1996a). This stimulated marked disquiet from some about inequity in the Malaysian health system (Barraclough 2000).

6.2.2 Health care financing

Total expenditure on health was 4.3% of the Gross Domestic Product (GDP) in 2008, which is low compared to other upper-middle income countries. Some researchers have argued that the Malaysian health system is underfunded (Lit 2008). On

³¹ Currency rate RM 1 = \$ 0.31 from XE The World's Favourite Currency Site, accessed in August 2010

average, upper-middle income countries spent 6.4% of their GDPs on health in 2008 (World Health Organization 2010). As an example, Costa Rica, an upper-middle income country that is sometimes cited for its success in improving population health, (Sen 1999), spent 8.2% of its GDP on health in 2008. Gross National Income (GNI) in Costa Rica at that time was 79% of the Malaysian's GNI (USD\$11,040 vs. USD\$13,900). Costa Rica's per capita total expenditure on health was USD\$936, while Malaysia's was USD\$620. The government covered 77% of total health expenditure in Costa Rica, while the Malaysian government covered 44%. Although life expectancy has improved considerably in Malaysia (73 years in 2008), a country like Costa Rica, which is poorer when measured in GNI, has improved faster and has a higher life expectancy (78 years in 2008) (World Health Organization 2010).

Cost sharing, in terms of government and private expenditure is illustrated in Figure 20. Although quite static, the governmental part has been declining over the last few years, with a 44% governmental share in 2007 and 56% covered through private expenditure (World Health Organization 2010).

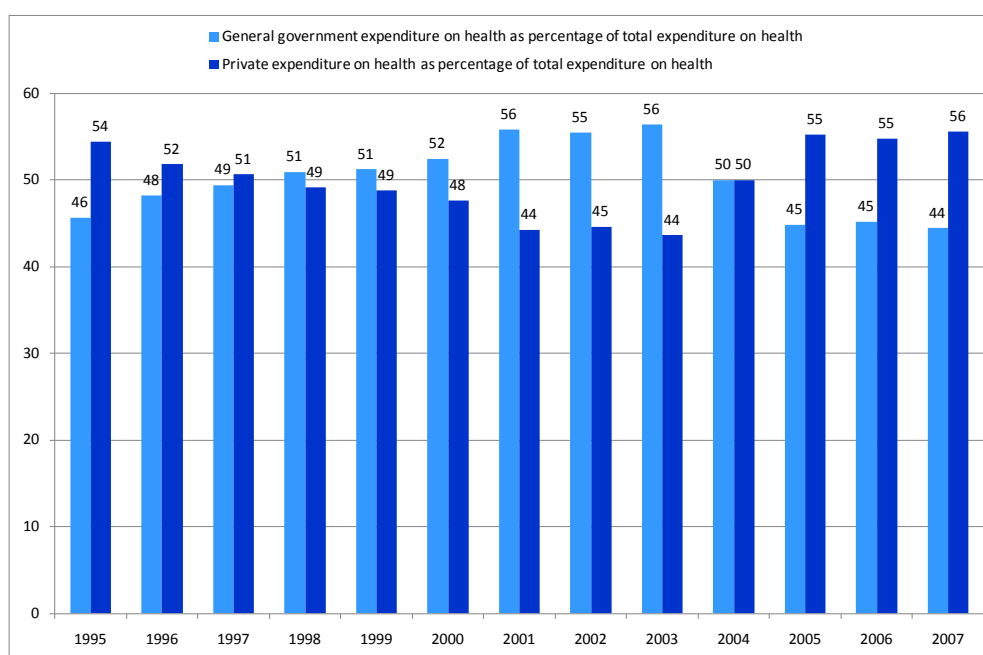


Figure 20: Governmental and private spending on health care as percentages of total health expenditure. Source: WHO Global Health Observatory.

The main source of private expenditure was out-of-pocket payments, which has been declining slowly at the same time as private pre-paid plans have increased. This aspect of cost sharing is described in Figure 21.

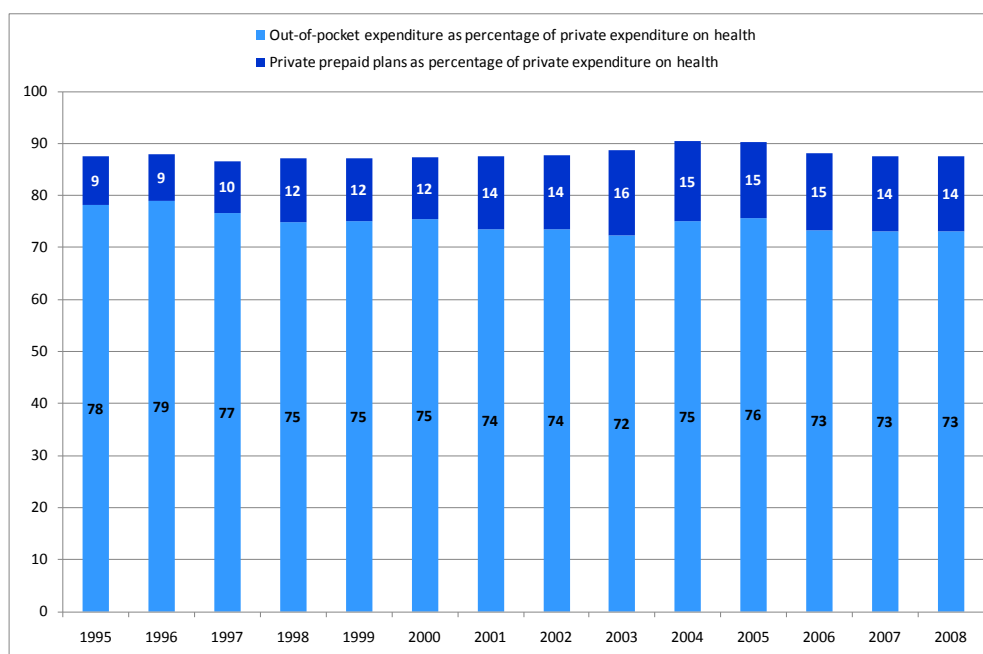


Figure 21: Cost sharing of private health expenditure between out-of-pocket payments and prepayment plans from 1995 to 2008. Source: WHO Global Health Observatory.

6.2.3 Equity in health

Equity in health is often a fundamental objective of health system reforms. Financing of health systems can be essential in this regard (Wagstaff, Van Doorslaer 2000). The two tiered Malaysian health system has a private health care sector for self-paying patients and public health care that is highly subsidised for the worse off (Yu, Whynes & Sach 2008). It could thus be argued that the Malaysian health system is equitable. Closer examination indicates that the situation is not as simple as that. Only 25% of Malaysians use private health care services but the sector employs half of all registered doctors in Malaysia. One consequence is that while some private urban clinics are under-utilised because there are no waiting times and patients receive good treatment, the workload is too heavy for some public health clinics in which overworked and underpaid nurses and doctors often struggle (Quek 2004; Rajakumar 2007):

“Health care is virtually free to anyone willing to wait, and to overlook the shabbiness of facilities and shortage of staff”

Rajakumar (2007, page xvii)

There are also sub-populations in Malaysia who do not receive the health care services they need as a result of financial, geographical or cultural barriers (Lit 2006). Among them are the Orang Asli and other indigenous Malaysians, the mentally ill, HIV/AIDS patients, illegal immigrants and some elderly (poor or socially isolated). The Orange Asli population is small, accounting for only 0.6% of the total population (147,412 in 2003). They are not commonly consulted in policy making and, for a century, have been treated as “children” and often categorised as a community “requiring large doses of governmental support in order to assimilate them into **mainstream** society” [emphasis added] (Nicholas, Baer 2006, p:126). Although the poverty rate has reduced in Malaysia, it is still high among the Orang Asli (Nicholas, Baer 2006). The Orang Asli are still afflicted with diseases that are not often seen in the rest of Malaysia today, such as skin infections, worms, diarrhoea and goitre. They are more vulnerable to malaria than other Malaysians and in 2001 they represented 51.5% of the malaria cases recorded in Peninsular Malaysia (Nicholas, Baer 2006). Yet the Orang Asli often live far away from public clinics. And although 69% of rural dwellers live within three kilometres of a health care facility, many facilities in remote areas do not always have a qualified doctor (World Health Organization 2009b; Quek 2004).

6.2.4 Health outcomes

Despite relatively low health expenditure, health outcomes in Malaysia have improved significantly in recent decades (World Health Organization 2000). From 1990 to 2008, the infant mortality rate declined from 16 to 6 per 1,000 live births; the under-five mortality rate fell from 18 to 6 per 1,000 live births and life expectancy at birth improved from 71 years to 73 years (World Health Organization 2010). But Malaysia, like other South-East Asian nations, is experiencing an epidemiological transition in which the disease pattern is shifting from infectious diseases to non communicable diseases and chronic illness, in particular, diabetes, heart disease,

strokes and certain types of cancer (World Health Organization 2002). In 2002, non-communicable diseases were responsible for 71% of deaths, communicable diseases caused 20% of all deaths and injuries accounted for 9% (World Health Organization 2010). Malaysia has also experienced an increase in lifestyle related diseases, such as sexually transmitted diseases (including HIV/AIDS) and asthma, in addition to increased risk from environmental pollution (World Health Organization 2009b). A number of food poisoning episodes have been reported in Malaysia, making food safety a prominent public health issue, especially in schools where the majority of outbreaks have occurred (World Health Organization 2009b).

6.3 Method

6.3.1 Study design

The research question required a qualitative analysis to be undertaken. As limited research exists in this area, a case study was considered well suited to contribute to an increased knowledge of possible pathways through which governance might affect health systems. A case study design is suited to sustained in-depth analysis where the aim is to examine and explain complex links, interactions and relationships in a real life context (Yin 2009). The approach is based on compiling multiple sources of evidence to examine the relationship; a working procedure that requires continuous interaction between the research questions and the data being collected, as the analysis is not based on routine data collection (Yin 2009). The case study method was therefore appropriate to investigating the relationship between governance and health system financing reforms in Malaysia.

To develop and implement policies is a highly complex process, which involves several actors and organisations (Walt et al. 2008). Policy analysis, which can be used in both retrospective and prospective analysis, can provide a tool to describe the interconnections and interactions between actors and organisations. This case study is therefore a policy analysis based on frameworks that have been widely used for health system policy and reform analysis (Gilson, Raphaely 2008).

6.3.2 Data

Access to information and data is somewhat limited as a result of the Official Secrets Act (OSA) in Malaysia that prohibits dissemination of any information that has been classified as an official secret (Malaysian Parliament 1972). Consequently, the results of several apposite surveys, research projects and consultancies in Malaysia have not been released due to the Official Secrets Act (Karol Consulting 2006).

As the researcher, and an outsider, I faced two major hurdles. The first was access to the range of data sources to undertake the policy analysis and the second was the ability to interpret the information through a contextually relevant and culturally appropriate lens. The first limitation was apparent in the lack of balance between contemporary, historical and political texts available in English and Bahasa Melayu (BM), with a much heavier weighting in favour of BM. Although English is widely spoken, BM is the official administrative language and the language of government. Notwithstanding, there is a significant body of literature in English and the national media uses both languages as a means of ensuring Malaysia's place on the regional and international stage. The second hurdle was related to interpretation of the information collected. This was overcome with the use of key informant interviews. These not only provided primary data but also supplied the contextual explanations for various policy decisions. Key informants also gave advice and direction regarding the choice of relevant documents. Finally, a preliminary draft of the analysis and report was reviewed by a Malaysian health system expert who provided detailed feedback, again to ensure that content was accurately interpreted.

6.3.2.1 Secondary data

Laws and regulations affecting issues related to health system financing were examined. The database CLJ Law³², a network that provides access to data covering the Malaysian legal system, was used to search for relevant laws and regulations. With access to the CLJ-Law database, provided by Monash University, there were no restrictions in identifying relevant laws.

³² It is unknown what CLJ stands for. The information was not available on the company's website and an e-mail sent to the contact given on the website asking what CLJ stands for did not receive a reply.

Policies related to health system financing, are not dealt with in any single government publication (at least not in publicly available documents). The subject is however an integral part of the "Malaysia Plans" - five year national strategies - that are publicly available (and were thus included in the analysis). The plans are comprehensive, embracing all subjects deemed to be important to society including health, but from the beginning they have had a considerably economic focus.

Governance indices, provided with open access by the World Bank, were used to assess the quality of Malaysian governance.

Health statistics were obtained from the World Health Organization's database and from the results of the National Health and Morbidity Survey conducted in 2006 by the Ministry of Health in Malaysia. The results are presented in two volumes that were available at the Global Public Health office at Monash University, Sunway Campus.

An understanding of contemporary debates about health system financing was informed through examination of newspapers in English and websites run by diverse associations active in health system financing discussions and controversies. Two newspapers were available; the New Strait Times and The Sun. They were examined on a daily basis in April and May in 2010. Three associations with websites that are involved in health system financing discussions were identified and included in the analysis: (i) the Coalition Against Healthcare Privatisation; (ii) the Malaysian Medical Association; and (iii) the Association of Private Hospitals of Malaysia.

Political and economic information (for a better understanding of contextual issues) related to health system financing policy making was gathered from the Malaysian Parliament's website, the Ministry's of Health website and The Economic Planning Unit website under the direction of the Prime Minister's Office.

This secondary data was mutually triangulated with primary data from interviews with key informants involved in policy issues.

6.3.2.2 Key informant interviews

The sampling was purposive, starting with key informants who had been involved in health financing decision making processes and who had been identified through official documents, reports and referral by research participants (snowball sampling). Ten individuals were approached via e-mail with an attachment, "Participation Information Sheet" (Appendix 11), requesting their participation in the research. Seven individuals replied and agreed to participate and meetings were arranged via e-mail. Three individuals did not reply and were not contacted again. In order to protect the identity of the key informants, who emphasised the importance of anonymity, no information will be given about their identity except the fact that they all worked within the public sector and/or within higher education institutions. In this context, it is important to note again that there is an Official Secrets Act in force in Malaysia, which limits civil servants' freedom to give information (Malaysian Parliament 1972). An overview of the data used in this study is given in Table 10.

Table 10: An overview of data used for the policy analysis.

Data Sources	Type of data	Purpose*
English publications from the Malaysian health system and Malaysia in a historical context.	Two main books were consulted: (i) Health Care in Malaysia (Ghani, Yadav 2008) and (ii) Health Care in Malaysia: the dynamics of provision, financing and access (Leng, Barraclough 2007). In addition to these books, <i>Sickness and the State: Health and Illness in Colonial Malaya, 1870-1940</i> (Manderson 1996) and <i>Multiethnic Malaysia, Past, Present and Future</i> (Ghee, Gomes & Rahman 2009) were read to gain a better understanding of the (medical) history of Malaysia.	Data for the background information as well as for the policy analysis.
The 7 th , 8 th , and 9 th Malaysia Plans, 1996 – 2010.	Policy papers available from the Official Portal of the Economic Planning Unit under the Prime Minister's Department.	Data for content and context analysis of policies related to the financing of the health system.
Approved acts related to the financing of the health system.	Acts approached through the CLJ Law database - a network that provides access to data covering the Malaysian legal system.	Data for content analysis of policies related to health system financing.
The World Bank.	Governance indicators available on the World Bank's website.	Data used to evaluate the governance quality.
World Health Organization.	Health statistics and other information on the Malaysian health system found on the World Health Organization's website.	Data for the process analysis as part of the problem stream.
National Health and Morbidity Survey 2006.	Results from the National Health and Morbidity Survey in 2006 were available in two volumes of hard copies.	Data for the process analysis as part of the problem stream.
Daily local newspapers.	Newspapers in English: <i>New Strait Times</i> and <i>The Sun</i> , published in April and May 2010.	Data for the process analysis as part of the politics stream.
Open access websites in Malaysia.	Online information on the political and economic system in Malaysia, the governmental turnover and the ideologies of the political parties. Gained from the Malaysian Parliament's website, the Ministry of Health's website and The Economic Planning Unit website under the Prime Minister's Office.	Data to improve the understanding of the political situation and political ideologies used for process analysis as part of the policy stream.
Open access websites from free associations.	Associations participating in discussions around health system financing: (i) the Coalition Against Health Care Privatisation; (ii) the Malaysian Medical Association and (iii) Association of Private Hospitals of Malaysia	Data for the process and actor analysis.
Key informants	Interviews held at the individuals' offices. They were not recorded, but memos were written after the meetings.	Data for the process and actor analysis.

*See also section 6.3.4 Analytical framework

6.3.3 Ethics

Ethics approval was obtained from the School of Health Sciences and Social Care Research Ethics Committee at Brunel University (Appendix 12). The internship was hosted by Global Public Health at the Monash University Sunway Campus. This role did not require ethics approval (Appendix 13).

Precautions were taken to maintain the confidentiality of participants. E-mails to and from the participants were deleted after the meetings and interviews were not recorded according to all participants' request. Detailed notes were written after each meeting and stored on my personal computer with a password. A backup was kept on a disk stored in a safe only accessible to me. As soon as this thesis has been approved by Brunel University, all such material will be destroyed.

6.3.4 Analytical framework

At a broad level of analysis the "Policy Triangle" framework appeared to be applicable (Walt, Gilson 1994) as this framework encapsulates the content, context, processes and actors involved in the formulation of a policy (Walt et al. 2008). The framework was developed for health related policy making and can be applied to low, middle, and high income countries (Gilson, Raphaely 2008; Walt et al. 2008; Buse, Mays & Walt 2005). Figure 22 gives an overview of the policy triangle and the context within which it was used in the analysis for this case study.

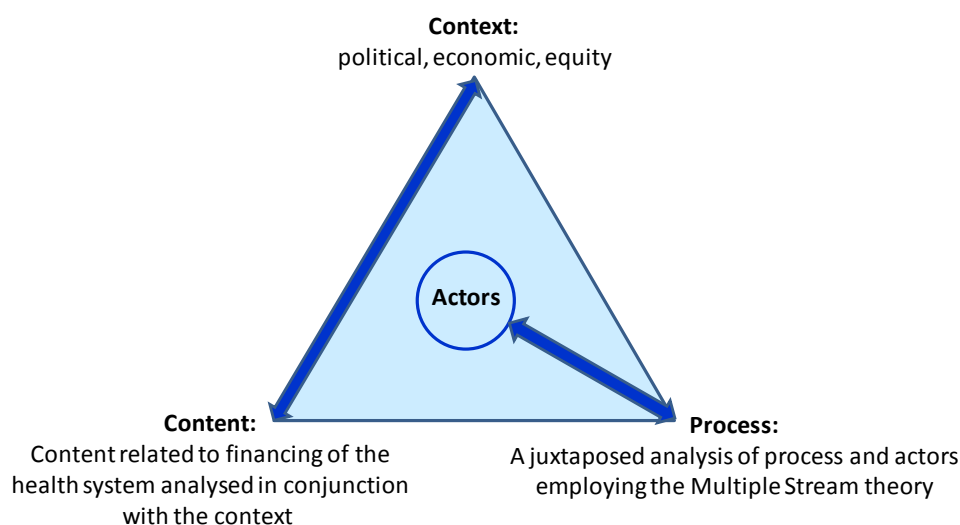


Figure 22: The policy triangle framework. Adapted from Walt, Gilson (1994).

However, the policy triangle framework does not provide a systematic analytical tool to analyse processes. Therefore a more dynamic framework was required. Policy processes are extremely complex phenomena that may involve diverse actors and encompass multiple levels of interacting institutions and interests. Accordingly, to analyse data systematically, minimise bias and to deepen the understanding of possible causality between governance and health system financing reforms, I examined bodies of work on approaches to analyse policy processes (Sabatier 2007; Walt et al. 2008). These included the established “stages” heuristic approach. This approach has though been criticised for focusing too closely on the individual stages in the policy process (agenda setting, policy formulation, policy implementation and policy evaluation) without identifying the causal drivers across stages (Sabatier 2007). Other analytical paradigms considered included the Punctuated-Equilibrium framework; originally developed to explain changes in legislation in terms of incremental change punctuated by brief periods of change when appropriate junctures arose (Baumgartner, Jones 1993). Thought was also given to the Advocacy Coalition theory which focuses on coalitions, actors and the competition and collaboration that can leads to policy change (Sabatier, Weible 2007) and the Multiple Stream theory (Kingdon 1995), which focuses on problems, policy and

politics. The Multiple Stream theory seemed particularly useful in this context (Kingdon 1995).

The Multiple Stream theory conceives of the policy process in terms of three streams - a **problem** stream, a **politics** stream, and a **policy** stream. The streams often operate independently of one another but, at critical points; a window of opportunity ("Policy Window") allows **actors** (policy entrepreneurs) to traverse and couple the various streams. If they are successful in this regard there may be a significant change in the relevant area of policy (Kingdon 1995). Figure 23 illustrates this conception.

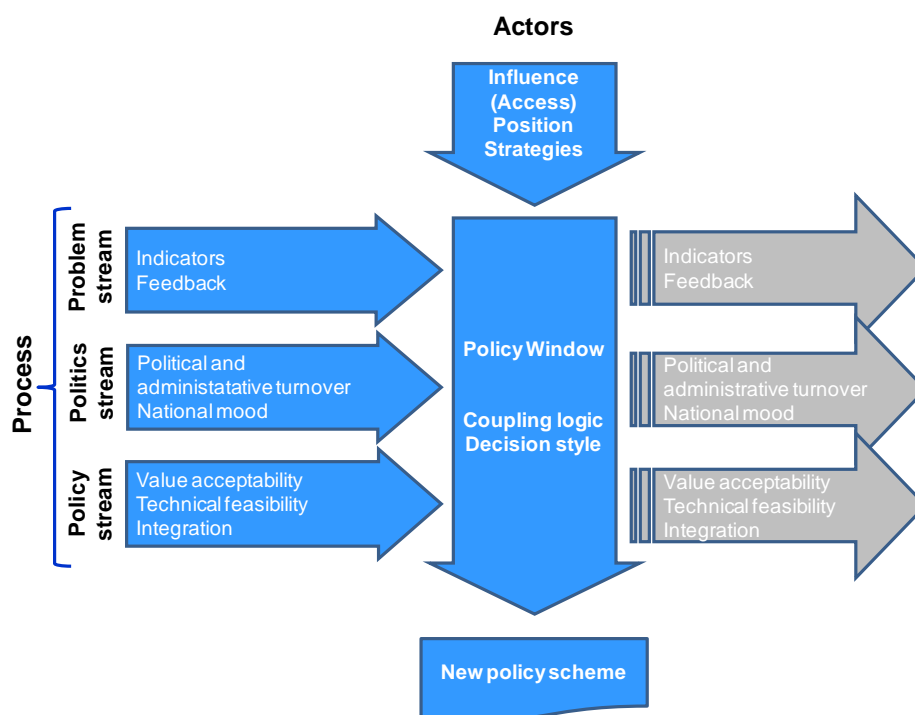


Figure 23: The Multiple Stream theory developed by John Kingdon (Kingdon (1995). Adapted from Zahariadis (2007).

The Multiple Stream theory provides a comprehensive analytical tool to help analysing the policy process, understanding how issues emerge on the policy agenda and how actors are involved in policy making. The problem stream includes measurable indicators of health status and stakeholder's concerns. To evaluate the problem stream, available health statistics were scrutinised; life expectancy and child

mortality data from the World Health Organization and health expenditures as well as out-of-pocket payments in different socio-economic groups available from a local survey. The politics stream embraces the broader political discourse within which policy is made, including discussions and solutions that have been pointed out as well as political turnover and the national mood. Political turnover and the national mood was assessed by studying public and private websites, studying national newspapers and interviewing a set of stakeholders which gave a picture of the national mood as perceived by them. The policy stream includes discussions and solutions that have been pointed out. Text books on the Malaysian health system and open access websites from the government and free association together with interviews with key stakeholders provided comprehensive data about proposals and solutions that had been pointed out and taken into consideration.

6.3.5 Timeframe

Policy evaluations require a timeframe that is long enough to cover at least one “policy cycle”. According to Sabatier, a decade or more is the minimum duration of most policy cycles, which he defines as the time from the detection of a problem until a revised policy has been implemented and a reasonable time has elapsed to conduct an evaluation of its impact (Sabatier 2007). Ten years were therefore considered to be a minimum timeframe for this analysis. But as the Malaysian government presents a comprehensive policy paper every five years, it was decided to use three policy papers – this meant an analysis over a 15 year period, from 1996 to 2010.

6.4 Results

6.4.1 Content and context

The first section of the “content and context” findings focuses upon Malaysian laws and regulations related to health system financing, partly addressing the first research question: “Have health financing reforms taken into consideration the various needs of different ethnic or socio-economic groups or other valid issues according to the relevant contexts?”. The second section reflects an analysis of the Malaysia Plans. The plans were analysed in the context of politics, the economy and

equity – a response to the second research question: “How have stakeholders been involved and who have been the influential actors?”.

6.4.1.1 Laws and regulations - content

A major feature of health financing Act in Malaysia is that health care obtained at public health care institutions is funded through general taxation, contributions from the Employee Provident Fund and the Social Security Organization in Malaysia plus co-payments from patients. The private health care sector, on the other hand, depends on out-of-pocket payments or provision via private insurance, which is still an under-developed market in Malaysia.

Payments for health care services received via public institutions and those by private institutions are governed by different laws and regulations. Payments for health care services within the public health care sector are governed by the Fees Act 1951 along with all associated amendments, regulations and orders that have been issued subsequently (Malaysian Parliament 1978). Payments for health care services at private institutions fall under the Private Hospital Act from 1971 and subsequent amendments, regulations, orders and related Acts.

(i) The public health care sector

Patients' co-payments for a visit to an outpatient centre or to a primary health care centre is RM1 (USD \$0.31) including examination investigations (Malaysian Parliament 1982). A visit to a specialist costs RM5 (USD\$1.57) including exploratory examinations, except for patients who are referred from private practitioners (where the examination fees are additional to the service fees).

In public hospitals, there are three classes of ward. Facilities vary in these classes, including the number of beds in rooms and food options. In the first and second class wards patients can choose their food but not in third class wards. It is claimed that everybody receives the same professional service, but charges vary according to the facilities and the degree of “luxury” provided (Health care specialist 2010). Co-payments are listed in Schedule B of the Fees (Medical) Order³³, issued in 2003

³³ Some regulations in the Malaysian system are termed “Orders”.

(Malaysian Parliament 2003). Examples of daily ward charges in a public hospital can be seen in Table 11.

Table 11: Ward charges in general and maternity wards and in executive wards according to the Fees (medical) (amendment) Order 2003.

CLASS	GENERAL AND MATERNITY WARDS		EXECUTIVE WARDS
	Non-air-conditioned (RM)	Air-conditioned (RM)	(RM)
FIRST CLASS:			
Single bed room	60 (\$18.86)	80 (\$25.15)	120-150 (\$37.72-47.15)
Two beds in a room	40 (\$12.57)	60 (\$18.86)	100 (\$31.43)
Three or more beds in a room	30 (\$9.43)	40 (\$12.57)	
SECOND CLASS	20 (\$6.29)	30 (\$9.43)	
THIRD CLASS	3 (\$0.94)	3 (\$0.94)	

Treatment and operations are billed in addition to the ward charges and the cost depends on the type of treatment. Exemptions are made for civil servants, government pensioners and their families and employees of local authorities. These groups enjoy 100% coverage.

The 2003 Order also introduced new tariffs for foreigners (excluding non-citizens that have resident permits or individuals who are married to a Malaysian citizen) who use public health care institutions (Malaysian Parliament 2003). They have to pay considerably higher amounts than Malaysians. General outpatient treatment for foreigners costs RM15 (USD\$4.71) and an outpatient treatment by a specialist (excluding detailed investigations) costs RM60 (USD\$18.86). Hospitalisation charges are also higher than for native Malaysians, as shown in Table 12:

Table 12: Hospitalisation charges for foreigners in Malaysia.

Number of beds in a room	Ward charges (RM)
Single bed	160 (\$50.29)
Two beds	115 (\$36.15)
Three or more beds	40-80 (\$12.57-25.15)

To verify whether these price schedules were followed at public hospitals, the Kuala Lumpur Hospital's website was examined - it confirmed that these fees are used in government hospitals (Hospital Kuala Lumpur 2010). A price list from the Kuala Lumpur hospital, as well as deposit requirements in case of hospitalisation can be found in Table 18 and 19 in Appendix 14.

In 2007, a new Order, introducing a full-paying-patient scheme was issued by the government. This allowed doctors working in selected government hospitals to use the facilities to treat private patients (Malaysian Parliament 2007). This new order was presented as an attempt to retain qualified doctors in public institutions. The patients pay in full for all the services, including registration and consultation fees, hospital fees, examination fees and procedure and treatment fees. There are no restrictions on who uses the full-paying patient scheme, except for the ability to pay; it is available to both Malaysian citizens and foreigners.

(ii) The private health care sector

In 1971, the government of Malaysia issued an Act called the Private Hospital Act (Malaysian Parliament 1971). This Act was intended to regulate private health care services and to ensure that no premises were used as private hospitals unless they possessed an appropriate licence. This Act was replaced by the Private Health care and Facilities Act in 1998 (Malaysian Parliament 1998), which empowered the relevant Minister to make regulations, including fee schedules, for all private health care facilities and services plus all health related facilities and services (Malaysian Parliament 1998). At that stage no regulations existed to control fees at private hospitals.

In 2006, eight years later, two new regulations, based on the Private Health care Facilities and Services Act were issued: (i) Private Health Care Facilities and Services (Private Medical Clinics or Private Dental Clinics) Regulations 2006 (Malaysian Parliament 2006b); and (ii) Private Health care Facilities and Services (Private Hospitals and Other Private Health care Facilities) Regulations 2006 (Malaysian Parliament 2006a). In these regulations there are schedules governing maximum professional fees at private health care institutions but no fee schedules for hospitalisation charges (such as the maximum charge per room). Consultation

fees for the first visit with a general practitioner can range from RM10-35 (USD\$3.14-11.00). First consultation with a specialist can range from RM60-180 (USD\$18.86-56.58). A follow up visit with a specialist can range from RM35 (USD\$11.00) to RM90 (USD\$28.29) (Malaysian Parliament 2006a). General procedure fees vary extensively depending on the treatment. There are many treatments listed in the schedule and some are highly specialised but, as an example, a caesarean delivery can cost up to RM2,365 (USD\$743.36) (Malaysian Parliament 2006a) and an individual psychotherapy appointment (not less than 45 minutes per session) can cost, according to the schedule, as much as RM220 (USD\$69.15).

On the website for the Association of Private Hospitals of Malaysia, the price lists for individual hospitals were reviewed. At KPJ³⁴ Johor Specialist Hospital, room rates range between RM65 (USD\$20.43) (six bed non-air conditioned room) and RM450 (USD\$141.44) (the VIP suite) per day. At the same hospital, a deposit required upon admission for a vaginal birth is RM2,500 (USD\$785.79) and for a caesarean RM5,000 (USD\$1,571.59) (KPJ Johor Specialist Hospital 2010). At Pantai Hospital in Kuala Lumpur, the price for a room ranges from RM98 (USD\$30.80) (four bed room) to RM928 (USD\$291.69) (the Premier suite) per day (Pantai Hospital Kuala Lumpur 2010). The deluxe delivery suite costs RM500 (USD\$157.16) per day.

Hospitalisation charges in Malaysia thus depend to a great extent on whether the provider is public or private, the type of treatments obtained and the ward class chosen by the patient. For example, the price for five days in hospital in a third class ward at a public hospital, which is the cheapest option, is RM15 (USD\$4.65). At a private hospital, the cheapest option for five days can be as much as 30 times that amount or RM400 (USD\$124) (Pantai hospital in Kuala Lumpur). The price for the best equipped room at Pantai hospital in Kuala Lumpur is RM4,640 (USD\$14,968) for five days (or 300 times the most inexpensive option in a public hospital).

To place these sums in perspective, the National Health and Morbidity Survey III reported that 39% of respondents had a monthly income under RM1,000

³⁴ No information was available on what KPJ stands for.

(USD\$310), of which 36% had a monthly income under RM500 (USD\$155) per month (Ministry of Health 2006). These figures indicate that a large part of the population cannot afford treatment at private hospitals and that some might even have difficulties paying the charges for the least expensive ward classes and treatment fees at public hospitals.

6.4.1.2 Malaysia Plans - content and context

Since 1966, the Malaysian government has published strategic five-year plans. These Malaysia Plans have from the beginning focused on economic issues with the aim of increasing the welfare of all Malaysian citizens and improving living conditions, especially among the poor in rural areas. The plans are comprehensive, embracing all subjects deemed to be important for society, including health. The content of the Malaysia Plans was analysed in relation to: (i) the political context; (ii) the economic context; and (iii) equity. An overview of the findings from this analysis is provided in Table 13 (more detailed analytical information can be found in Appendix 15).

Table 13: An overview of the content of the Malaysia Plans in the context of politics, the economy and equity.

Context	7th Malaysia Plan	8th Malaysia Plan	9th Malaysia Plan
Politics	To increase and accelerate corporatisation and privatisation of hospitals and medical services to improve efficiency in the health care system. The government announced it would gradually reduce its role in health care provision.	The private sector was encouraged to expand its service to complement the public sector. The government committed to improving regulations to ensure access for all at private health care services.	The government claims to continue to be the main provider of health care services for the nation; a statement which is contradictory to the statement in the 7 th plan. Greater individual responsibility said to be crucial to achieving better population health.
The Economy	A proposal for the implementation of a new health financing scheme, with the aim of reducing the financial burden of the public sector. Public health interventions highlighted in order to reduce future expenditure on curative health care.	The new health financing scheme that was not implemented as intended in the 7 th plan reappears in the 8 th plan. The plan recognises that, in order to ensure quality health care at a reasonable cost in both public and private health care systems, a new health financing mechanism is needed. A new health care financing scheme is set to be introduced to provide consumers with a wider choice in purchasing health services from both the public and private sector.	The new health financing scheme was not implemented as intended in the 8 th plan, so reappears in the 9 th plan with the stated aim to enhance accessibility and equity through the provision of high quality, efficient and comprehensive health coverage for the population.
Equity	Unhindered access to health care services for low-income groups pledged, as well as increased numbers of health centres and mobile dispensaries in rural areas.	An effort proposed to address the shortage of health care personnel within the public health sector and in rural areas. In doing so, improved terms and conditions at public hospitals and clinics pledged for health professionals.	The government failed to improve the ratio of facility to population in the rural areas, but was successful in increasing the number of doctors serving the population. No attempt made to address the disparities in health outcomes between the different ethnic groups – disparities only mentioned in the context of income inequality.

The Malaysia Plans are comprehensive and ambitious. Policies related to health system financing reforms, however, have not been implemented. No explanations are given for why the new health financing schemes, pledged in every plan under examination, have not become reality. A lack of supporting documents or references is also noticeable in some of the statements in the plans. For example, it is stated in the ninth plan that “Although the ratio of facility to population in the rural areas generally declined due to relocation of facilities, the quality and delivery of services improved with the upgrading of facilities including the provision of diagnostic and imaging equipment. These contributed to improvements in the speed and quality of diagnosis as well as **enhanced patient comfort.**” [emphasis added] (Economic Planning Unit 2006, p.417). No source is given for this and other claims and no reference is made to surveys or data sets.

6.4.2 Process and actors

The Multiple Stream theory, applied to the process and actor analysis, conceives of three main streams flowing throughout the policy system: (i) problems, (ii) politics and (iii) policies (Kingdon 1995). The problem stream encompasses, in this context, measurable indicators of (problematic) health status and stakeholder concerns. The politics stream embraces the broader political discourse within which policy is made, including political turnover and the national mood. The policy stream includes discussions and solutions that have been proposed. An analysis of the three streams, as well as the actors, is presented later in this chapter but an overview of the analysis can be found in Appendix 16.

6.4.2.1 Problem stream

In 2004, non-communicable diseases were the main causes of death in Malaysia, accounting for 72% of all deaths (World Health Organization 2010). A survey on non-communicable diseases in 2005 revealed an increased prevalence of raised blood pressure, raised blood glucose, hypercholesterolemia, overweight patients and obesity (World Health Organization 2007a). The top five main diseases notified in 2006 were, on the other hand, tuberculosis, food poisoning³⁵, dengue fever, hand, foot and mouth disease, and malaria (World Health Organization 2007a). At the

³⁵ A number of episodes of food poisoning occurred in some places, especially in schools.

same time, Malaysia has experienced considerable improvements in indicators commonly used to evaluate the population's health. Life expectancy at birth increased by three years from 1990 to 2008 and the under-five mortality rate fell from eighteen to six children per 1,000 live births over the same period (World Health Organization 2010). The changes represent a substantial improvement in average health outcomes. But it is not clear whether all socio-economic groups have enjoyed these improvements equally. Indeed, no information on the development of health inequalities in Malaysia is available in the relevant World Health Organization Statistics (World Health Organization 2010).

At a general level, the average improvements in life expectancy and the under-five mortality rate are interesting in the light of relatively low health care spending in Malaysia as a percentage of the nation's Gross Domestic Product (GDP). Malaysia spent 4.4% of its GDP on health in 2007 but, on average, the member states of the World Health Organization spent 9.2% of their GDP on health that same year. Upper-middle income countries, like Malaysia, spent on average 6.2% of their GDP on health and countries in the Western Pacific Region used 6.5% of their GDP on health in 2007 (World Health Organization 2010). These numbers suggest that, regardless of how comparisons are made, Malaysia is spending a considerably lower percentage of its GDP on health than many other countries.

More specifically, the National Health and Morbidity survey from 2006 (NHMS-III) indicated that 80% of out-of-pocket payment is covered by patients and only 19% of Malaysians aged 18 years and above had some form of private insurance (Ministry of Health 2006). One recommendation from the NHMS-III report was that "willingness to pay" should be studied and used to guide the new national health financing mechanism (Ministry of Health 2006). The NHMS-III survey also revealed that out-of-pocket health expenditure was associated with domicile, ethnicity and the monthly household income. The mean out-of-pocket health expenditure was 1.7 times higher in households in urban areas compared to rural areas. But even though households in urban areas spent more on health, they spent a lower amount as a percentage of their monthly income (the monthly income in urban areas is twice the monthly income in rural areas).

The difference between mean annual household income and mean annual out-of-pocket payments between ethnic groups was also noteworthy (Figure 24). The Chinese, on average, had the highest income, as well as making the highest out-of-pocket payments. Bumiputeras earned the lowest household income and paid the lowest out-of-pocket health expenditures. The annual out-of-pocket payments as a proportion of household income were highest among “other ethnic groups”, or 4.3% of mean annual income.

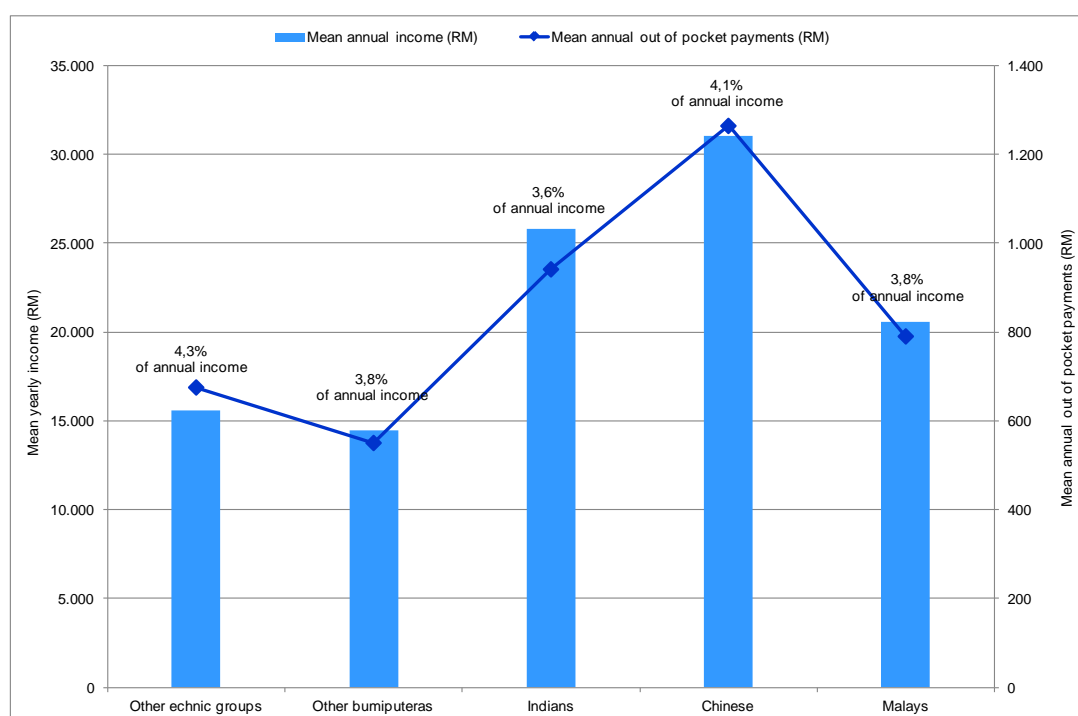


Figure 24: Mean household annual income (RM) and the mean out-of-pocket annual expenditure on health (RM). Source: Ministry of Health (2006).

Change over time is also illustrative in this respect. Since the New Economic Policy (NEP) was launched in 1971 (Economic Planning Unit 2008a), the government’s aim has been to reduce poverty, a goal reflected in the Malaysia Plans. The ninth Malaysia Plan argues that “reducing socio-economic disparities requires urgent and focused attention” (Economic Planning Unit 2006, p.24). But disparities within the nation have in fact been widening (Economic Planning Unit 2006). Out-of-pocket payments were explored in the NHMS-III survey which revealed that the richest group spent five times more on health than the poorest income group (Figure 25).

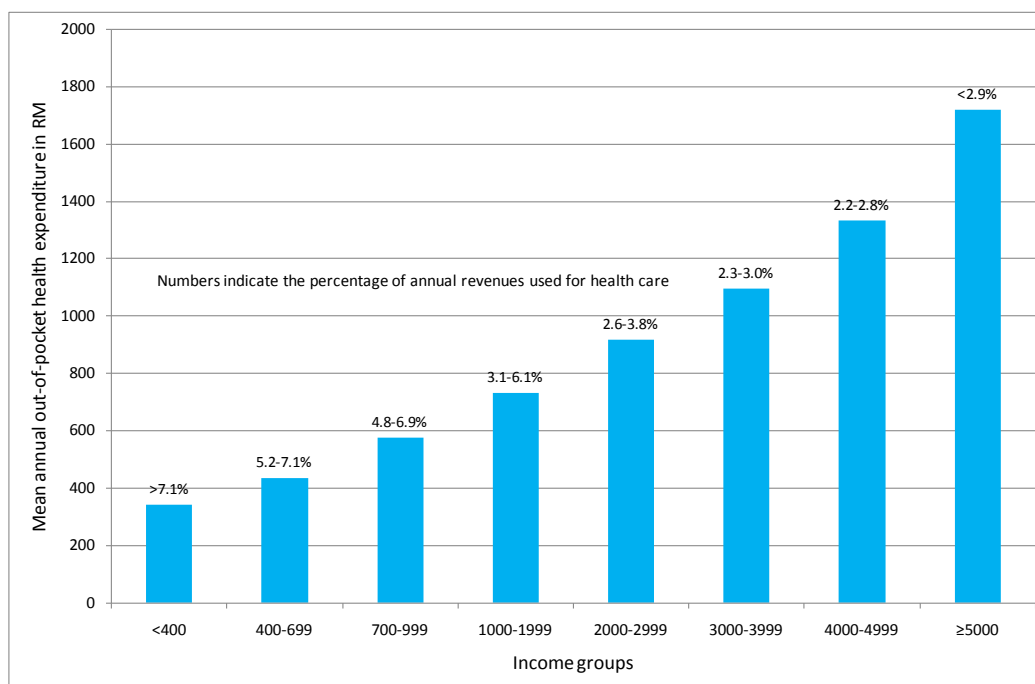


Figure 25: Mean annual out-of-pocket health expenditure in different income groups (monthly income). Source: Ministry of Health (2006).

Although public health care is subsidised and the government has pledged to provide the poor with free health care, available data indicate that the poorest households, with an average income of less than RM400 per month, pay RM342 out-of-pocket annually for health care services. That accounts, on average, for about 7.1% of their annual income. At the same time, the richest households, with an income above RM5,000, devote about 2.9% of their annual income on health care services. Moreover the fact that secondary and tertiary health care is not free can present those who are not rich with particular problems. It is not uncommon that appeals for help to pay for health care treatments appear in the newspapers. “These kids need your help” is, for example, the heading of one article in the New Strait Times on April 13th 2010 (New Strait Times 2010). This was a call from parents with children suffering from life threatening diseases who urgently needed surgery. The article appeals for donations for four children who, in total, needed RM113,000 (USD\$35,518) to pay for their treatment. Those who wished to help were requested to send cheques to the newspaper, which coordinates such donations. Indeed, the prevalence of such appeals prompted the government to establish a National Health Welfare Fund in 2002. The fund receives public donations from rich corporations and

individuals (Chik 2000; Yusop 2009). Poor patients in need can apply for assistance through the Ministry of Health. This way of health care financing has been criticised on the grounds that it marginalises the government's role in welfare provision (Chik 2000; Leng, Barraclough 2008).

6.4.2.2 Politics stream

Political debates and innovation are influenced by the national mood and election outcomes (Zahariadis 2007). Volatility in politics in Malaysia has been low, with the United Malays National Organisation (UMNO) consistently playing a dominant role for more than half a century. The UMNO is the largest political party in Malaysia and has reflected and perpetuated the nationalist ideologies that have shaped Malaysian politics for decades (Lee 2005). Since independence, UMNO has been a major partner in the ruling coalition, the Barisan Nasional (BN). This has left Malaysia a "monopolistic" country with limited innovation in influential political ideologies. The two other major parties in the BN are the Malaysian Chinese Association (MCA) and the Malaysian Indian Congress (MIC) (Malaysian Parliament 2010). All these parties are ethnically based but there also exist numerous smaller political parties in Malaysia that can be categorised as either mono-racial or multi-racial (Ghee, Gomes & Rahman 2009).

UMNO is a right wing political party, endorsing neo-liberal ideologies that view the free market as the major driver of economic growth and prosperity (Navarro 2007a). The government, under UMNO's leadership, launched the privatisation policy in 1983 (Economic Planning Unit 2008b) and it has, since then, privatised (or corporatized) several public entities. Their privatisation policy has also had an ethnic dimension, favouring Malays³⁶ and other Bumiputeras, although well connected non-Malay business people have also been able to obtain shares in many of the privatisation projects (Lee 2005). Indeed, despite the government's "One Malaysia" campaign, there remains an undercurrent of inter-ethnic tension largely fuelled by institutionalised policies that favour one ethnic group over another (Ghee, Gomes & Rahman 2009; Economic Planning Unit 2008a). Inter-ethnic marriage is relatively

³⁶ The constitution defines the word "Malay" as "a person who professes the religion of Islam, habitually speaks the Malay language...." (Malaysian Parliament 1957) (Article 160).

uncommon. There are probably many reasons for the separation between ethnic groups, but one explanation might be compulsory conversion to Islam when marrying a Muslim (Ghee, Gomes & Rahman 2009).

It can be difficult to analyse national mood through newspapers, particularly – as some key informants argued - if the national media are controlled by ruling parties (Health care specialist 2010). The opposition has limited access to the media and has to use other means such as blogs, websites and publications established by their associations to disseminate their opinions. The Coalition Against Health Care Privatisation, for example, was founded in 1977 and encompasses 81 non-governmental organisations (NGOs). The coalition was formed to oppose further privatisation of the health care system and to press the government to consult with stakeholders before introducing changes in the national health care system. The Coalition Against Health Care Privatisation is an active association and has repeatedly expressed opinions and suggestions on health system financing. It has criticised a lack of transparency in working procedures and limited interest by the government in participation from interested people and professional groups (Coalition Against Health Care Privatisation 2005a; Malaysian Medical Resources 2006).

6.4.2.3 Policy stream

The analysis of the policy stream in the Multiple Stream model involves, as indicated above, analysing the general discussion on health system financing reforms, in which solutions are evaluated with regard to their technical feasibility, value acceptability and how they integrate into existing political strategies. Some proposals survive and are accepted unchanged, while others are adjusted to reflect the politicians' ideologies and values. Options that seem difficult to implement and do not conform to the values of the policy makers are not likely to be adopted (Zahariadis 2007).

The Malaysian government has used several consultancy firms to evaluate possibilities in relation to a new health financing scheme. For example, Karol Consulting, a company from Australia, was appointed to study how such a scheme

could be implemented in Malaysia (Karol Consulting 2006). The work was carried out in cooperation with the Ministry of Health and the Economic Planning Unit under the Prime Minister's Office and the United Nations Development Programme (UNDP), which sponsored the work. The findings of the study were not made public and were classified as confidential. The minister of health claimed that he was not satisfied with the report (Choe 2008), deemed it incomplete and decided that the study would be terminated before it was completed.

I obtained a copy of Karol Consulting's interim report from August 2006. The report claimed that the recommendations were based on ideas for a National Health Financing Mechanism found in the government's Vision for Health policy. The report suggested that the funding mechanism would be based on risk pooling where "the rich subsidise the poor and healthy subsidise the sick so that the health status of the community as a whole is raised" (Karol Consulting 2006, p.105). The consultants proposed that financial contributions to the fund would be based on the ability to pay and that a special effort would be made to satisfy the public and ensure that the National Health Authority (NHA), who would be responsible for the fund, operated according to clearly specified rules. According to the report, however, the government's track record of administering publicly owned agencies was not particularly good (Karol Consulting 2006).

In December 2005, the Coalition Against Health Care Privatisation prepared the "People's Proposal for Health Care Financing." The main elements of the proposal were that there would be a national fund available to cover the cost of health care for the people of Malaysia. The fund would be financed without direct contributions from individuals. The Coalition urged the government to raise expenditure on health to a minimum of 5% of the nation's GDP, in accordance with recommendations from the World Health Organization³⁷. The proposal suggested that the fund should also receive some of the profits from the petroleum industry and the whole revenue generated by taxes on alcohol and cigarettes (Coalition Against Health Care Privatisation 2005b). The proposal stressed the importance of equity when

³⁷ This recommendation was never formally adopted by the World Health Organization (Savedoff 2003).

establishing the fund and that the National Health Authority (NHA) should work openly and without any “cronyism and corruption”. The coalition suggested that the NHA should involve representatives from a wide cross section of Malaysia and not only members selected by the prime minister or by the minister of health.

The proposals from the Coalitions Against Health Care Privatisation and the suggestions in the report from the Karol Consultancy were not adopted. They have presumably not been found technically feasible or acceptable within the Ministry of Health or at the Economic Planning Unit. Alternatively, they simply have not reflected the political ideologies preferred by the ruling parties.

6.4.2.4 Actors - policy entrepreneurs

The Ministry of Health is responsible for all aspects of public health and plays a major role in policy making. The general opinion of key informants, however, was that the Economic Planning Unit (EPU), under the Prime Minister’s Office, was the main actor in policy making (including public health policy making). Indeed, according to the key informants, decision making in recent years has been increasingly influenced by the Prime Minister’s Office (Health care specialist 2010; Ghani, Yadav 2008). Another strong actor in public health policy making is the Malaysian Medical Association (MMA), a national association for medical doctors (Health care specialist 2010). Little information was found about health care financing on the MMA website, which might perhaps indicate that the MMA has open access to the minister of health and his staff and can therefore express their opinions and recommendations directly to the Ministry of Health. Powerful actors often work behind closed doors and do not need to raise their voices in public through the media or the Internet. Another strong actor in the policy process identified by the key informants was the private hospital sector (Health care specialist 2010).

One key informant also argued that powerful and strong NGOs were involved in policy making and that the politicians had decided to invite their participation rather than let them disseminate their opinions in the media (especially if they were critical). Tellingly, if these stakeholders criticise the government publicly, they are often called in for a meeting at the Ministry on the pretext of “let’s rather talk about it and discuss

it directly” (Health care specialist 2010). Similarly, it was argued that consultancy firms are commonly recruited from abroad and that if their findings do not reflect the politicians’ ideologies and values, they are dismissed and replaced (Health care specialist 2010). It is uncommon for the Ministry of Health to use specialists from within Malaysia, and most unlikely if they have been “difficult” or have criticised the existing system publicly, as one of the key informants revealed (Health care specialist 2010).

The interviewees thus characterised, the health policy process to be opaque and observed that the politicians and their staff are selective in their choice of participants (Health care specialist 2010). Those who are selected cannot expect any feedback, information or results from the meetings in which they participate (Health care specialist 2010). Interviewees stated that although they were asked to participate in a meeting at the Ministry of Health to discuss a new policy, it was more for the purpose of giving them a sense of involvement because, they felt, key decisions had already been made:

“I have been asked to participate in meetings at the Ministry of Health to discuss new policies. These meetings are perhaps 45 minutes long where 30 minutes are used for presentation. In fact everything has already been decided and no dialogue is expected.”

Health care specialist

6.4.2.5 Policy window – new policy schemes

According to the Multiple Stream approach, a “policy window” opens up at critical points when the three independent streams (problems, politics and policy) converge (Kingdon 1995). What causes the policy window to open depends upon the circumstances each time. If good governance practices are employed and/or a new policy maker happens to be in power, the possibility of a policy window opening up increases. Volatility in Malaysian politics has however been low, which means the same or similar political ideologies have remained influential. For health care financing reforms, the policy window seems not to have opened up, except for the regular updates of the Malaysia Plans.

6.4.3 Governance in Malaysia

Both the World Bank and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) refer to governance as a process of decision making and the capacity of governments to formulate policies and to implement or not to implement them (World Bank 2010c; Sheng 2011). To evaluate the quality of governance, the World Bank has developed a methodology which they use to rank all countries of the world on an annual basis. The Bank employs six categories of variables in their evaluation of governance quality: (i) Voice and Accountability; (ii) Political Stability and Absence of Violence; (iii) Government Effectiveness; (iv) Regulatory Quality; (v) Rule of Law; and (vi) Control of Corruption (Kaufmann, Kraay & Mastruzzi 2003), (Kaufmann, Kraay & Mastruzzi 2009). Every category has a wide variety of subordinate variables or indicators based on data gathered from a number of survey institutes, think tanks, non-governmental organisations and international organisations (World Bank 2010c).

The six categories used to aggregate data show a declining trend in governance quality for Malaysia from 1996 for all categories, except “Government Effectiveness” which was 1% higher in 2009 than it was in 1996. All other categories have, on average, declined by 15% (from 13% to 22%) from 1996 to 2009, as illustrated in Table 14.

Table 14: Governance indicators in Malaysia from 1996 to 2009 presented by the World Bank.
Source: World Bank (2010c).

Year	Voice and accountability	Political stability	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
1996	38.3	58.2	78.6	72.2	74.8	74.8
1998	43.8	45.2	69.4	69.3	64.3	72.3
2000	40.4	51.9	78.6	64.9	61.0	66.0
2002	37.5	58.7	79.1	65.9	63.3	67.0
2003	38.5	58.2	81.1	70.7	62.9	67.0
2004	41.8	57.7	84.0	66.8	65.2	69.9
2005	44.7	61.1	83.5	66.3	65.7	65.0
2006	31.3	55.3	84.0	66.3	65.7	67.0
2007	32.2	52.9	85.0	67.5	65.7	67.6
2008	31.3	51.2	83.1	63.3	64.1	62.3
2009	31.8	46.7	79.5	60.0	65.1	58.1
Difference: 2009-1996	-17%	-20%	+1%	-17%	-13%	-22%
Green means: 75th to 90th percentile of maximum scores						
Yellow means: 50th to 75th percentile of maximum scores						
Orange means: 25th to 50th percentile of maximum scores						

6.5 Discussion

The Malaysian government has, since the early 1980s, paved the way for increased privatisation within the health system. Increased efficiency and a reduction in the government financial and administrative burden has been the rationale for the Malaysian privatisation policy (Economic Planning Unit 1996b). Nevertheless, government costs have not decreased and management costs have risen along with operational costs, largely due to the cost of new medical technologies (Lit 2008).

Private sector services are usually run for profit and favour free market principles. If, however, equitable access and efficient use of resources are the objectives, it is difficult to operate health care services solely on free market principles because of the inherent market failures in the health care market (Wonderling, Gruen & Black 2010; Mooney 2009; Folland, Goodman & Stano 2007; Hsiao 1995; Mooney 2003). One of the World Bank's pieces of advice in the 1993 World Health report was that

governments should intervene and compensate for problems related to uncertainty and market failures by introducing a solid health system financing mechanism with the aim of eliminating inequities in multi-tiered systems (World Bank 1993b). Indeed, the Malaysian government has repeatedly been advised to reform its health financing mechanism. One of the first to recommend this action was the Asian Development Bank which, in 1988, recommended a compulsory scheme funded through contributions from both employees and employers whereby the government would pay premiums for the poor (Ramesh 2007). The government indicated that they supported the proposal, but no action was taken at that time. Since then, the government has pledged a new health system financing scheme to make health care accessible and affordable in both public and private institutions to all Malaysians – an aspiration evident in every Malaysia Plan examined in this research and also in the most recent plan (Malaysia Plan 2011-2015; Economic Planning Unit 2010). As noted previously, no official explanations have been given for why these pledges have not been met.

Concurrently, limited change in payment mechanisms, coupled with privatisation in the health care sector, has perpetuated inequitable access to private health care services. Without a comprehensive health insurance mechanism and governmental subsidies (currently restricted to services received through public health care institutions), accessibility to the health care system has been based largely on patients' ability to pay.

The way the Malaysian government works, as observed in this analysis, gives an impression of the development and implementation of an “emerging-strategy” rather than a “comprehensive thought-through strategy” based upon an evaluation of all potential options and their social and economic consequences. The recent full-paying-patient scheme is an example of such piecemeal policy making. The full-paying-patient scheme was a reaction to a “brain drain” from the public sector to the private sector, which itself was one of the consequences of the privatisation policy driven by the government. The full-paying-patient scheme allows health professionals in the public sector to take full paying patients and use public facilities. One inevitable consequence of this scheme is increased inequity in health, as

people who can afford to pay for the private services will be able to bypass the queue and those who cannot will have to wait even longer for the health care service they need.

This not only points to the absence of a coherent strategy but also limited concern with social solidarity on the part of those in power. This is clearly reflected in occasional discordance between policy documents and the views of individual senior politicians, even ministers. A recent interview with the minister of health in *The Sun*, a widely read newspaper in Malaysia, quoted the minister as saying that the idea behind the new health financing scheme is to have a “one flat rate”, where everyone contributes a standard monthly minimum amount, regardless of their salaries. This diverges markedly from ideas in the ninth Malaysia Plan stating an increased access for all Malaysians to health care services (Economic Planning Unit 2006; Sivanandam 2010). Similarly, the minister claimed that there would only be one standard scheme to provide primary health care for all Malaysians, administered by the government and in line with the World Bank’s recommendation for minimum “essential clinical services” (World Bank 1993b). Patients who need treatment above the minimum will have to pay the costs themselves or buy private insurance. Such arrangements indicate no cross-subsidisation between the rich and the poor, which makes the payment mechanism inequitable and provides only limited security for the most vulnerable.

These inconsistencies are perhaps not only explicable in terms of ideology but might also reflect trends in the nature of governance in Malaysia. According to the World Bank’s annual evaluation, as indicated in Table 14, the quality of Malaysian governance has declined over the last 15 years, except for the measure of governance effectiveness (World Bank 2010c). The trend for the measure of “Voice and Accountability”, which includes indicators evaluating the transparency of the government’s policies via citizens’ participation as well as freedom of expression, was 17% lower in 2009 than in 1996. It is also notable that the “Voice and Accountability” score for Malaysia has never been particularly high, reaching only 25-50% of the maximum score. The “Control of corruption” index has also declined

during the timeframe under investigation and was down by 22% in 2009 compared to 1996 (World Bank 2010c).

More specifically, in relation to health system financing reform, it could be argued that the Malaysian government has failed in at least five of the eight criteria of the UNESCAP definition of good governance (see the discussion on governance in the literature review) (Sheng 2011). Malaysian governance has, in the case of health system financing reforms, not been **accountable** and has not **responded** to the population's rights of equal access to all health care services available in the country. The frequent use of the Official Secrets Act also reduces the government's credibility and supports the criticisms made of selective partnership, and opacity, which increases the possibility of corruption (Barraclough 2000). This indicates that governance working procedures have not been **transparent** and they have not **included** all stakeholders and thus have not reached wide **consensus** on how to reconcile a new health system financing mechanism to the increasing participation of the private sector within the health system.

In a second broad respect, it has been suggested that egalitarian policies are less likely to be implemented if governments are confident about their strength (Wilkinson, Pickett 2009; World Bank 1993a). It is not until their power is at risk that a "policy window" might open and facilitate the implementation of innovative policies (Zahariadis 2007; Roberts et al. 2008). As already observed, political volatility has been low in Malaysia, which might be one of the obstacles to health system financing reforms. New ideas for health financing might thus be trapped in the "policy cycle" for decades. Another explanation might be that the ideas do not comply with the dominant political ideology. UMNO, which has been the leading party in power since independence, is a right wing political party, preferring neo-liberal ideologies. Neo-liberal ideologies are based on the philosophy that the best way to improve efficiency is to reduce State intervention and to empower the free market (Navarro 2007a). More research would help to gain a better understanding of such political determinants of health and how they affect health system financing policies and inequities in health (Navarro 2007a; Navarro, Shi 2001).

There are several limitations to this study. A different mix of data might have yielded different results, as might the use of another analytical framework. A local researcher might also have had access to information that could have influenced the findings. Nevertheless, the results of the Malaysian case study mesh with the results from the Icelandic case study in highlighting **accountability, responsiveness, transparency, inclusion** and **participation** as major governance dimensions affecting health systems.

6.6 Conclusion

This case study suggests that privatisation of health care services within a system that was previously funded through general taxation increases inequity in health if apposite changes to health care financing are not introduced in parallel. If the aim is to secure citizens' equal access to all services, regardless of the type of provider, governments must adapt the health system financing mechanism to a new two-tiered system. The introduction of private health care services requires that the purchasing mechanism be reconciled with health care provision so that access does not become dependent on the patients' ability to pay. Successful reconciliation in this regard depends upon genuine political will to maintain equity, as well as good governance practices. Specifically, the following conditions are necessary. First, the idea of a social security fund, established through fair collection of revenues from society and the purchasing of health care services from both public and private providers must concur with the political ideology of the ruling parties. Second, those in power must be held accountable for developing a new health system financing policy and, even more important, for its implementation. And in a third regard, the decision-making process must be transparent, allowing fair participation and give all stakeholders a voice in the process.

Chapter 7: Discussion of the thesis

This doctoral thesis is compiled from three individual studies exploring the link between governance and health systems under different settings applying various research methods. The aim was to examine if there is an association between governance and health outcomes and to explore how health systems are affected by governance quality as defined by UNESCAP. The objective was to explore how governance affects decision making and implementation of decisions within health systems and whether some categories of the UNESCAP's definition for good governance might be more influential than others.

The studies indicate an association between health systems performance and governance practices; suggesting a complicated interaction and confounding effects between different building blocks of societies. The thesis furthermore suggests that the association applies for countries **at all income levels**. The study from Africa disclosed a statistically significant relationship between governance quality, measured through governance indices, and health system performance, measured through child mortality (average outcome) and the ratio between child mortality in the wealthiest and poorest income quintiles (equity measure). However, after adjusting for confounding factors, governance did not remain statistically significant associated with the equity measure. This emphasises the importance of distinguishing between average and equity measures and that it cannot be assumed that if average health outcome is improved that the improvement has been distributed equally among all social groups. The broad definition of governance and the complexity associated with measuring and evaluating its quality, represent a major challenge. Despite the existence of comprehensive governance indices used to evaluate and rank countries according to governance quality, there is always the risk that these indices disregard critical factors that play an important role for policy making and implementation of policies. This risk was especially apparent in the Icelandic case, which indicated severe governance failures in relation to decision making, despite Iceland being ranked among the best governed countries of the world (World Bank 2010; Gylfason 2009).

It is one of governments' responsibilities to lead new public health policy making (World Health Organization 2000; Walt 1994; Buse, Mays & Walt 2005; Roberts et al. 2008). Policy making can be viewed as a process or a cycle containing distinct steps such as problem identification, policy development, implementation and evaluation (Roberts et al. 2008). To be accountable, governments need access to reliable data and have to be willing to analyse the data and respond to upcoming public health threats in an appropriate way (World Health Organization 2000; Walt 1994; Buse, Mays & Walt 2005; Roberts et al. 2008). Both the Malaysian and the Icelandic case revealed limited analytical work conducted by the respective responsible governmental bodies prior to decision making. Other case studies have shown that good preparation, of which analytical work is critical, is essential for successful health system reforms (Sheaff 2005; Tarin et al. 2009). Inadequate analytical work and lack of professional decision making processes make governments and governmental institutions with the authority to influence health system policy less accountable. Lack of accountability in turn weakens their capability to be responsive and act in the best interests of the whole society within an acceptable timeframe.

To develop a consensus oriented policy, based on best available data, requires transparent working procedures allowing for fair participation (Sheng 2011; World Bank 2010; Roberts et al. 2008). In both the Malaysian and the Icelandic case, little evidence for analysis and analytical documents could be found; where such documents existed, they were difficult to access. In some cases it appeared as if policy papers were deliberately concealed from stakeholders and others interested in participating in the public health policy making. This was even more noticeable if stakeholders were negatively affected by the new policy, indicating selective partnership in the decision making process.

Policymakers commonly establish committees to act as a coordinator in public policy making. Individuals chosen to participate and lead such work are often selected from a small group of people, who share similar views (Lee, Goodman 2002; Gilson et al. 2003). This leads to the formation of an "elite" that gains a critical influence over all decision making processes. The selected individuals, who commonly are connected

to the political parties in power, acquire a unique opportunity to influence policy making in their best interests, which is not necessarily based upon evidence or best practices and might be at the expense of the broader public welfare (Kaufmann 2004; Lee, Goodman 2002). Selective partnership is not only inequitable and exclusive; it is also a violation of human rights as, according to the United Nation's Declaration of Human Rights, everyone has the right to participate in governing her or his country (United Nations 1948). Selective partnership makes the policy process biased with limited access for groups with less resources and weaker voice. This increases the risk of hostility and suspicion among stakeholder and can affect implementation negatively (Roberts et al. 2008). Circumstances like these are also more likely to lead to "piecemeal" policy making, answering the requirements of the strongest pressure groups and/or satisfying specific requests from constituents (Gudjonsson et al. 2005).

Both the Icelandic and the Malaysian case studies reveal that predominant political ideologies can have a significant influence on decision making and the implementation of decisions at the expense of analytical evidence; a situation which has also been suggested in other studies (Towse, Mills & Tangcharoensathien 2004; Gilson et al. 2003; Wagner, Wollmann 1986; Coburn, Coburn 2007; Navarro 2007; Navarro, Shi 2001). While both case studies provide some indication of the potential negative effects on health systems performance, this area of research remains nascent and more systematically collected data is needed. More research is also needed to understand the potential influence of different political ideologies on health systems reforms and decision making within health systems.

To alter existing policies can be quite challenging, but in all societies unanticipated events happen occasionally that open up a window of opportunity for radical policy changes (Sabatier 2007; Roberts et al. 2008). An example of such event is the current economic crisis. In the Icelandic case it is described how the economic crisis, which was of unprecedented scale, opened up a window of opportunity for health system reforms. The window of opportunity can also open up when different political parties take over the governmental responsibilities, for example after elections, which was also seen in the Icelandic case study (Sabatier 2007; Roberts et al.

2008). The counterfactual is starkly illustrated in the Malaysian case, which highlights a prolonged failure in governance in relation to the implementation of a new health financing scheme, and indicates that the government, which has ruled for decades, is overconfident about its strength and can afford to ignore new egalitarian policies (Wilkinson, Pickett 2009; World Bank 1993; Zahariadis 2007; Roberts et al. 2008).

This thesis, based on the three stand-alone studies, contributes to increased knowledge of the association between governance and health systems performance. Firstly, it demonstrates a positive statistical association between governance quality and health outcomes in Africa, applying a new governance index specifically developed for the African countries. Secondly, the thesis provides an evidence for pathways through which governance might affect health systems performance; (a) through **partnership**: The thesis suggests that a broad cooperation with stakeholders, allowing for fair participation, to be one of the fundamental governance qualities. Fair partnership improves health systems performance through improved efficiency and equitable use/distribution of resources; (b) through **transparency**: The thesis indicates transparency to be an essential element in decision making processes, allowing for open discussion where justification for decisions are made clear to all citizens. Transparency reduces the probability of “elite” formations and improves health systems performance, in particular equity in health; (c) through **accountability**: The thesis suggests accountability to be a core governance quality which affects health systems performance through appropriate responses taken on by those who should be held accountable, either through elections or through otherwise a legitimate mandate. Thirdly, the thesis indicates that the association between governance quality and health systems performance is not restricted to low income countries. Even health system performance in a high income country, categorised as well governed, can be affected by governance quality. Fourthly, the thesis shows clearly how global affairs, in this case a global economic crisis, affects a national health system, whose country is an active player in the global financial market.

To enhance public health, emphasis must be put on improved health and education (Sen 1999). It is health systems' obligation to improve health and distribute health goods equitably among all socio-economic groups (World Health Organization 2000). However, this is a challenging task which requires good governance practices, political commitment, strong stewardship and strategic work, based on reliable data (Sheng 2011; World Bank 2010; World Health Organization 2000). Governments, who are to lead a country, have to monitor and produce health statistics, which together with surveys and research support analytical work. Easily accessible data can be used as an input for decision making which should be executed in cooperation with stakeholders allowing for open and honest discussion were all proposals are evaluated, ultimately leading to an informed decision, which has the potential to serve the whole society.

Chapter 8: Conclusions of the thesis

Governance quality and health outcomes are negatively associated in the African region of the World Health Organization, suggesting that better governed countries have better population health. Although governance failures have commonly been related to lower income countries they can, however, also occur in countries at higher income levels. Even resource rich countries, categorised as well governed, can fail to apply good governance practices, affecting the performance of the national health system.

Lack of accountability and responsiveness are critical governance failures that affect short term decision making and long term reform within health systems. There are presumably several reasons for lack of accountability and responsiveness, such as ignorance among those who are in power or disagreements based on conflicting political ideologies. More research is needed to improve our understanding of why this shortage might arise; if and then how it is associated with power dispersion and political turnover or how it could be linked to political ideologies and battles/compromises between political parties.

Selective partnership, another governance failure, is based on loyalty to ideologies with a consequent exclusion of rivals, even though they represent important stakeholders directly affected by new policy proposals. It could be argued that selective partnership is a technique applied to ensure preferred ideas prevail, particularly in disputable subjects. More research would help to gain a better understanding of how selective partnership affects health systems, particularly equity in health.

Lack of transparency appears to be a prevailing weakness in governance. It represents an obstacle for stakeholders to access documents that concern all citizens, even though there are no indications that transparency might harm the nation's security. No simple explanation presents itself for the opacity, but one possibility might be an escape from the obligation to justify decisions or actions to the public, especially in disputable cases.

Although case studies, as in the case of this thesis, only allow for cautious conclusions, they may also provide broader implications and therefore contribute towards careful generalisation. In this respect, this thesis adds significantly to the current evidence base by suggesting that governance quality is an important correlate of health systems performance and identifies areas where future research is needed.

Appendices

Appendix 1: Indicators related to governance, financing and education used in the AFRO project.

Table 15: Data related to governance, financing and education in the AFRO study.

Location	GNI ¹	Financing ²	RLTC ³	SEO ⁴	Literacy ⁵	Female ⁶	Male ⁷
Algeria	5,940	188	52.3	57.6	69.9	94	96
Angola	3,890	71	38.4	32.9	67.4	49	51
Benin	1,250	46	52.3	36.9	34.7	73	87
Botswana	11,730	635	81.6	58.2	81.2	85	83
Burkina Faso	1,130	87	56.5	30.3	23.6	42	52
Burundi	320	15	48.3	35.9	59.3	73	76
Cameroon	2,060	80	43.3	44.7	67.9	65	74
Cape Verde	2,590	278	86.1	47.2	81.2	87	88
Central African Republic	690	55	42.7	34.9	48.6	38	53
Chad	1,170	40	40.1	25.6	25.7	49	71
Comoros	1,140	35	52.8	37.5		50	60
Congo	2,420	31	43.5	48.7	84.4	52	58
Cote d'Ivoire	1,580	66	36	42.9	48.7	49	61
DRC	270	18	24.3	26.3	67.2	47	60
Equatorial Guinea	16,620	280	43.3	48.5	87	83	91
Eritrea	680	28	56.6	35.4		43	50
Ethiopia	630	22	47.9	40.5	35.9	68	74
Gabon	11,180	252	56.4	61.6	83.8	88	88
Gambia	1,110	56	54.7	40.5		64	59
Ghana	1,240	100	72.7	47.3	57.9	71	73
Guinea	1,130	116	51	32.3	29.5	66	77
Guinea-Bissau	460	40	34.6	23.3		37	53
Kenya	1,470	105	56	48.6	73.6	76	75
Lesotho	1,810	143	69.3	42.9	82.2	74	71
Liberia	260	39	26.8	36.9	60	39	40
Madagascar	870	34	57.3	39.4	70.7	96	96
Malawi	690	70	64	40.7	64.1	94	88
Mali	1,000	65	50	31.4	24	54	67
Mauritania	1,970	45	58.8	36.8	51.2	82	78
Mauritius	10,640	581	80.5	71.4	84.3	96	94
Mozambique	660	56	50.4	36.7	38.7	73	79
Namibia	4,770	338	76.7	57.4	85	79	74
Niger	630	27	51.7	27.6	28.7	37	50
Nigeria	1,410	50	48.2	40.7	69	59	68
Rwanda	730	210	46	37.7	64.9	81	76
Sao Tome and Principe	1,490	141	55.6	41.5	84.9	98	97
Senegal	1,560	72	66.2	42.3	39.3	70	71
Seychelles	14,360	812	80.4	70	91.8	100	99
Sierra Leone	610	41	37.3	27.1	34.8	36	50
South Africa	8,900	869	78.1	63.5	82.4	88	88
Swaziland	4,700	353	56.9	46.5	79.6	79	78
Togo	770	70	47.1	42	53.2	75	86
Uganda	880	143	55.8	42.2	68.1		
Tanzania	980	45	59.6	43.4	69.4	97	98
Zambia	1,140	62	60.5	43	68	94	90
Zimbabwe		147	44.6	38.8	89.5	88	87

¹ GNI: Gross National Income (ppp int.\$)

² Financing: Per capita total expenditure on health (ppp int.\$)

³ RLTC: Rule of Law and Corruption Index

⁴ SEO: Sustainable Economic Opportunity Index

⁵ Literacy: Adult Literacy (%)

⁶ Female: Percentage of net primary school female enrolment ratio (%)

⁷ Male: Percentage of net primary school male enrolment ratio (%)

Appendix 2: Indicators related to health outcome, health care and infrastructures used in the AFRO project.

Table 16: Data related to health outcomes, health care and infrastructures in the AFRO study.

Location	U5MR ¹	U5MR ratio ²	Attendance ³	DTP3 ⁴	Hospital beds ⁵	Water ⁶	Sanitation ⁷
Algeria	38		95	95	17	85	94
Angola	260		45	83	1	51	50
Benin	148	2.1	74	67	5	65	30
Botswana	124		99	97	24	96	47
Burkina Faso	204	1.4	54	99	9	72	13
Burundi	181		34	74	7	71	41
Cameroon	149	2.1	63	82	15	70	51
Cape Verde	34		89	81	21	80	41
Central African Republic	174	2.0	54	54	12	66	31
Chad	209	0.9	14	20	4	48	9
Comoros	68	1.5	62	75	17	85	35
Congo	126	1.6	83	80	16	71	20
Cote d'Ivoire	127		57	76	4	81	24
DRC	205		61	87	11	46	31
Equatorial Guinea	206		63	33	11	43	51
Eritrea	74	1.5	28	97	12	60	5
Ethiopia	123	1.4	6	73	2	42	11
Gabon	91	1.7	86	38	20	87	36
Gambia	114		57	90	8	86	52
Ghana	120	1.5	50	94	9	80	10
Guinea	161	1.9	38	75	3	70	19
Guinea-Bissau	200		39	63	7	57	33
Kenya	121	1.6	42	81	14	57	42
Lesotho	132	1.4	55	83	13	78	36
Liberia	235		51	88		64	32
Madagascar	115	2.9	45	82	3	47	12
Malawi	120	1.6	54	87	11	76	60
Mali	217	1.7	41	68	3	60	45
Mauritania	125	1.2	53	75	4	60	24
Mauritius	15		99	97	30	100	94
Mozambique	138	1.8	48	72	8	42	31
Namibia	61	1.8	76	86	33	93	35
Niger	253	1.3	18	39		42	7
Nigeria	191	3.3	35	54	5	47	30
Rwanda	160	1.7	28	97	16	65	23
Sao Tome and Principe	96		81	97	32	86	24
Senegal	116	2.9	52	94	1	77	28
Seychelles	13			99	57	87	
Sierra Leone	269		43	64	4	53	11
South Africa	69	4.0	92	97	28	93	59
Swaziland	164		74	95	21	60	50
Togo	107	1.7	62	88	9	59	12
Uganda	134	1.6	42	64	11	64	33
Tanzania	118	1.5	43	83	11	55	33
Zambia	182	2.1	43	80	22	58	52
Zimbabwe	85	1.3	69	62	30	81	46

¹ U5MR: Under-five mortality rate

² U5MR ratio: Ratio between the richest and the poorest U5MR quintiles

³ Attendance: Birth attended by skilled health personnel (%)

⁴ DTP3: One year olds immunised with DTP3 (%)

⁵ Hospital beds: Number of hospital beds (per 10,000 population)

⁶ Water: Population with sustainable access to improved drinking water sources (%)

⁷ Sanitation: Population with sustainable access to improved sanitation (%)

Appendix 3: An interview protocol used in the Icelandic case.

Interview protocol

Facilitator is always the same, Anna Elísabet Ólafsdóttir

Participants in **interviews** are two: the facilitator and the key informant.

Participants in **focus groups** are a maximum of three, in addition to the facilitator.

The facilitator hands out two copies of the letter “For Participants”. She then opens the discussions and introduces herself:

First of all I would like to thank you for your participation and for sharing your valuable time and expertise with me. In interviews/focus groups like this, it is important that the same procedure is followed. I will therefore start the interview/meeting with a brief introduction. Before I do that, I want to make it very clear that you can withdraw from the research at any time. You have two copies of the same letter. I will sign them both, one is for you and one is for me. My copy will be filed and kept until the final report of this study has been reviewed. If you want to withdraw from the research you only need to call me or send me an e-mail. My phone number and e-mail address are in the letter.

Both papers are signed. A copy is given to the participants and one is filed and kept in the researcher’s file.

I now start with the formal introduction: My name is Anna Elísabet Ólafsdóttir. I was the director general for the National Public Health Institute of Iceland from 2003 until 2008. In 2007 I gained permission to start my doctoral study at Brunel University in West London. This meeting, in which you have agreed to take part, is part of my doctoral study.

I ask you to allow me to record the meeting so I can work on the interview later. You can refuse, in which case I will try my best to take notes throughout the meeting.

My research is qualitative research about the impact of the Icelandic financial crisis on our national health system. It is based on interviews and focus groups with people working within the Icelandic health system. It is important to make it clear that all information shared at this meeting stays within the group. What will be said here is only for this group and my

research. I promise the group full confidentiality. No names will be given, ever. It is only me that has access to the records and they will be destroyed as soon as the research is finished.

Participants are invited to ask questions if something is unclear

Recording is started

The facilitator opens the discussions:

I have given you one sheet of paper which explains what I would like you to discuss in the meeting.

The facilitator goes through the sheet and explains what the expectations are:

I have put forward five issues I would like you to discuss, but participants can discuss other issues that they find important.

Let's start the meeting by discussing what the first governmental actions were when the banks were nationalised and it was clear that public spending on health had to be reduced.

Participants are free to speak

The facilitator allows people to talk freely and interrupts the participants as little as possible. She intervenes if the participants are starting discussions which are irrelevant to the research. She then tries to take them back to the agenda. The facilitator ensures the meeting covers the five issues on the agenda.

As the meeting comes to an end, the facilitator thanks the participants for their valuable contributions and time.

End of the meeting.

Appendix 4: An e-mail sent to key informants requesting their participation

Content: Research on how the economic meltdown has affected the health system and equity in health.

With this letter, I would like to invite you to participate in qualitative research on the first impact of the Icelandic financial crisis on the health system and equity in health. The research is part of my DrPH study at Brunel University in London. My main supervisor is Professor Pascale Allotey, at Brunel University and Monash University in Malaysia and my local advisor is Professor Rúnar Vilhjálmsson at the University of Iceland.

Economic downturns occur regularly throughout the world, but the situation in Iceland, whereby three of the biggest domestic banks were nationalised at the same time, has not many precedents in the world. The situation therefore gave rise to an opportunity to investigate how an economic meltdown affects an advanced health system. Research that has been conducted and covers financial crises and health has mainly comprised quantitative studies, in which the impacts on populations' health and well-being have been investigated. Similar research will most probably be executed in Iceland later.

The aim of my research is to examine the initial response towards the health system in an "emergency situation" like the one Iceland is experiencing. The objective is to explore the decision making process in the first months after the economic crisis commenced; how the decisions were executed and who were involved in the process. Preliminary quantitative data from the health care services will also be examined. A study of this kind has not been conducted before, to the best of my knowledge, and it is therefore an important study for the global health research society. The aim is for the results to be published, both in domestic and international journals.

This research is important to me for two reasons: (i) for personal motives, as this is part of my DrPH work and; (ii) it will hopefully add knowledge to the research and political society regarding what can be learned from the Icelandic case. Many countries are now facing economic downturns and have to adapt their health systems to recessions; this is one of the issues the World Health Organization is currently discussing.

I sincerely hope that you will participate in my research, which is an unstructured interview comprising five questions. I will ask for permission to record the interview. I will call you in the next few days and hope we can find a convenient time for an interview.

Respectfully yours,

Anna Elísabet Ólafsdóttir

I am the former director of the National Public Health Institute of Iceland, but am now studying for my DrPH at Brunel University, West London.

Appendix 5: Participant's information sheet in the Icelandic case.



The impact of the economic downturn on the Icelandic health system

Research at Brunel University in London.

Researchers: Anna Elísabet Ólafsdóttir and Pascale Allotey

Dear Participant,

First of all, I want to thank you for participating in our research.

I would appreciate an open and honest discussion about the impact of the economic downturn on the Icelandic health system. Please feel free to discuss the issue in the way you like, but we would appreciate it if you cover the following issues:

- What were the first governmental reactions (especially by the health authorities), towards the health system as the economic crisis commenced?
- How did the Ministry of Health and its minister cooperate with its institutions and other stakeholders in the aftermath of the economic crisis?
- Discuss the decision making process and who/what were the key influential issues.
- What were the conclusions and have the decisions been implemented?
- Will the first action taken have any consequences for equity in health or access to health care?

With your permission, the meeting will be recorded. I am the only person who will work with the audio recordings from the meeting. The records will be destroyed when the research has been approved by Brunel University. The research is anonymous.

Participants can withdraw from the study at any time by contacting me via e-mail or telephone.

Anna Elísabet Ólafsdóttir
Mobile: +354 772 6607
anna.olafsdottir@brunel.ac.uk

Appendix 6: Ethics approval from Brunel University for the Icelandic case.

School of Health Sciences and Social Care
Head of School
Professor Lorraine De Souza PhD, MSc, BSc, GradDipPhys, FCSP
Chair of Rehabilitation

Brunel
UNIVERSITY
WEST LONDON

Brunel University, Uxbridge,
Middlesex, UB8 3PH, UK
Telephone +44 (0) 1895 274000
Fax +44 (0)1895 269853 – Health
+44 (0)1985 274348 – Biosciences
Web www.brunel.ac.uk

Anna Olafsdottir,
DrPH Student,
School of Health Sciences & Social Care.

1/12/11

Dear Anna,

I write formally to confirm that studies included within your DrPH thesis were reviewed and approved by the DrPH ethics review system that was in place prior to the commencement of your data collection.

Yours sincerely

Christina R. Victor

Professor of Gerontology & Public Health,
Director of the DrPH programme.

Appendix 7: An e-mail from the director of the National Bioethics Committee Office in Iceland

E-mail

Page 1 of 1

E-mail

Subject: Fyrirspurn um leyfisskyldu
Received: 20-Mar-09 3:35:39 PM
From: <eirikur.baldursson@vsn.stjr.is>
To:
Cc:

Sæl Anna

Við höfum velt fyrir okkur erindi þínu. Niðurstaðan er sú að ef þú ætlar ekki að fá þátttakendur, t.d. í rýnihópum til þess að ræða eigin sjúkdóma og afleiðingar breytinga í heilbrigðisþjónustu í því samhengi þá er hér á ferð verkefni sem fellur utan verksviðs Vísindasiðanefndar.

Með bestu kveðjum

dr. Eiríkur Baldursson
framkvæmdastjóri Vísindasiðanefndar
www.visindasidanefnd.is

Appendix 8: The course of events in the Icelandic case in chronological order.

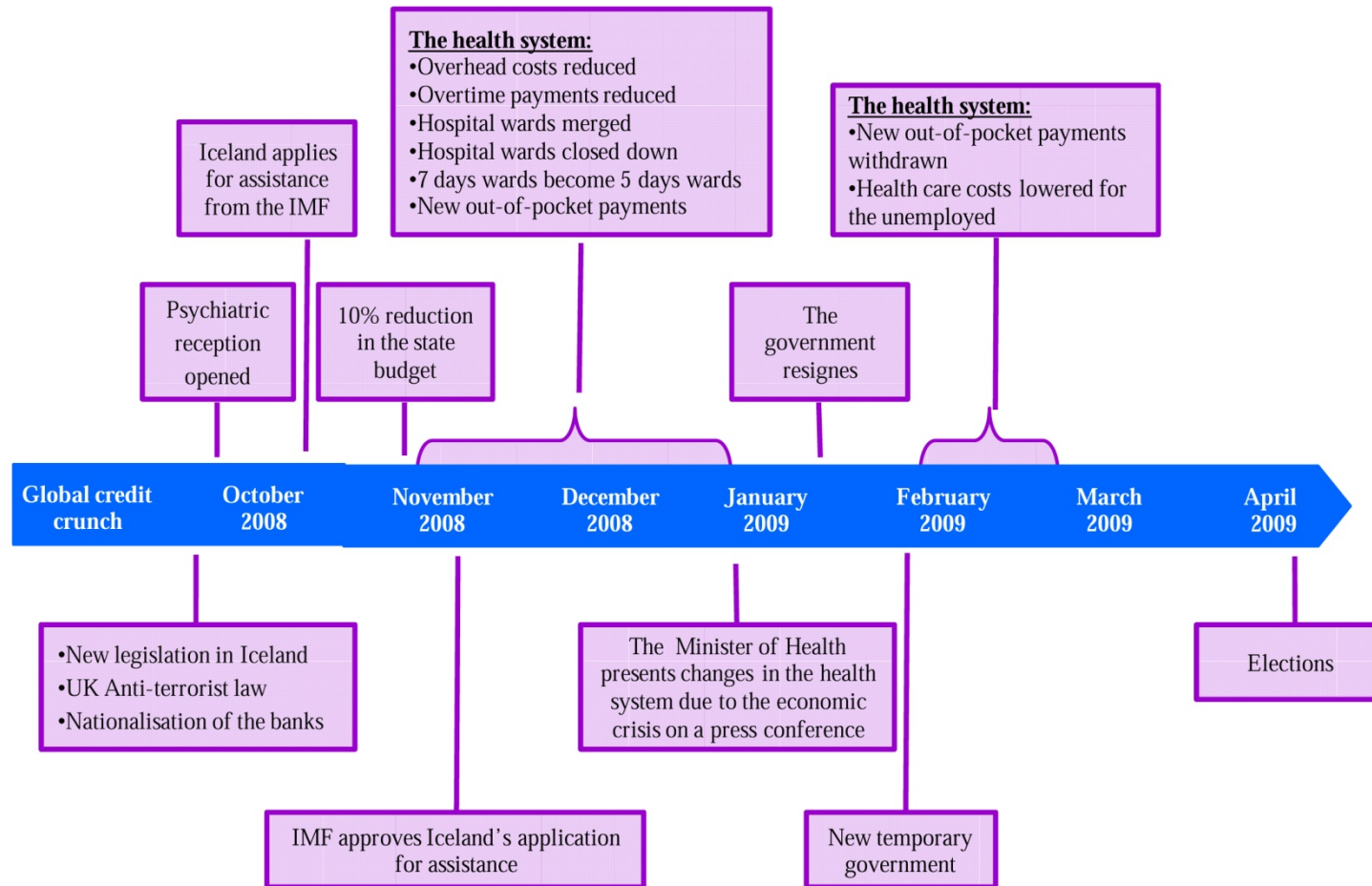


Figure 26: The course of events in the Icelandic case in chronological order.

Appendix 9: The situation in Iceland in February 2011

The economic crisis has been an endurance test for the Icelandic nation. There is a prevailing tension within the society and the nation is divided on almost all proposals presented by the government. The Bishop of Iceland described the national mood as full of “suspicion” and “mistrust” and “lacking respect,” at the same time as he encouraged the nation to put aside feelings like “anger”, “hate” and “revenge” in rebuilding society (Sigurbjornsson 2011). Unemployment has intensified and reached 8.1% in 2010; an unemployment rate that has not been seen for decades (Directorate of Labour 2011). Poverty statistics are limited in Iceland, but there is a clear sign of increased distress and hardship for some households. Non-governmental organisations, like the Church Aid and the Committee of Motherhood, have distributed food among those in most need and queues have elongated; a situation that the President of Iceland called a “shameful blot” on the nation in his New Year Address 2011:

“The economic depression, the “collapse”, as we call it, has constrained the livelihoods of thousands of Icelanders such that every week, many people stand in line waiting for food handouts. Poverty has been with us for a long time, but widespread financial difficulties have now made queues for food a shameful blot on our society.”

Olafur Ragnar Grimsson, the President of Iceland (Grimsson 2011)

Iceland’s governmental debt was, at the end of 2010 1,566 billion Icelandic kronur (USD\$12, 5 billion) representing 104.8% of the country’s GDP (Statistics Iceland 2011c), but one of the prerequisites for the International Monetary Fund’s (IMFs) assistance was a reduction in governmental expenditures. As a response to that, some governmental institutions and ministries have been merged including the Ministry of Health that was merged with the Ministry of Social Services, forming the Ministry of Welfare from January 1st 2011. The Ministry of Welfare was allocated

209.4 million Icelandic kronur (USD\$1.7 million³⁸) for its first operational year, which represents 41% of the state's expected expenditure in 2011 (Ministry of Finance 2011). This is a 9% reduction from the total amount allocated to both the Ministry of Health and the Ministry of Social Services in 2010, when it was 231.8 million kronur (USD\$1.9 million)³⁹.

Governmental financial allocations to hospitals have been reduced and hospital management requested to adjust the operational costs accordingly. The financial allocation to the biggest hospital in Iceland, Landspítali University Hospital, had already been decreased by 11% in the 2009 budget, with further reductions of 4% in the 2010 budget and a further 0.1% in 2011, as illustrated in Figure 27 (Icelandic Parliament 2007a; Icelandic Parliament 2008b; Icelandic Parliament 2009a; Icelandic Parliament 2010a). All numbers have been adjusted to 2011 using the consumer price index from Statistics Iceland (Statistics Iceland 2011b). Landspítali University Hospital has been run at a deficit for some years, but preliminary information suggests a 0.1% surplus in 2010 (Landspítali University Hospital 2011b). Costs have been cut by making 670 individuals redundant since early 2009, by reducing medical costs by 12%, by decreasing the number of tests and examinations, resulting in a 17% reduction and by reducing the length of hospitalisation per patient from 6.9 days to 6.7 days (Landspítali University Hospital 2011b).

The reduction in financial allocations was at first milder at the second biggest hospital in Iceland, the District General Hospital in Akureyri (northern Iceland). Financial allocations were reduced by 6% in 2009, by a further 4% in 2010 and 0.5% in 2011 (Figure 27) (Icelandic Parliament 2007a; Icelandic Parliament 2008b; Icelandic Parliament 2009a; Icelandic Parliament 2010a).

³⁸ The currency rate used is USD\$1 = 125 kronur, which is the same as the currency rate used in the case study. However, the currency rate has changed and in January 2011 was USD\$1 = 118 kronur.

³⁹ Numbers are taken directly from the state budgets, but it is important to keep in mind that the inflation rate was around 6% in 2010 (Statistics Iceland 2011b).

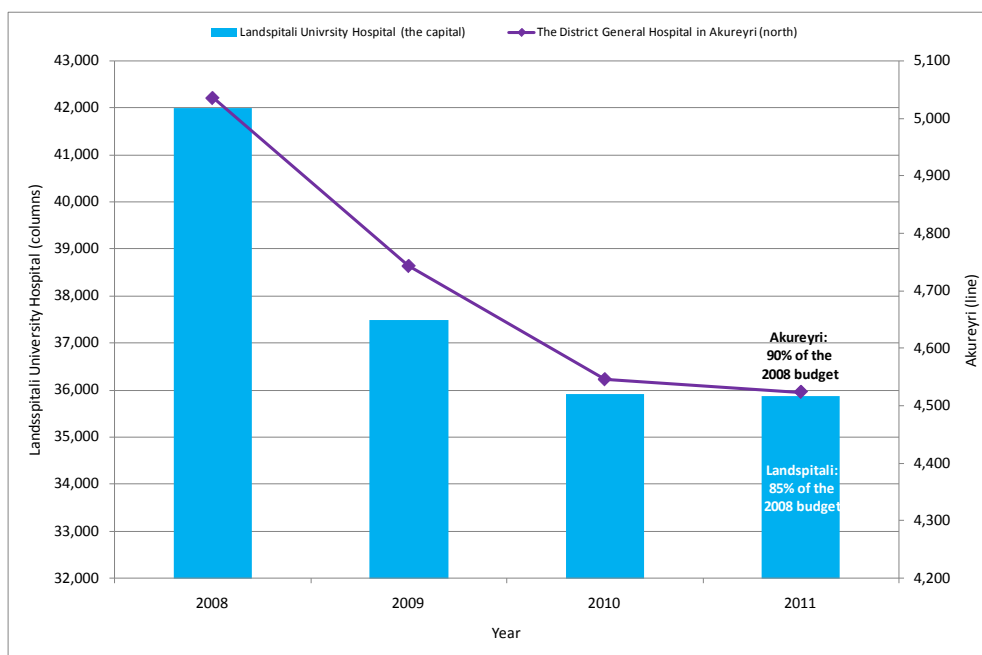


Figure 27: Financial allocations to the Landspítali University Hospital (columns) and the District General Hospital in Akureyri (northern Iceland) (line) according to the State budgets. All numbers are adapted to 2011 using the annual average consumer index provided by Statistics Iceland.

The decrease in financial allocations to suburban and rural health care institutions was introduced later with the main reduction in financial allocations occurring in 2010 to 2011. On average, rural health centres, often consisting of both a small hospital and a primary health care unit, had to shrink costs by 9% on average from 2010 to 2011. Hardest hit was St. Josepsspítali in the capital area, which had to reduce costs by 27% between 2010 and 2011, leaving the organisation with only 65% of the financial resources it had in 2008. Other health centres were not hit as hard, as illustrated in Figure 28 (Icelandic Parliament 2007a; Icelandic Parliament 2008b; Icelandic Parliament 2009a; Icelandic Parliament 2010a).

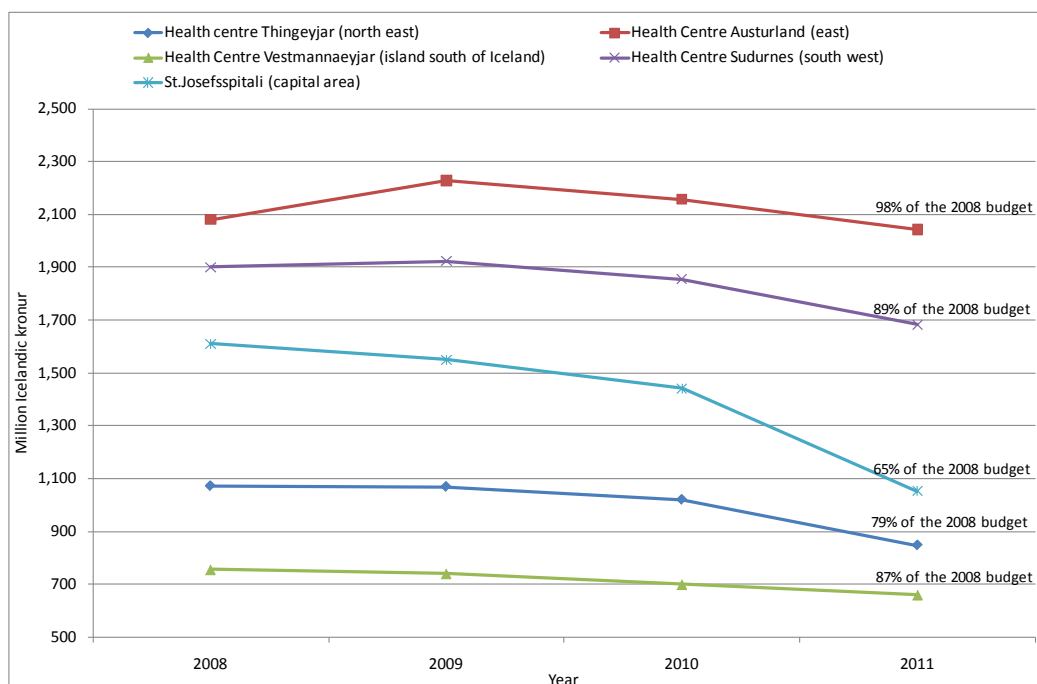


Figure 28 : Financial allocations to selected health centres according to State budgets in 2008, 2009, 2010 and 2011. All numbers are adapted to 2011 using the annual average consumer index presented by Statistics Iceland.

In 2011, primary health care in the capital area was allocated 82% of the 2008 budget. The primary health care institutions have applied different methods to adjust to the reduced budget and managed to keep costs within the allocations in 2010 (Primary Health Care of the Capital Area 2010). Nevertheless, one of the problems that the primary health care institutions will have to face in the nearer future is a lack of general practitioners (GPs). Recently, the primary health care institution in the capital area advertised seven posts for GPs, but no-one applied for a single position (Directorate of Health 2010). Country wise, health care centres have tried to compensate for the lack of GPs by employing health professionals based on individual contracts or contracts with Landspítali University Hospital. In some instances, specialists have taken posts as GPs.

Emigration reached new levels in both 2009 and 2010, summits that have not been seen in Iceland since the early 19th century (Statistics Iceland 2011a). Among these emigrants are health professionals, some of whom have moved away and taken up a new profession in another country, while others have taken part-time work abroad. Doctors, who are overseas developing different specialisations, are reluctant to

return to their home country, which exacerbates the situation. A survey among health professionals indicated that 20 medical doctors had moved away since early 2009 (Directorate of Health 2010). In this context, it must be kept in mind that Iceland is a small country with less than 320,000 inhabitants. However, the number of physicians per 10,000 population was 37.3 in 2006 compared to 32.5 per 10,000 population in Europe (World Health Organization 2010).

It is still too early to evaluate the impact of the economic crisis on health outcomes, but currently there are no indications of any major changes in health outcomes that could be attributed to the economic crisis (Landspítali University Hospital 2011a). On the contrary, there are some positive changes related to well known determinants of health, such as smoking habits and alcohol usage. Taxes on both tobacco and alcohol have been raised and consumption has reduced steadily since 2008, as presented in Table 17.

Table 17: Changes in daily smoking habits and domestic sale of alcohol from 2008 to 2011.

	2008	2009	2010
Daily smoking among 15-79 years (%) ¹	17.8	15.8	14.2
Domestic sale of alcohol litres per inhabitant ²	4.88	4.68	4.34

¹ from the Public Health Institute of Iceland

² from Statistics Iceland and the State Alcohol and Tobacco Company of Iceland

It will be interesting to follow the adaptation of the Icelandic health system to the decreased budgets and observe how it will affect the population's health in the long run. It is likely that the Icelandic health system, which has delivered one of the best health outcomes seen with a global perspective, was not run as efficiently as possible and that the economic crisis has provided an opportunity for health system reform, forcing the system to work more efficiently. In an OECD report from 2008, it was suggested that Iceland could reduce its health care spending by one-third without compromising health outcomes (Organisation for Economic Co-Operation and Development 2008).

Appendix 10: Health system financing

To ensure access to equitable and effective public health interventions and personal health care regardless of the ability to pay, a well structured financial mechanism is essential. Health system financing is based on the following three main principles: (i) revenue collection, (ii) pooling of resources (risk diversification) and (iii) purchasing of interventions (World Bank 2006). A framework demonstrating these three main principles and the respective flow of funds is shown in Figure 29 and will be discussed in more detail in this section.

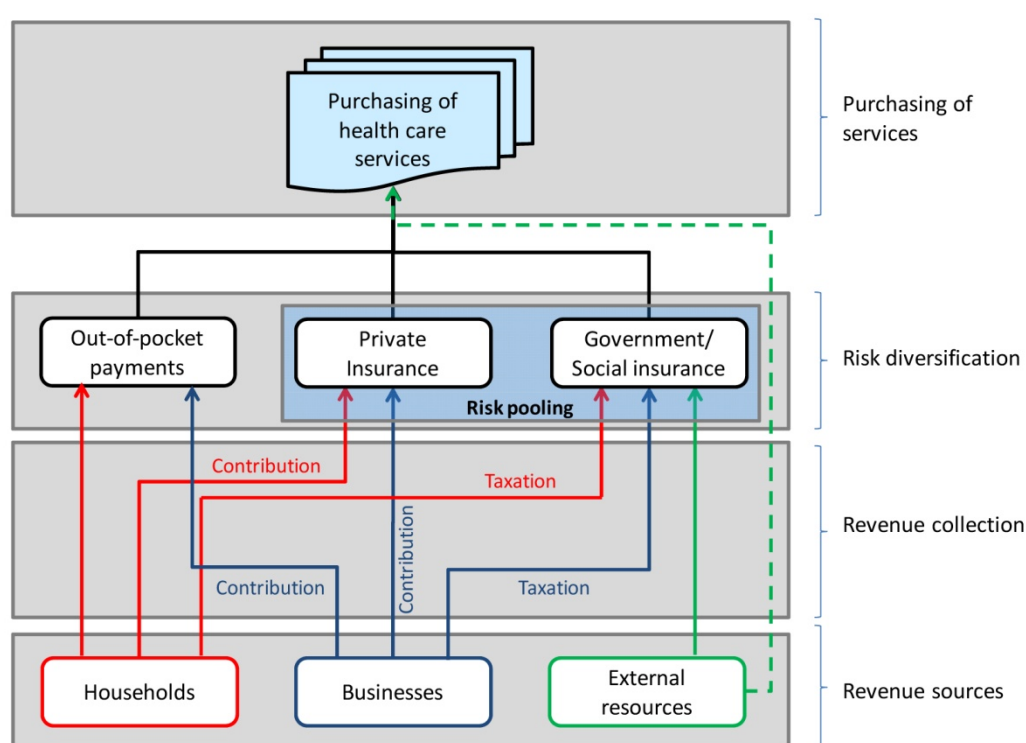


Figure 29: A framework for health care financing composed of revenue collection, risk pooling and health care purchasing.

Revenue collection involves the process of collecting money from revenue sources, which are households, companies or external resources such as donors⁴⁰. The revenue pool (risk pooling) can be state funded, based on revenues collected through general taxation and/or collected through salary related income in the case

⁴⁰ Donations are usually in the form of narrowly defined projects like building a hospital or immunising certain age groups, although lately some donors have been moving towards a more holistic approach, thus supporting long term development.

of mandatory social health insurance. The tax can either be a percentage of disposable income (progressive taxation) or a flat rate (proportional taxation). If the tax is flat and everybody pays the same amount, regardless of their financial capacity, those financially worse off will not be supported by those who are better off (rich-poor-subsidisation). An additional method of risk pooling is by voluntary contribution to private health insurance. Such contributions are usually related to risk assessment conducted by private insurance companies, with rising premiums for those at increased risk. Most high income countries use general taxation and/or mandatory social health insurance. Low income countries in general rely more on out-of-pocket payments (World Bank 2006; World Health Organization 2000). The state funded system, which is the most widespread form of health care financing, provides universal access to health care and is usually based on several financing resources. According to the World Bank, state funded systems have the potential to be the most equitable form of health care financing (World Bank 2006; Mackintosh 2007).

If the health system financing mechanism involves risk diversification (pooling), the revenues go into a pool of prepayments, which are redistributed to the members of the pool once they purchase health care services. Out-of-pocket payments are not part of the pooling mechanism and are thus not risk diversified. Out-of-pocket payments are based on the “pay as you use” principle, which is the most unsuitable form seen from an equity point of view. It gives no financial protection to the poor and is the most regressive form of health care financing (World Bank 2006; McIntyre 2007; Mooney 2003). According to the World Health Organization, out-of-pocket payment should not be used unless no other alternatives are available (World Health Organization 2000).

As demonstrated in Figure 29, risk pooling is a fundamental prerequisite for fair financing and equity in health. Its core purpose is to redistribute the financial resources collected from members of the pool, based on their needs. Risk pooling therefore takes unpredictable individual financial risk, associated with the purchase of health care services, and makes it predictable, thus protecting individuals from potential catastrophic financial consequences of illnesses (World Bank 2006). Risk

pooling is based on the idea of cross subsidisation between income groups, whereby the rich support the poor and the low risk individuals support those who are high risk. This kind of pooling mechanism even allows the poor low risk individual to subsidise the rich high risk individual in some cases; societies that are interested in high levels of equity are usually indifferent to who is subsidised by whom as long as everybody accesses the treatment they need to live a healthy life (World Health Organization 2000).

It is reasonable to state that the bigger the pool, the more risk diversification will be achieved. However, this does not imply that small pools are of little value as, irrespective of their size, pools will always diversify risk and thus be beneficial to participants. Participation in a pool, no matter the size, is always better than out-of-pocket payments.

Purchasing of health care interventions/services is the ultimate part of the health system financing mechanism. The purchasing part plays an essential role in the overall efficiency of the health system, as it determines the quantity and the quality of the health system service provided for the money spent. Purchasing, which can be by both public and private health care providers, should be based on a well-structured incentive-based payment system, preferably featuring separation between the purchaser and the buyer (World Bank 2006).

Privately owned health care institutions are usually set up for profit, which means following the principles of the free market;⁴¹ however, because of inherent market failures in health care, it is generally accepted that it cannot solely be operated along free market principles (Wonderling, Gruen & Black 2010; Mooney 2009; Folland, Goodman & Stano 2007; Hsiao 1995; Mooney 2003). One of the significant market failures is the asymmetry of information, which exists because of the gap in knowledge between health care providers and the consumers (patients) (Wonderling, Gruen & Black 2010). Well educated health professionals have the advantage of more and better information than patients, leaving the latter with

⁴¹ The term “free market” is used to mean an economic mechanism for ensuring efficient allocation of resources.

inadequate information to make informed decisions in their best interests. If a free market is to be efficient, equal information for both the provider and the purchaser is a prerequisite (Wonderling, Gruen & Black 2010; Mooney 2009). The doctor must act as an agent and inform the patient of the best possible treatment; a problem often called the agency challenge. The asymmetry of information and agency challenge has the potential to influence demand, making it supply-induced, a failure that must be addressed when establishing a comprehensive purchasing mechanism that is based on appropriate mixtures of incentives and cost-effectiveness calculations (Mooney 2009; Wonderling, Gruen & Black 2010).

There are several other failures in the health care market that will not be discussed in this thesis⁴². It will only be emphasised at this point that imperfection in the health care market requires governments to intervene and take action to compensate for the market failures.

⁴² Market failures within the health care market are also related to public health: “externalities” and “public goods”. Externalities play a role when it comes to communicable disease and caring. If treatment of communicable diseases is left to individual consumption, it will lead to under-consumption, which is bad for society as a whole (Mooney 2009). Public good is a term used for goods and services that can be consumed simultaneously by everyone and from which no one can be excluded (Wonderling, Gruen & Black 2010). An example of public goods within the health sector is the fight against malaria transmission when areas are sprayed. The free market can hardly deal with such situations, as people hope to benefit without having to contribute to the cost, leaving us with the incentives for “free-riding” (Wonderling, Gruen & Black 2010). In fact, everybody would benefit from this, which justifies governmental intervention (Mooney 2009).

Appendix 11: Participants' information sheet in the Malaysian case.



Participant Information Sheet

Study title: *The impact of health financing policies on health system performance and equity: the case of Malaysia.*

You are being invited to take part in a research study. Before you decide whether you will participate, it is important for you to understand why the research is being carried out and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Principal Researcher:

Ms. Anna Elisabet Olafsdottir (Brunel), e-mail: anna.olafsdottir@brunel.ac.uk

Academic Supervisors:

Dr. Subhash Pokhrel (Brunel), e-mail: subhash.pokhrel@brunel.ac.uk

Professor Daniel Reidpath (Monash), e-mail: daniel.reidpath@med.monash.edu.my

Professor Pascale Allotey (Monash), e-mail: pascale.allotey@med.monash.edu.my

Chair of the School Research Ethics Committee:

Elizabeth Cassidy, e-mail: elizabeth.cassidy@brunel.ac.uk

The study is a doctoral study towards the Doctorate in Public Health (DrPH) programme at Brunel University, West-London in cooperation with Monash University in Malaysia. This study has been approved by the School of Health Sciences and Social Care Research Ethics Committee, Brunel University, UK.

The aim of the study is to analyse Malaysian health financing policies with the purpose of exploring how their decision making process and implementations have affected health system performance and the dispersion of health expenditure

between users, insurance, the government and others. As you have been an active player in public health policy, it would be of great value for our research if you took part in it. As participation is entirely voluntary, it is up to you to decide whether or not to take part. If you do decide to participate, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason.

Your participation would be through an interview, which takes a maximum of one hour and will take place at your place of work or in another mutually agreed convenient location. We would appreciate an open and honest discussion about health financing policies in Malaysia, how the policy process has occurred, who has contributed to the policy making and how. Please feel free to discuss the matter in the way you like, but we would appreciate it if the discussion could touch upon the following questions:

1. Have the health financing policies taken into consideration various needs or requests from different ethnic or socio-economic groups or other valid issues according to the relevant **contexts**?
2. Has the decision making **process** involved (fair) partnership and who have been the key influential **actors**?
3. What is your opinion of the performance of the Malaysian health system (health outcomes and distribution)?

We hope you will allow us to record the discussion, as it will make subsequent analysis easier. Anna Elisabet Olafsdottir is the only person who will work with the transcripts. The records and transcripts based on them will be destroyed when the final report has been approved by Brunel's Thesis Advisory Committee. The study is anonymous and participants will not be identified in any documents related to the study. However, anonymised direct quotations might be used in the final report and articles based on it. Participants can withdraw from the study at all stages. If you wish to take part, please contact Anna Elisabet Olafsdottir through e-mail at anna.olafsdottir@brunel.ac.uk or by calling +354 772 6607.

On behalf of the research team, I would like to thank you for participating in our research.

Anna Elisabet Olafsdottir

Appendix 12: Ethics approval from Brunel University for the Malaysian case.

Brunel
UNIVERSITY
WEST LONDON

School of Health Sciences and
Social Care

Research Ethics Committee

School of Health Sciences and
Social Care
Brunel University,
Uxbridge
Middlesex UB8 3PH
Telephone: +44 (0)1895 274000
Web www.brunel.ac.uk

12 July 2010

Proposer: Anna Elisabet Olafsdottir DrPH Research student

Title: The impact of health financing policies on health system performance and equity: the case of Malaysia

Reference: 10/06/DPH/04

Letter of Approval

The School Research Ethics Committee has considered the amendments recently submitted by you in response to the Committee's earlier review of the above application

The Chair, acting under delegated authority, is satisfied that the amendments accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- *The Brunel University Insurance and Indemnity for Negligent and Non-negligent actions must be adopted for the purposes of this study.*
- *The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee.*

NB:

- **Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the School of Health Sciences and Social Care Research Ethics Committee.**
- **The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the School Research Ethics Committee**
- **Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.**
- **The School Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.**

David Anderson-Ford
School Research Ethics Officer
School of Health Sciences and Social Care

Appendix 13: Monash supporting letter.

MONASH University
Malaysia



Statement of the role of Ms Anna Elisabet Olafsdottir (Visiting Scholar – Global Public Health)

School Contact – Professor Pascale Allotey, Professor Daniel Reidpath

Why the incumbent?

Ms Olafsdottir has been working with Prof Pascale Allotey and Prof Daniel Reidpath since 2007 as a Public Health Doctoral Trainee. The collaboration has been based on the analysis of World Health Survey data, analysis of the health impacts of the economic meltdown on the Icelandic health system and a broad analysis of efficiency and equity in health systems.

Profs Allotey and Reidpath left the UK to take up positions with Monash University in September 2009. Ms Anna Elisabet Olafsdottir is being invited for a brief period to Monash University Sunway in order for Allotey, Olafsdottir, and Reidpath to complete the work that was started in 2007.

Ms Olafsdottir is the past Executive Director of the Institute for Public Health in Iceland and is currently a Senior Public Health Consultant in Iceland.

Description of responsibilities

It is expected that over the 6 months from January to June 2010, Ms Olafsdottir will continue to work towards the completion of her DrPH thesis. She will complete the analysis of the data, prepare draft reports for the Iceland government and the World Health Organization and submit research papers to peer reviewed journals for publication.

Ms Olafsdottir will also join the global public health team as part of the work towards her final placement for the DrPH. Anna's work will be predominantly based on documentary analysis of Malaysian health systems policy data, with supplementary data on policy context through a handful of key informant interviews. Her work is in line with work we are doing with the Ministry of Health here towards our understanding of the policy context and towards developing collaborative research programs. No ethics approval is required for this work.

Anna will also be required to present a number of research seminars to the staff and HDR students at the school of medicine on:

- Equity and efficiency in health systems
- Health effects of the global financial crisis
- Comparative health policy analysis across high, middle and low income countries

Position

As a visiting scholar to Monash and a public health doctoral trainee with Brunel University in the UK, Ms Olafsdottir will not be employed or paid by Monash University. She will be working under the supervision of Prof Pascale Allotey who is Associate Director of Monash Global Health (MIGHI) and with Prof Daniel Reidpath who is Director of Public Health. Both Monash Global Health and the Global Public Health Research Strength fall within the Research Activities of the School of Medicine headed by Prof Iekhsan Othman.

Tan Sri Jeffery Cheah School of Medicine
Jalan Lagoon Selatan, Bandar Sunway, 46150
Selangor Darul Ehsan, Malaysia
Telephone +603 5514 6300
www.monash.edu.my

A campus of Monash University

Appendix 14: Price list and deposit requirements at Kuala Lumpur hospital.

Table 18: A price list from Kuala Lumpur hospital.

Class	Daily Ward Charges (RM)		
	Public/Private firm (RM)	Government/Pensioner (RM)	Non Citizen (RM)
1	80 (\$22.15) (1 bedded)	10(\$3.14) / 5 (\$1.57)	160 (\$50.29)
	60 (\$18.86) (2 bedded)	8 (\$2.51) / 4 (\$1.26)	115 (\$36.15)
	40 (\$12.57) (≥4 bedded)	6 (\$1.89) / 3 (\$0.94)	80 (\$22.15)
2	30 (\$9.43)	3 (\$0.94) / 1.5 (\$0.47)	60 (\$18.86)
3	3 (\$0.94)	FREE	40 (\$12.57)

A down payment is required as a guarantee for health care services, as shown in Table 19:

Table 19: Deposit requirements for admission at Kuala Lumpur hospital.

Citizen			
Ward Class	Medical (RM)	Surgery (RM)	Maternity and O&G (RM)
First class	700 (\$220.02)	1100 (\$345.42)	800 (\$251.22)
Second class	200 (\$62.86)	400 (\$125.61)	350 (\$110.00)
Third class	20 (\$6.29)	30 (\$9.43)	15 (\$4.71)
Non – Citizen			
First class	1400 (\$439.63)	2200 (\$690.82)	1400 (\$439.63)
Second class	600 (\$118.41)	1000 (\$314.02)	1000 (\$314.02)
Third class	400 (\$125.61)	800 (\$251.22)	800 (\$251.22)

Appendix 15: Full analysis of the Malaysia Plans.

The 7th Malaysia Plan (1996 – 2000)

Political context: The political intention at the time the plan was made was to increase and accelerate corporatisation and privatisation of hospitals and medical services (Economic Planning Unit 1996a). The political ideology resembled the neo-liberalistic philosophy that privatisation and corporatisation increases efficiency in the health care system and that it helps to retain qualified and experienced manpower. At the same time, the government announced that it would gradually reduce its role in health care provision, although ongoing provision of public health care services was pledged.

Economic context: The plan predicted an increase in future health care costs which would require reconstruction of the health system financing mechanism. The 7th Malaysia Plan therefore proposed the implementation of a health financing scheme during the planning period (1996-2000). The aim of the health financing scheme was to reduce the financial and administrative burden of the public sector - who was to take over the cost burden was not documented in the plan. This was not the first time a health financing scheme has been on the agenda in Malaysia. It had been under discussion for at least 10 years (Chee 2008) at that time.

Public health interventions were prioritised in the 7th Malaysia Plan, which highlighted health promotion and prevention in order to reduce future expenditure on curative health care. This was to be done by improving health education and mass media campaigns, as well as community based programmes.

Equity context: The main objective of the Malaysia Plans has always been to reduce poverty and income disparities between ethnic groups, income groups and regions and to emphasise growth with equity (Economic Planning Unit 1996a). Nevertheless, the income disparity widened between social groups during the 6th plan period (1990 – 1995) (Economic Planning Unit 1996a). The 7th plan pledged unhindered access to health care services for low-income groups, assured through governmental assistance, and emphasised the intention to construct new health

centres in rural areas, as well as to increase numbers of mobile dispensaries, with the aim of extending health services in underserved parts of Malaysia (Economic Planning Unit 1996a).

The plan recognised an increase in the utilisation of health care services from migrant workers, who were claimed to “affect the provision of health care for Malaysians” (Economic Planning Unit 1996a, p. 540). The plan presented the political intention to charge migrant workers in Malaysia twice the amount paid by local people for health care services.⁴³

The 8th Malaysia Plan (2001 – 2005)

Political context: During the 7th Malaysia Plan there was an increase in public and private health care facilities in Malaysia. However, the private sector was almost entirely located in urban areas (97.8%) and focused on providing specialised health care services using modern facilities (Economic Planning Unit 2001). To meet the shortage of health care services in rural areas, the 8th plan pledged enhanced public health services in these areas. Nonetheless, the private sector was also encouraged to expand its services to complement the public sector (Economic Planning Unit 2001). To ensure access to private health care services, the government committed to improving regulations under the Private Health care Facilities and Services Act from 1998.

Economic context: For reasons not explained in the plan, the health financing scheme was not implemented during the 7th plan as intended and reappeared in the 8th plan. It was highlighted that, in order to ensure quality health care at a reasonable cost in both the public and private health care sectors, a new mechanism was needed (Economic Planning Unit 2001). It was stated in the plan that “Cost sharing concepts through health care financing schemes will be introduced to provide consumers with a wider choice in the purchase of health services from both the public and private sector. In this regard, a suitable mechanism to institute and

⁴³ The 7th Malaysia Plan presented the intention to recruit more foreign nurses to meet the shortage of nurses in Malaysia. No comments were made on how they would be charged if they needed to use Malaysian health care services (Economic Planning Unit 1996a).

manage a health care financing scheme will be implemented” (Economic Planning Unit 2001, p.495).

Equity context: Attention was given to the problem of the unequal distribution of manpower within the health care sector. The intention was to make an effort to address the shortage of health care personnel in general, but especially within the public health sector and in rural areas (Economic Planning Unit 2001). The unequal distribution of manpower was, inter alia, caused by increased number of professionals seeking jobs within the more lucrative private sector, which was primarily located in urban areas. In order to achieve a more equal distribution of health care personnel, the aim was to improve terms and conditions for health professionals and to provide a more conducive working environment, as well as to upgrade facilities in the public hospitals and clinics.

The 9th Malaysia Plan (2006 – 2010)

Political context: A political objective of improving the nation’s health is presented in the 9th Malaysia Plan and the government claims it will continue to provide facilities and to run programmes to improve the health status of the country. However, greater individual responsibility is said to be crucial to achieving better health (Economic Planning Unit 2006). Privatisation was still privileged in the 9th Malaysia Plan, although the exposition is more cautious. The plan pledged commitment from the Ministry of Health to continue to be the main provider of health care services for the nation (Economic Planning Unit 2006). This statement contradicts the statement in the 7th plan in which the intention was to gradually reduce the public sector’s role in health care provision.

Economic context: The health financing scheme was not implemented during the period of the 8th Malaysia Plan as scheduled and no explanation was given as to why this did not occur. The health financing scheme therefore reappeared, once again, in the 9th plan⁴⁴ with the words “The implementation of the health financing mechanism

⁴⁴ The health financing scheme was not implemented as pledged in the 9th plan and reappears once again in the most recent plan, the 10th Malaysia Plan (Malaysia Plan 2011-2015; Economic Planning Unit 2010)

will further enhance accessibility and equity through the provision of high quality, efficient, integrated and comprehensive health coverage for the population” (Economic Planning Unit 2006, p.434).

Equity context: The government failed to improve the ratio of facility to population in rural areas, but it managed to increase the number of doctors serving the population. At the beginning of the 9th Malaysia Plan (2005), one doctor served 1,287 people but in 1995 the number was 2,153 individuals. The disparity between geographic areas had reduced although the difference was still considerably high; in 1999, 372 people were served by one doctor in Kuala Lumpur, while the number was 4,120 to one doctor in Sabah. In 2005 this difference had been reduced, with one doctor serving 396 people in Kuala Lumpur and 2,716 in Sabah (Economic Planning Unit 2001; Economic Planning Unit 2006).

No attempt was made to address the disparities in health outcomes between the different ethnic groups in the 9th plan. On the other hand, the ethnic groups are mentioned in the context of income disparities. It was said to be urgent to reduce socio-economic disparities, or national unity might be threatened and affect social stability (Economic Planning Unit 2006). In the 9th plan, special attention is paid to reducing asset and wealth disparities among the various ethnic groups: “Bumiputera equity ownership is targeted to attain between 20 to 25 per cent by 2010 in order to reach the ultimate target of at least 30 per cent by 2020” and “Appropriate measures will also be introduced to increase Indian equity ownership to 3 per cent by 2020” (Economic Planning Unit 2006 p.36).

Appendix 16: An overview of the analysis of the problems, politics, policies and actors in the Malaysian case.

Table 20: An overview of the analysis of the process and actors in Malaysia.

Multiple stream theory	Main findings of the three independent streams	Policy entrepreneurs
Problem stream	<p>Epidemiological transition causing both communicable and non-communicable diseases to be of burden in Malaysia. Positive development in average health outcomes, measured as life expectancy and under-five mortality rate, but less is known (at least publicly) about distribution of health outcomes in relation to socio-economic groups. Although health care services at public institutions are subsidised, the government only covers half of the total expenditure on health. The rest is paid by private expenditure, of which 80% is out-of-pocket expenditure. Specialised health care services might cause financial difficulties for patients, who then occasionally have to plea for financial assistance from their fellow countrymen in the newspapers. National survey indicates different health expenditure depending on: (i) ethnic groups, (ii) mean household income and, (iii) place of living.</p>	<p>The Economic Planning Unit under the prime minister has the leading role in policy making. Other powerful actors are from private organisations like private hospitals and professional organisations like the Malaysian Medical Association. Use of local health specialists is minimal and if they have been asked to participate they receive limited feedback or information on results and potential policy proposals.</p>
Politics stream	<p>No major changes have occurred in the political arena with a “monopolistic” political situation in which the same political party has held the leading position in parliament since independence, over half a century. Dominant political ideologies are based on neo-liberal philosophy which has induced privatisation in the health sector. Controversy seen in relation to ethnicity; the government runs the campaign “One Malaysia” at the same time as policy papers aim to favour selected ethnic groups. Freedom of expression is limited and newspapers are said to be linked to ruling parties, which forces free associations to rely more on blogs and their own websites to disseminate their opinions. Free association criticises the authority for lack of fair partnership (selective partnership) and opaque working procedures.</p>	
Policy stream	<p>The government has received several proposals on how a new health financing scheme might be structured, both from paid consultants and free associations like the Coalition Against Health Care Privatisation. None have been deemed feasible based on political views, although some advice has been based on the government’s policy papers like the “Vision for Health” policy.</p>	

Appendix 17: Health systems performance in sub-Saharan Africa: governance, outcome and equity

See the next 8 pages.

RESEARCH ARTICLE

Open Access

Health systems performance in sub-Saharan Africa: governance, outcome and equity

Anna E Olafsdottir^{1*}, Daniel D Reidpath², Subhash Pokhrel¹ and Pascale Allotey²

Abstract

Background: The literature on health systems focuses largely on the performance of healthcare systems operationalised around indicators such as hospital beds, maternity care and immunisation coverage. A broader definition of health systems however, needs to include the wider determinants of health including, possibly, governance and its relationship to health and health equity. The aim of this study was to examine the relationship between health systems outcomes and equity, and governance as a part of a process to extend the range of indicators used to assess health systems performance.

Methods: Using cross sectional data from 46 countries in the African region of the World Health Organization, an ecological analysis was conducted to examine the relationship between governance and health systems performance. The data were analysed using multiple linear regression and a standard progressive modelling procedure. The under-five mortality rate (U5MR) was used as the health outcome measure and the ratio of U5MR in the wealthiest and poorest quintiles was used as the measure of health equity. Governance was measured using two contextually relevant indices developed by the Mo Ibrahim Foundation.

Results: Governance was strongly associated with U5MR and moderately associated with the U5MR quintile ratio. After controlling for possible confounding by healthcare, finance, education, and water and sanitation, governance remained significantly associated with U5MR. Governance was not, however, significantly associated with equity in U5MR outcomes.

Conclusion: This study suggests that the quality of governance may be an important structural determinant of health systems performance, and could be an indicator to be monitored. The association suggests there might be a causal relationship. However, the cross-sectional design, the level of missing data, and the small sample size, forces tentative conclusions. Further research will be needed to assess the causal relationship, and its generalizability beyond U5MR as a health outcome measure, as well as the geographical generalizability of the results.

Background

In the World Health Report 2000, a health system is discussed in terms of “all the organizations, institutions and resources that are devoted to producing health actions” [1] (p xi). Notwithstanding this very broad description of a health system, when it comes to the analysis of health systems performance, the operational (nonprocess) approaches have tended to be narrow, focusing on those aspects of the system that relate directly to the delivery of healthcare. This is particularly apparent in the analyses of health systems performance

in high income countries [2-5]; and does not appear to have been materially influenced by the development of wider frameworks of analysis [6].

In high income countries the lack of distinction between a health system and a healthcare system may be appropriate. With few exceptions, the OECD countries and the high income non-OECD countries have stable governments and well developed national infrastructure, including functioning commercial and financial systems, embedded utility grids delivering clean water and energy; systems that facilitate communication and transportation; liveable national housing; a functioning judicial and educational system; etc. In these settings, population health gains are part of a marginal game often based on

* Correspondence: anna@mikron.is

¹Centre for Public Health Research, Brunel University, West London, UK
Full list of author information is available at the end of the article

incremental improvements to an existing healthcare system that operates within the established context of high quality national infrastructure [7,8]. It is surprising, therefore, that the analysis of health systems performance in low income countries is also based largely on an analysis of systems that deliver care, despite the absence of the wider infrastructure required to support functioning healthcare systems [9-12].

Some would explain the focus by arguing the inappropriateness of looking at non-healthcare factors, because an analysis of non-healthcare factors effectively holds the health sector to ransom - making it accountable for those determinants of health that do not fall within its direct control [13]. The difficulty with this position is the overwhelming body of evidence that demonstrates the critical role of socio-economic, environmental, and other structural determinants of health [14]. Furthermore, ignoring broader structural factors assumes that one can "strengthen" a health system without regard to the economic, social, and physical context within which the delivery of healthcare is supposed to occur. If the health system is not held accountable for these larger determinants, argued Murray and Frenk, there will be no advocate in a country for addressing them (p.727) [13]. If not us then who?

For high income countries the question of the appropriateness of using the healthcare system as a proxy for a health system more broadly is moot [8]. In low income countries, however, with poor infrastructure, often weak political, commercial, financial and regulatory systems, to exclude non-healthcare system artefacts from the analysis of health systems performance relies on a much more tenuous foundation. It is, thus, unlikely that health systems performance in low income countries can be reduced to an analysis of the incremental health gains associated with improvements to the healthcare system. This point is clearly demonstrated again by ongoing challenges to universal access to healthcare [15].

In this article, guided by the broader definition of health systems provided by the World Health Organization, we attempt to refocus the analysis of health systems performance on one particular non-healthcare related issue. Specifically, we are interested in the relationship between governance and the overall performance of the health system. Other structural factors such as the finance and the economy [16], the education system [17,18], and physical infrastructure [19], have all been shown to be related to health systems performance. Governance, however, has emerged relatively recently as a measurable, structural artefact of countries that could be related to performance in a number of domains [20,21], including health [22]; but there is relatively little research that has looked at this.

Methods

An ecological analysis of cross sectional data was performed to look at the association between governance and health systems performance in the countries of the WHO African region (AFRO), independent of other known healthcare and non healthcare artefacts. The AFRO region was chosen because of the concentration of low income countries and the low probability that many of the countries will achieve the 2015 MDG targets [23]. The analysis was carried out using the most up-to-date, publicly available country-level data from the Statistical Information System of the World Health Organization (WHOSIS) [24] and the Mo Ibrahim Foundation (MIF) [25].

Measures

Outcomes

In keeping with the approach articulated in the World Health Report 2000 (p. xi) [1] health systems performance was operationalised in terms of the two separate dimensions: health outcome (i.e., death and morbidity) and health equity (i.e., the fairness of the distribution of health outcomes). The specific measure chosen for health outcome was a country's under five mortality rate (U5MR); i.e., the probability of a child's death before reaching the age of five. Although U5MR is a narrow operational definition of a population's health outcome, measures of child health such as the U5MR and the Infant Mortality Rate have been successfully used as general indicators of population health because they are sensitive to both structural changes and to rising epidemics that affect the wider population [26-29]. Data on U5MR were available for all 46 countries in the AFRO region.

A fair or equitable health system would be one that produces equivalent health outcomes for the rich and the poor [30,31]. Using the U5MR as a direct measure of health outcome, health equity was operationalised as the ratio of the U5MR in the wealthiest quintile to that of the U5MR in the poorest quintile. Data on the quintile ratio of the U5MR were available for 30 of the 46 countries in the AFRO region. Combining the two dimensions of health outcome and equity, a health system that was performing well would have a low U5MR and a U5MR quintile ratio approaching 1.

Governance

Governance was defined here as "a process whereby societies or organizations make their important decisions, determine whom they involve in the process and how they render account" (p1) [32]. Governance can be thought of as a structural artefact of a society; notwithstanding the fact that it is defined in terms of process. This is because governance occurs within social structures created for the purposes of facilitating the process.

Two AFRO-relevant sources of governance measures are available: the World Bank governance index [20] and the Ibrahim Index of African Governance [25]. These indices are based on data drawn from a diversity of international organisations, non-governmental organisations, survey institutes and think tanks. The Ibrahim Index was selected because of its greater contextual relevance to the AFRO region. It was developed in cooperation with the Harvard Kennedy School and it aggregates third party data (inter alia from the World Bank) and original data to create an index that ranks countries in Africa according to governance quality. The index assesses nations against 57 different measures. As the total index included child mortality two sub-indicators from the 2006 Ibrahim Index that did not include child mortality in the measure were used to operationalise governance: (i) "Rule of Law, Transparency and Corruption" (RLTC), and (ii) "Sustainable Economic Opportunity" (SEO)¹ [25]. RLTC captures governance matters such as the ratification of legal norms, judicial independence, and public sector corruption. SEO captures matters such as wealth creation, macroeconomic stability, and the "arteries of commerce" including the extent of the sealed road network, and the availability of electricity.

The Index as a whole, and the sub-scale were recently, independently analysed and found to be both reliable (i.e., the scales could be independently reproduced) and valid (i.e., they captured, and reflected the position of the countries on the specific "pillars" of governance) [33].

Covariates

Four additional, potential confounding factors were included in the analysis reflecting healthcare, financing/economy, education and physical infrastructure. For each factor a number of indicators were used. The choice of indicators was driven in part by pragmatics, including the availability of the data, and concordance with the underlying factor.

For healthcare there were three indicators: (i) the percentage of births attended by skilled health personnel, (ii) the percentage of one year olds immunised with three doses of diphtheria, tetanus toxoid and pertussis (DTP3), and (iii) the number of hospital beds per 10,000 populations. The first two of these indicators were most directly relevant to child health, but could broadly be regarded as indicators of the capacity of the wider healthcare system. For financing/economy two indicators were considered: (i) per capita total expenditure on health, and (ii) gross national income (GNI) per capita. Both financing indicators were measured in international dollars adjusted for purchasing power parity (ppp int.\$). For education three indicators were considered: (i) adult literacy, (ii) the net primary school enrolment

ratio male, and (iii) the net primary school enrolment ratio female. Net primary school enrolment ratio is the ratio of the number of children of official school age enrolled in school to the number of children of official school age in the population. The net primary school enrolment ratio male was ultimately excluded because it was highly correlated with the net primary school enrolment ratio female ($r = .95$). For physical infrastructure two indicators were included: (i) the percentage of the population with sustainable access to safe drinking water sources, and (ii) the percentage of the population with sustainable access to adequate sanitation.

Analysis

The analysis of the relationship between U5MR and the U5MR quintile ratio, and governance and the other covariates was conducted using multiple linear regression. The analysis was complicated by issues of confounding, associated with moderate to high inter-correlations between the covariates and governance, and missing data. This is discussed in more detail in the Results and related issues are described in the following.

The U5MR data were available for all the 46 countries in the AFRO region but the quintile ratio data was only available for 30 out of the 46 countries. The final sample size in the multivariate analyses was affected by missing data in the covariates.

A small sample size relative to the number of independent variables or covariates in a multivariate analysis can result in (a) over fitting, (b) unstable estimated coefficients, and (c) in the case of this analysis, an increased likelihood of a Type II error. A Type II error arises when one fails to reject the null hypothesis when it is actually false. A small sample size and many covariates reduce the likelihood of identifying a significant relationship between the health systems performance measures and the governance measures, even if such a relationship truly exists. Thus, the worst case scenario is that the analysis described is conservative, and fails to identify a relationship where one actually exists. This does not affect the risk of a Type I error, of falsely rejecting the null hypothesis.

Three linear models were fitted separately for U5MR and the U5MR quintile ratio. The first model measured the strength of the unadjusted bivariate association between the health systems performance, governance and the covariates reflecting healthcare, finance, education, and physical infrastructure. The second model measured the strength of the adjusted association between the health systems performance and the covariates in the absence of the measures of governance. The third model measured the strength of the association between the health systems performance and governance after adjusting for the covariates reflecting

healthcare, finance, education, and physical infrastructure. The estimated standardised coefficients (β 's) from the regression analysis are reported, because they simplify the comparison of the relative contribution of the independent variables and covariates. A sensitivity analysis was conducted to look at, among other things, the change in the estimates when covariates that reduced the sample size (due to missing data) were removed, and the relationship between U5MR and the U5MR quintile ratio with missing data in the covariates.

Prior to any formal analyses, GNI per capita was log-transformed to enable a better fit to the outcome measures.

Missing Data

Missing was an issue for U5MR and the quintile-ratio data because of the small size of the data set, and the percentage of the countries that did not have complete data for all covariates. Multiple imputation of missing data was attempted, but the data models failed to converge [34].

An examination of the relationship between U5MR and missing covariates, for countries with and without missing data, showed no significant relationship. Similar checks were made for the quintile ratio. Missing data, nonetheless, remain a concern and this is discussed further.

Results

An overview of the governance factor (two indicators), and the four covariate factors (a total of 9 indicators) as well as descriptive statistics for U5MR and the U5MR quintile ratio are shown in Table 1.

The U5MR ranged between 13 and 269 per 1,000 live births; and the quintile ratio ranged between 0.9 (slightly better outcomes for the poorest than the wealthiest quintile) and 4 (much worse outcomes for the poorest quintile). The countries wealth and therefore the ability to spend on health differed vastly. GNI per capita ranged from USD\$260 to USD\$16,620 and health expenditure from USD\$15 to USD\$869.

As a preliminary step, the relationship between the two selected dimensions of health systems performance (U5MR and the U5MR quintile ratio) was examined visually and using exploratory statistics. There was no discernible relationship between the two health systems performance measures and the correlation was low ($r = -.15$; 95% CI: $-.49-.22$). This reinforced the notion of separate outcome and equity dimensions in health systems performance.

Health Outcome (U5MR)

The U5MR data was modelled first (Table 2). Model 1 shows the bivariate relationship between, U5MR, the 9

Table 1 Descriptive statistics for U5MR, U5MR quintile ratio and indicators used in the analysis.

<i>Health Systems Performance</i>	n	Mean	SD	Min	Max
U5MR ¹	46	138.5	62.5	13	269
U5MR quintile ratio	30	1.8	0.66	0.9	4
<i>Healthcare</i>					
Births Attend %	45	55.5	22.2	6	99
DTP3 ² Immunisation %	46	77.5	18.7	20	99
Hospital Beds/10,000	44	13.7	11.2	1	57
<i>Finance</i>					
GNI ³ (untransformed) \$	45	2,923	3,995	260	16,620
Health Expenditure \$	46	153	200	15	869
<i>Education</i>					
Enrollments (female) %	45	69.7	20	36	100
Enrollments (male) %	45	74.1	15.8	40	99
Adult Literacy %	42	62.2	20.6	23.6	91.8
<i>Physical Infrastructure</i>					
Water %	46	67.7	16.2	42	100
Sanitation %	45	34.5	19.7	5	94
<i>Governance</i>					
RLTC ⁴	46	54.2	14.4	24.3	86.1
SEO ⁵	46	41.8	10.9	23.3	71.4

¹U5MR: Under five mortality rate.

²DTP3: Three doses of diphtheria, tetanus toxoid and pertussis.

³GNI: Gross National Income.

⁴RLTC: Rule of Law, Transparency and Corruption.

⁵SEO: Sustainable Economic Opportunity.

covariates, and the two measures of governance. In a bivariate analysis, the parameter estimate (β coefficient) is the same as Pearson's product moment correlation (r). All 9 covariates, and the measures of governance were significantly associated with U5MR. The two governance measures had the strongest bivariate associations with U5MR ($\sim .7$), followed by sustainable access to safe drinking water, the percentage of female children enrolled in school, and the number of hospital beds per 10,000.

Model 2 represents the multivariate model of the linear relationship between U5MR and the covariates in the absence of the measures of governance. This model was included so that a comparison could be made between it and a fuller model including the measures of governance. This would help to illuminate the strength of the relationship between U5MR and governance (i.e., when Model 2 and Model 3) are compared. Only 37 of the 46 countries which had U5MR data were available for this analysis, because of missing data in the covariates. Model 2 accounted for around 60% of the available variance (Adjusted $R^2 = .59$). After adjustment, only two of the covariates retained a significant association with U5MR, sustainable access to safe drinking water ($\beta = -.41$, $p = .03$) and the percentage of female children

Table 2 Three models estimating the relationship between health outcome (U5MR), governance (RLTC and SEO) and 9 covariates representing healthcare, finance/economy, education, and physical infrastructure¹

	U5MR					
	Model 1 (41 < n < 45)		Model 2 (n = 37)		Model 3 (n = 37)	
	β/r	p	β	p	β	p
<i>Healthcare</i>						
Births Attended %	-0.56	<.001	-0.27	.20	-0.31	.06
Immunisation %	-0.44	<.001	.00	.98	.01	.93
Hospital Beds/10,000	-0.63	<.001	.03	.90	.02	.90
<i>Finance</i>						
GNI ² (transformed) \$	-0.47	<.001	.09	.68	.41	.04
Health Expenditure \$	-0.50	<.001	.03	.87	.18	.27
<i>Education</i>						
Enrolments (female) %	-0.64	<.001	-0.57	<.001	-0.32	.02
Adult Literacy %	-0.55	<.001	.03	.86	.20	.19
<i>Physical Infrastructure</i>						
Water %	-0.67	<.001	-0.41	.03	-0.10	.52
Sanitation %	-0.35	.02	.10	.47	.15	.20
<i>Governance</i>						
RLTC ³	-0.70	<.001			-0.12	.42
SEO ⁴	-0.72	<.001			-0.90	<.001
Adjusted R-squared			.59		.76	

¹Model 1 examines the bivariate relationship between, U5MR, and the 9 covariates, and the two measures of governance. Model 2 examines the multivariate model of the linear relationship between U5MR and the covariates in the absence of the measures of governance. Model 3 replicated Model 2, with the addition of the two governance measures.

²GNI: Gross National Income.

³RLTC: Rule of Law, Transparency and Corruption.

⁴SEO: Sustainable Economic Opportunity.

enrolled in school ($\beta = -.57, p < .001$). The negative coefficients indicated that improvements in the availability of water, and improvements in the enrolment of female children in school, were significantly associated with reductions in U5MR. These two significant associations were in the expected direction.

Model 3 replicated Model 2, with the addition of the two governance measures ($n = 37$). The model accounted for around 16% more of the available variance (Adjusted $R^2 = .76$), and identified a significant association between one of the governance indicators (sustainable economic opportunities; $\beta = -.90, p < .001$) and U5MR, after adjustment for the other governance indicator (rule of law, transparency and corruption; $\beta = -.12, p = .42$) and the other covariates. The governance indicator for sustainable economic opportunities (SEO) had the largest standardised coefficient of any of the variables included in the analysis. Female enrolments remained significant ($\beta = -.32, p = .02$), while sustainable access to safe drinking water was no longer significant in the fully adjusted model ($\beta = -.10, p = .52$). GNI per capita, however, became significant in the fully adjusted model ($\beta = .41, p = .04$) and showed, counter intuitively, that increases in GNI per capita were associated with increases in U5MR. The kind of instability in parameters seen here is a

common issue where there are large numbers of covariates in relation to the sample size, and necessarily raised concerns about the stability of the estimated relationship between governance and U5MR.

A sensitivity analysis was conducted to examine the stability of the estimated association between the governance indicators and U5MR. In essence, by varying combinations of covariates, it was possible to increase the sample size, and examine the stability of the association between SEO and U5MR. The direction and broad magnitude of the association between governance and U5MR did not change with the modelling strategy. For example, removing adult literacy as a covariate increased the available sample size from 37 to 40 countries, resulting in a poorer fit of the model with the data (adjusted $R^2 = .64$), but SEO remained significantly associated with U5MR ($\beta = -.76, p < .001$). Furthermore, because the SEO indicator included a measure of wealth, a further sensitivity analysis was conducted using an adjusted SEO measure, having removed the effect of GNI per capita. The results remained materially the same.

Health equity (U5MR quintile ratio)

The pattern of results was distinctly different for the models of the U5MR quintile ratio data (Table 3).

Table 3 Three models estimating the relationship between health equity (U5MR quintile ratio), governance (RLTC and SEO) and 9 covariates representing healthcare, finance/economy, education, and physical infrastructure¹

	U5MR Quintile Ratio					
	Model 4 (28 < n < 30)		Model 5 (n = 25)		Model 6 (n = 25)	
	β/r	p	β	p	β	p
<i>Healthcare</i>						
Births Attended %	.32	.09	.31	.30	.32	.34
Immunisation %	.24	.19	.15	.55	.10	.72
Hospital Beds/10,000	.07	.73	-.73	.04	-.73	.06
<i>Finance</i>						
GNI (transformed) \$.35	.06	-.04	.92	-.14	.77
Health Expenditure \$.53	<.001	.88	.01	.85	.02
<i>Education</i>						
Enrolments (female) %	.25	.20	-.18	.44	-.24	.40
Adult Literacy %	.23	.24	.42	.18	.36	.35
<i>Physical Infrastructure</i>						
Water %	.15	.43	-.42	.21	-.47	.25
Sanitation %	.33	.08	.27	.23	.27	.25
<i>Governance</i>						
RLTC	.32	.09			.10	.77
SEO	.42	.02			.19	.71
Adjusted R-squared			.30		.21	

¹Model 4 examines the bivariate relationship. Model 5 examines the multivariate relationship between the covariates and health outcome in the absence of the measures of governance. Model 6 examines the multivariate relationship between health outcome and governance, adjusting for the covariates.

Model 4 shows the bivariate relationship between, the 9 covariates, the two measures of governance, and the U5MR equity ratio. No indicators of healthcare, education, or physical infrastructure were significantly correlated with the U5MR quintile ratio data ($p < .05$). SEO was significantly correlated with the U5MR equity ratio ($\beta = .42$, $p = .02$), as was health expenditure ($\beta = .53$, $p < .001$). A number of the indicators had p-values less than .1, including births attended (healthcare) ($\beta = .32$, $p = .09$), GNI per capita (finance) ($\beta = .35$, $p = .06$), sanitation (physical infrastructure) ($\beta = .33$, $p = .08$), and RLTC (governance) ($\beta = .32$, $p = .09$).

Model 5 represents the multivariate model of the linear relationship between the U5MR quintile ratio and the covariates in the absence of the measures of governance ($n = 25$); and it accounted for 30% of the variance (Adjusted $R^2 = .30$). Only two of the covariates were, independently, significantly associated with the U5MR quintile ratio. The first of these was the availability of hospital beds per 10,000 ($\beta = -.73$, $p = .04$). As the number of hospital beds per 10,000 increased, so there was an associated improvement in health equity. The second independently significant covariate associated with the U5MR equity ratio was per capita total expenditure on health ($\beta = .88$, $p = .01$). Increases in per capita health spending were associated with worsening equity.

Model 6 replicated Model 5, with the addition of the two governance measures ($n = 25$). The addition of the

governance indicators resulted in a poorer fit to the data (Adjusted $R^2 = .21$), and neither SEO (sustainable economic opportunities; $\beta = .19$, $p = .71$) nor RLTC (rule of law, transparency and corruption; $\beta = .10$, $p = .77$) were significantly associated with the U5MR quintile ratio. In the fully adjusted model, the only covariate that remained significantly associated with the U5MR quintile ratio was per capita total expenditure on health ($\beta = .85$, $p = .02$).

Discussion

The primary interest was in the association between health systems performance (as measured by a health outcome -U5MR - and a health equity measure - the U5MR quintile ratio) and a non-healthcare factor, namely governance. There was no apparent relationship between the health outcomes dimension of health systems performance (U5MR) and the health equity dimension (U5MR quintile ratio). This is noteworthy for two reasons. First, and purely from an analytic perspective, a weak relationship reinforces the need to model the two dimensions of health systems performance independently. Second, and with a policy perspective in mind, in the absence of a strong relationship between the dimensions there is a need to take both seriously, and not assume that addressing one will necessarily address the other.

The analysis showed that governance, in particular “sustainable economic opportunities,” was significantly

associated with health outcome measured as under five mortality rate and remained so even after controlling for the other healthcare and non-healthcare factors (see also [22]). Furthermore, the result was independent of the approach taken to the analysis of the data. Although a causal relationship cannot be established in an ecological, cross sectional analysis of this kind, the results leave open the possibility that good governance helps to create an environment in which a health system can perform well, and certainly invites further research to examine the matter of causation.

In sharp contrast, and notwithstanding a significant bivariate association between governance (SEO) and health equity, there was no significant association in the multivariate analysis. Given the weak relationship between health outcomes and health equity, this may not be entirely surprising. It raises, questions, however, about which non-healthcare factors should be future targets for investigation, and no clear answer presents itself.

The results should be regarded as preliminary, and limited by the amount and quality and type of data. The number of countries contributing data was small relative to the number of variables included in the analyses, and the situation was worse for the analysis of equity than it was for the analysis of health outcomes. Confounding was an issue. The independent measures are intercorrelated and correlated with the outcome measures. Negative confounding is the likely explanation, for instance, of the anomalous relationship in which increased country GNI was associated with a worse U5MR after the inclusion of governance (Table 2: Model 3). GNI and SEO are both negatively associated with U5MR (SEO much stronger) at the same time as GNI and SEO are highly positively related which might cause the GNI to turn falsely positive when run in a multivariate regressions including SEO. Longitudinal data (allowing for the inclusion of time-lags) would strengthen the analysis considerably. However, the dangers of the ecological fallacy are inescapable. Issues of endogeneity will also haunt any attempt to jump from an analysis of association to a causal inference. Causal order, lurking variables, and a lack of appropriate instrumental variables are all impediments, compounded by issues of data quality and the necessarily limited sample of countries. Reasoned argument will require ranges of data sources and ranges of study types.

Although one needs to be cautious about the interpretation of the data, equally, one cannot allow the perfect to become the enemy of the good. There are no perfect ways to analyse a data set such as this one, and yet the question of the role of country-level governance in health systems performance is an important one, that has received little attention. In the absence of any

analysis, no matter how imperfect, there can be no debate; and this analysis at least places the issues “on the table” and invites the collection of better data. Governance is significantly associated with health outcomes. If the association is causal, and one might anticipate that it is [14], then it would be unwise to ignore that possibility because of data quality issues. The unanticipated relationship between finance and health equity certainly warrants further consideration. Ways forward include (unsatisfactorily) waiting for the development of better time-series data, and (positively) the development of focussed case-studies within a handful of countries.

Conclusion

There are a range of indicators, largely under-utilised, that could provide important points for intervention in population health. Recent data from large scale studies such as the Commission on Social Determinants of Health provided important and alternative ways of conceptualising the factors that should be within the purview of the health sector. Analyses such as the one presented here provide a powerful argument for inter-sectoral approaches to population health improvement outside the health or medical care sector, notwithstanding weaknesses in the data. The indication that governance matters for health system performance is of importance for policy making as it could point to structural interventions that have greater impact on health outcomes than individually targeted interventions.

The assessment of healthcare systems alone as a proxy for health systems performance in countries where broader determinants such as governance and infrastructure remain inadequate is restrictive both in making progress and assessing improvements. More research is needed to support our finding, research that uses different type of data such as time series data or even case studies applying qualitative measures.

Acknowledgements

The authors would like to thank Dr David Peters and Dr Jose Luis Alvarez for their thorough revision of our manuscript and their constructive suggestions for improvements.

Endnotes

i) Since the time the data was collected, the Mo Ibrahim Foundation has restructured their classification of indicators. The Rule of Law, Transparency and Corruption is now part of indicator called “Safety and Rule of Law”.

Author details

¹Centre for Public Health Research, Brunel University, West London, UK.

²Global Public Health, Jeffrey Cheah School of Medicine and Health Sciences, Monash University, Bandar Sunway, Malaysia.

Authors' contributions

AEO designed the study, conducted the analysis and wrote the first draft of a report. DDR supported the analysis and created a preliminary draft based on AEO's report. SP participated in the design of the analysis and PA contributed to the discussion and write up of the paper. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Received: 14 September 2010 Accepted: 16 April 2011

Published: 16 April 2011

References

1. World Health Organization: **The World Health Report 2000. Health Systems: Improving Performance** 2000.
2. Lakhani A, Coles J, Eayres D, Spence C, Rachet B: **Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1—performance indicators closely linked to clinical care.** *BMJ* 2005, **330(7505)**:1426-1432.
3. Westert G, van den Berg M, Koorman X, Verkleij H: *Dutch Health Care Performance Report 2008* 2008.
4. Schoen C, Davis K, How SKH, Schoenbaum SC: **U.S. Health System Performance: A National Scorecard.** *Health Aff* 2006, **25**:w457-w475.
5. OECD: **OECD Health Project (2001-2004).** 2004 [http://www.oecd.org/document/28/0,3343,en_2649_33929_2536540_1_1_1_37407,00.htm], Accessed 05/22, 2009.
6. Arah OA, Westert GP, Hurst J, Klazinga NS: **A conceptual framework for the OECD Health Care Quality Indicators Project.** *Int J Qual Health Care* 2006, **18(suppl_1)**:5-13.
7. Nolte E, McKee M: **Population health in Europe: how much is attributable to health care?** *World Hospitals and Health Services* 2004, **40(3)**:12-14, 40, 42.
8. McKee M, Sührcke M, Nolte E, Lessof S, Figueras J, Duran A, et al: **Health systems, health, and wealth: a European perspective.** *The Lancet* 2009, **373(9660)**:349-351.
9. Hanson K, Gilson L, Goodman C, Mills A, Smith R, Feachem R, et al: **Is Private Health Care the Answer to the Health Problems of the World's Poor?** *PLoS Medicine* 2008, **5(11)**:e233.
10. Armstrong Schellenberg J, Mrisho M, Manzi F, Shirima K, Mbuya C, Mushi A, et al: **Health and survival of young children in southern Tanzania.** *BMC Public Health* 2008, **8(1)**:194.
11. Kristiansson C, Gotuzzo E, Rodriguez H, Bartoloni A, Strohmeyer M, Tomson G, et al: **Access to health care in relation to socioeconomic status in the Amazonian area of Peru.** *International Journal for Equity in Health* 2009, **8(1)**:11.
12. Travis P, Bennett S, Haines A, Pang T, Bhutta Z, Hyder AA, et al: **Overcoming health-systems constraints to achieve the Millennium Development Goals.** *The Lancet* 2004, **364(9437)**:900-906.
13. Murray CJ, Frenk JA: **A framework for assessing the performance of health systems.** *Bulletin of the World Health Organization* 2000, **78(6)**:717-731.
14. Commission on Social Determinants of Health editor: **Closing the gap in a generation.** Geneva: World Health Organization,; 1 2008.
15. Carrin G, Xu K, Evans DB: **Exploring the features of universal coverage.** *Bulletin of the World Health Organization* 2008, **86(11)**:818.
16. World Bank: **World Development report 1993: Investing in Health.** 1993 [http://files.dcp2.org/pdf/WorldDevelopmentReport1993.pdf], Accessed 03/25, 2010.
17. Singh-Manoux A, Dugravot A, Smith GD, Subramanyam M, Subramanian SV: **Adult education and child mortality in India: the influence of caste, household wealth, and urbanization.** *Epidemiology* 2008, **19(2)**:294-301.
18. McAlister C, Baskett TF: **Female education and maternal mortality: a worldwide survey.** *Journal of obstetrics and gynaecology Canada* 2006, **28(11)**:983-990.
19. Ako AA, Nkeng GE, Takem GEE: **Water quality and occurrence of water-borne diseases in the Douala 4th District, Cameroon.** *Water science and technology* 2009, **59(12)**:2321-2329.
20. Kaufmann D, Kraay A, Mastruzzi M: **Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008.** 2009 [http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1424591], Accessed 6/1, 2009.
21. Kaufmann D, Kraay A, Zoido P: **Governance Matters.** 1999 [http://papers.ssrn.com/sol3/papers.cfm?abstract_id=188568], Accessed 11/8, 2010.
22. Reidpath D, Allotey P: **Structure, (governance) and health: an unsolicited response.** *BMC International Health and Human Rights* 2006, **6(1)**:12.
23. United Nations Development Programme: **Statistics of the Human Development Report.** 2008 [http://hdr.undp.org/en/statistics/], Accessed 02/04, 2009.
24. World Health Organization: **World Health Statistics 2008.** 2008 [http://www.who.int/whosis/whostat/EN_WHS08_Table1_Mort.pdf], Accessed 02/06, 2009.
25. Mo Ibrahim Foundation: **The Ibrahim Index.** 2010 [http://www.moibrahimfoundation.org/en/section/the-ibrahim-index], Accessed 01/25, 2011.
26. Blaxter M: **The Health of Children: A Review of Research on the Place of Health in Cycles of Disadvantage.** 1981.
27. Reidpath D, Allotey P: **Infant mortality rate as an indicator of population health.** *J Epidemiol Community Health* 2003, **57(5)**:344-6.
28. Reidpath DD, Morel CM, Mecaskey JW, Allotey P: **The millennium development goals fail poor children: the case for equity-adjusted measures.** *PLoS Medicine* 2009, **6(4)**:e1000062.
29. Gwatkin DR, Rutstein S, Johnson K, Suliman E, Wagstaff A, Amouzou A: **Socio-Economic Differences in Health, Nutrition, and Population Within Developing Countries.** Washington DC: World Bank; 2007.
30. Braveman P, Gruskin S: **Defining equity in health.** *Journal of Epidemiology and Community Health* 2003, **57(4)**:254-258.
31. Reidpath DD, Allotey P: **Measuring global health inequity.** *International Journal for Equity in Health* 2007, **6**:16.
32. Graham J, Amos P, Plumptre T: **Principles for Good Governance in the 21st Century.** 2003 [http://www.iog.ca/publications/policybrief15.pdf], Accessed 20/05, 2009.
33. Saisana M, Annoni P, Nardo M: **A robust model to measure governance in African countries.** Report No. EUR23773 EN 2990. European Commission Joint Research Centre. Ispra Varese, Italy; 2009.
34. Gelman A, Hill J: **Data Analysis Using Regression and Multilevel/Hierarchical Models.** Cambridge, England: Cambridge University Press; 2007.

Pre-publication history

The pre-publication history for this paper can be accessed here:
http://www.biomedcentral.com/1471-2458/11/237/prepub

doi:10.1186/1471-2458-11-237

Cite this article as: Olafsdottir et al.: Health systems performance in sub-Saharan Africa: governance, outcome and equity. *BMC Public Health* 2011 **11**:237.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



References

- Abed, G.T. & Gupta, S. 2002, *Governance, Corruption, & Economic Performance*, 1st ed., International Monetary Fund.
- Ako, A.A., Nkeng, G.E. & Takem G.E.E. 2009, "Water quality and occurrence of water-borne diseases in the Douala 4th District, Cameroon.", *Water science and technology*, vol. 59, no. 12, pp. 2321-2329.
- Almeida, C., Braveman, P., Gold, M., Szwarcwald, C., Ribeiro, S. & Miglionico, A. 2001, "Methodological concerns and recommendations on policy consequences of the World Health Report 2000", *Lancet*, vol. 357, no. 9268.
- Annan, K. 2007, *Good Governance - From Local to Global* [Homepage of United Nations University. Annual Report 2006], [Online]. Available: <http://unu.edu/publications/annual-reports> [2010, 10/29].
- Anyanwu, J.C. & Erhijakpor, A.E.O. 2007, *Health Expenditures and Health Outcomes in Africa*, African Development Bank Group, Africa.
- Arah, O.A., Westert, G.P., Hurst, J. & Klazinga, N.S. 2006, "A conceptual framework for the OECD Health Care Quality Indicators Project", *International Journal for Quality in Health Care*, vol. 18, no. suppl_1, pp. 5-13.
- Armstrong Schellenberg, J., Mrisho, M., Manzi, F., Shirima, K., Mbuya, C., Mushi, A., Ketende, S., Alonso, P., Mshinda, H., Tanner, M. & Schellenberg, D. 2008, "Health and survival of young children in southern Tanzania", *BMC Public Health*, vol. 8, no. 1, pp. 194.
- Arnarson, O. 2009, *Sofandi að feigdarosi*, 1st ed., JPV utgava, Reykjavik.
- Baejarins Besta 2009, February 27th-last update, *Fallid fra sameiningu* [Homepage of Baejarins Besta], [Online]. Available: <http://www.bb.is/Pages/26?NewsID=128669> [2009, 06/03].
- Banerji, D. 1999, "A fundamental shift in the approach to international health by WHO, UNICEF and the World Bank: Instances of the practice of "intellectual fascism" and totalitarianism in some Asian countries", *International Journal of Health Services*, vol. 29, no. 2, pp. 227-259.
- Barracough, S. 2000, "The Politics of Privatization in the Malaysian Health Care System", *Contemporary Southeast Asia: A Journal of International & Strategic Affairs*, vol. 22, no. 2, pp. 340.
- Barry, O. 2010, October 6th-last update, *Mo Ibrahim: "Africa is progressing"* [Homepage of Afrik-News], [Online]. Available: <http://www.afrik-news.com/article18350.html> [2011, 02/13].

- Baumgartner, F.R. & Jones, B.D. 1993, *Agendas and instability in American politics*, University of Chicago Press, Chicago; London.
- BBC 2009, *Timeline: Iceland economic crisis*. Available: <http://news.bbc.co.uk/2/hi/europe/7851853.stm> [2009, 06/03].
- Bjarnason, J., Kristjansson, G.A. & Stefansson, M. 2008, , *Nefndaralit fra minnihluta fjarlaganefndar*. Available: <http://www.althingi.is/altext/136/s/0349.html> [2009, 06/03].
- Bjartmarz, J., Hjartardottir, D., Fridfinnsdóttir, E.F., Gardarsson, G., Jonsson, H., Petursson, M., Frimannsdottir, M., Sveinsson, S. & Sigurdsson, S.B. 2006, *Hver geri hvað í heilbrigðisthjonustunni*, The Ministry of Health, Reykjavik.
- Blaxter, M. 1981, *The Health of Children: A Review of Research on the Place of Health in Cycles of Disadvantage.*, Heinemann Educational, London.
- Braveman, P. & Gruskin, S. 2003, "Defining equity in health.", *Journal of Epidemiology and Community Health*, vol. 57, no. 4, pp. 254-258.
- Brinkerhoff, D.W & Bossert, T.J, 2008 "Health Governance: Concepts, Experience, and Programming Options", USAID, Health Systems 20/20.
- Brunel University 2007, *Doctor of Public Health (DrPH) Student Handbook 2007/8*, Brunel Graduate School, London.
- Buse, K., Mays, N. & Walt, G. 2005, *Making health policy*, Open University Press, Maidenhead.
- Carrin, G., Xu, K. & Evans, D.B. 2008, "Exploring the features of universal coverage", *Bulletin of the World Health Organization*, vol. 86, no. 11, pp. 818.
- Central Bank of Iceland 2008, *Objectives and roles*. Available: <http://sedlabanki.is/?PageID=188> [2009, 02/04].
- Centre for Reviews and Dissemination 2009, *Systematic Reviews. CRD's guidance for undertaking reviews in health care*, 1st ed., Centre for Reviews and Dissemination, York, UK.
- Chee, H.L. 2008, "Ownership, control, and contention: Challenges for the future of healthcare in Malaysia", *Social science & medicine*, vol. 66, no. 10, pp. 2145-2156.
- Chik, A.R. 2000, May 1st-last update, *New prescription needed* [Homepage of Business leaders on the web], [Online]. Available: http://findarticles.com/p/articles/mi_qn6207/is_20000501/ai_n24903292/ [2010, 03/03].

- Choe, T.C. 2008, June 8th-last update, *National Health Financing Scheme: Two decades on, another relook*. [Homepage of New Strait Times online], [Online]. Available:
<http://www.mma.org.my/Portals/0/Two%20decades%20on,%20another%20relook.nst080608.pdf> [2010, 07/26].
- Coalition Against Health Care Privatisation 2005a. *Consultants need to hear our views first, says Coalition*. Aliran, October 2005, Malaysia.
- Coalition Against Health Care Privatisation 2005b, *People's proposal for health care financing*. Aliran, December 2005, Malaysia.
- Coburn, D. & Coburn, E. S. 2007, "Health and health inequalities in a neo-liberal global world" in *The Economics of Health Equity*, eds. D. McIntyre & G. Mooney, 1st ed., Cambridge University Press, Cambridge, pp. 13-35.
- Commission on Social Determinants of Health 2008, *Closing the gap in a generation*, World Health Organization, Geneva.
- Committee to explore the out-of-pocket payments in the health care service in Iceland 2009, *Greidslupatttaka almennigs í heilbrigdiskerfinu arid 2007 - DRAFT report*.
- Corbin, J. & Strauss, A. 1990, "Grounded Theory Research: Procedures, Canons, and Evaluative Criteria", *Qualitative Sociology*, vol. 13, no. 1, pp. 3.
- Cutler, D.M., Knaul, F., Lozano, R., Méndez, O. & Zurita, B. 2002, "Financial crisis, health outcomes and ageing: Mexico in the 1980s and 1990s", *Journal of Public Economics*, vol. 84, no. 2, pp. 279-303.
- Daniels, N. 2008, *Just Health: Meeting Health Needs Fairly*, 1st ed., Cambridge University Press, USA.
- Danielsson, J. 2009, January 26th-last update, *Iceland experienced the worst economic crash of any country in peacetime in October last year* [Homepage of BBC news online], [Online]. Available:
<http://news.bbc.co.uk/2/hi/europe/7852275.stm> [2009, 02/04].
- Darby, C., Valentine, N., Murray, C. & Silva, A. 2000, *Strategy on Measuring Responsiveness. GPE Discussion Paper Series: No.23*, World Health Organization, Geneva.
- Demographic and Health Surveys 2008, *Measure DHS*. Available:
<http://www.measuredhs.com/start.cfm> [2008, 12/12].
- Denzin, N.K. & Lincoln, Y.S. 2000, *Handbook of qualitative research*, 2nd ed., Sage Publications, London.

Directorate of Health 2010, *Talnabrunnur: November-December 2010*, Director of Health, Iceland.

Directorate of Health 2009, *Personal communication with a member of staff*.

Directorate of Health 2008a, *Heilbrigdisumdaemi* [Homepage of Directorate of Health], [Online]. Available: <http://www.landlaeknir.is/pages/1216/> [2008, 03/21].

Directorate of Health 2008b, *Punktar vegna mogulegrar breytingar á heilbrigdisthjonustu vegna fjarmalakreppu*.

Directorate of Labour 2011, *Atvinnuleysistolur i excelskjolum* [Homepage of Directorate of Labour], [Online]. Available: <http://www.vinnumalastofnun.is/vinnumalastofnun/utgefing-efni-og-talnaefni/atvinnuleysistolur-i-excelskjolum/> [2011, 02/21].

District General Hospital in Akureyri 2009, *News on the website in January and February 2009* [Homepage of District General Hospital in Akureyri], [Online]. Available: <http://fsa.is/> [2009, 07/08].

Dollar, D. & Burnside, A.C. 1998, *Aid, the Incentive Regime, and Poverty Reduction*, World Bank, Washington.

Economic Planning Unit 2010, *Tenth Malaysia Plan (2011-2015)*, Economic Planning Unit, Malaysia.

Economic Planning Unit 2008a, January 14th-last update, *New Economic Policy* [Homepage of Economic Planning Unit, Prime Minister's Department], [Online]. Available: <http://www.epu.gov.my/neweconomicpolicy> [2010, 02/29].

Economic Planning Unit 2008b, January 14th-last update, *Privatization Policy* [Homepage of Economic Planning Unit, Prime Minister's Department], [Online]. Available: <http://www.epu.gov.my/privatizationpolicy> [2010, 02/29].

Economic Planning Unit 2006, *Ninth Malaysia Plan 2006-2010*, 1st ed., The Economic Planning Unit, Prime Minister's Department, Malaysia.

Economic Planning Unit 2005, , *Malaysia Quality of Life 2004 - Income and Distribution* [Homepage of Prime Minister's Department], [Online]. Available: http://www.epu.gov.my/c/document_library/get_file?p_l_id=13041&folderId=122841&name=DLFE-4731.pdf [2010, 03/03].

Economic Planning Unit 2001, *Eighth Malaysia Plan, 2001-2005*, 1st ed., Economic Planning Unit, Prime Minister's Department, Malaysia.

Economic Planning Unit 1996a, *Seventh Malaysia Plan, 1996 - 2000*, 1st ed., Economic Planning Unit, Prime Minister's Department, Malaysia.

Economic Planning Unit 1996b, *Seventh Malaysia Plan, 1996-2000*, Economic Planning Unit, Prime Minister's Department, Malaysia.

Eichler, R. 2001, *Improving Immunization Coverage in an Innovative Primary Health Care Delivery Model: Lessons from Burkina Faso's Bottom Up Planning, Oversight, and Resource Control Approach that Holds Providers Accountable for Results*, World Bank, Washington, DC.

Evans-Pritchard, A. 2006, March 14th-last update, *Investors flee Iceland banks as economy heads towards forecast 'hard landing'* [Homepage of The Telegraph], [Online]. Available: <http://www.telegraph.co.uk/finance/2934187/Investors-flee-Iceland-banks-as-economy-heads-towards-forecast-'hard-landing'.html> [2009, 02/06].

Eyjan 2009, September 29th-last update, *Transparency International: Lítil spilling á Íslandi* [Homepage of Eyjan], [Online]. Available: <http://eyjan.is/blog/2009/09/29/transparency-international-litil-spilling-a-islandi/> [2009, 10/5].

Falagas, M.E., Vouloumanou, E.K., Mavros, N.N. & Karageorgopoulos, D.E. 2009, "Economic crises and mortality: a review of the literature", *The International Journal of Clinical Practice*, vol. 63, no. 8, pp. 1128-1135.

Fifty-eighth World Health Assembly 2005, (WHA58.33) *Sustainable health financing, universal coverage and social health insurance*, World Health Organization, Geneva.

Filmer, D. & Pritchett, L. 1999, "The impact of public spending on health: does money matter?", *Social Science & Medicine*, vol. 49, no. 10, pp. 1309-1323.

Folland, S., Goodman, A.C. & Stano, M. 2007, *The economics of health and health care*, 5th ed., Pearson Prentice Hall, Harlow.

Fotso, J., Ezeh, A., Madise, N. & Ciera, J. 2007, "Progress towards the child mortality millennium development goal in urban sub-Saharan Africa: the dynamics of population growth, immunization, and access to clean water", *BMC Public Health*, vol. 7, no. 1, pp. 218.

Frenk, J. 2010, "The World Health Report 2000: expanding the horizon of health system performance", *Health Policy and Planning*, vol. 25, pp. 343-345.

Frenk, J., González-Pier, E., Gómez-Dantés, O., Lezana, M.A. & Knaul, F.M. 2006, "Comprehensive reform to improve health system performance in Mexico", *The Lancet*, vol. 368, no. 9546, pp. 1524-1534.

Frettabladid 2009, January 8th-last update, *Hafnfirdingar segjast engin fagleg rok hafa fengid fyrir breytingunum: Saetta sig ekki vid breytingarnar* [Homepage of

- Frettabladid], [Online]. Available:
http://epaper.visir.is/media/200901080000/pdf_online/1_2.pdf [2009, 06/20].
- Frettabladid 2008a, *Draga þarf ur ovissu hjá folki og oraunhaefum krofum*. Available:
http://epaper.visir.is/media/200811040000/pdf_online/1_10.pdf [2009, 06/03].
- Frettabladid 2008b, October 4th-last update, *Sjó daga atburdarras* [Homepage of Frettabladid], [Online]. Available:
http://epaper.visir.is/media/200810040000/pdf_online/1_29.pdf [2009, 05/29].
- Frettabladid 2008c, November 26th-last update, *Sjúkrahúsíð á Akureyri: Starfsfolk motmaelir lokun* [Homepage of Frettabladid], [Online]. Available:
http://epaper.visir.is/media/200811260000/pdf_online/1_12.pdf [2009, 06/03].
- Friedman, J. & Thomas, D. 2008, "Psychological Health Before, During, and After an Economic Crisis: Results From Indonesia, 1993-2000", *World Bank Econ Rev*, .
- Friedman, M. & Friedman, R. 1984, *Tyranny of the status quo*, Secker & Warburg, London.
- Gelman, A. & Hill, J. 2007, *Data Analysis Using Regression and Multilevel/Hierarchical Models*, Cambridge University Press, Cambridge, England.
- Gerdtham, U. & Ruhm, C.J. 2006, "Deaths rise in good economic times: Evidence from the OECD", *Economics & Human Biology*, vol. 4, no. 3, pp. 298-316.
- Ghani, S.N. & Yadav, H. 2008, *Health Care in Malaysia*, 1st ed., University of Malaya Press, Malaysia.
- Ghee, L.T., Gomes, A. & Rahman, A. 2009, *Multiethnic Malaysia, Past, Present and Future*. 1st ed., Strategic Information and Research Development Centre, petaling Jaya and MiDAS@UCSI University, Kuala Lumpur, Malaysia.
- Gilson, L. 1998, "The lesson of user fee experience in Africa" in *Sustainable health care financing in Southern Africa*, eds. A. Beattie, J. Doherty, L. Gilson, E. Lambo & P. Shaw, 1st ed., World Bank, Washington, DC., pp. 35-48.
- Gilson, L., Russell, S. & Buse, K. 1995, "The political economy of user fees with targeting: Developing equitable health financing policy", *Journal of International Development*, vol. 7, no. 3, pp. 369-401.
- Gilson, L., Doherty, J., Lake, S., McIntyre, D., Mwikisa, C. & Thomas, S. 2003, "The SAZA study: implementing health financing reform in South Africa and Zambia", *Health policy and planning*, vol. 18, no. 1, pp. 31-46.

- Gilson, L. & Raphaely, N. 2008, "The terrain of health policy analysis in low and middle income countries: a review of published literature 1994–2007", *Health policy and planning*, vol. 23, no. 5, pp. 294-307.
- Glaser, B.G. & Strauss, A.L. 1967, *The discovery of grounded theory: strategies for qualitative research*, Aldine Publishing Company, Chicago.
- Global Water Intelligence 2007, *Global Water Market 2008: Opportunities in Scarcity and Environmental Regulations*, 1st ed., Oxford University Press, United Kingdom.
- Gomez, E.T. & Jomo, K.S. 1999, *Malaysia's Political Economy: Politics, Patronage and Profits*, 1st ed., Cambridge University Press, Cambridge.
- Granados, J.A.T. & Roux, A.V.D. 2009, "Life and death during the Great Depression", *Proceedings of the National Academy of Sciences of the United States of America*, vol. 10, pp. 1-6.
- Grimsson, O.R. 2011, January 1st-last update, *New Year Address* [Homepage of President of Iceland], [Online]. Available: http://forseti.is/media/PDF/2011_01_01_aramotaavarp.pdf [2011, 02/21].
- Gudgeirsson, R. 2009, *Minnisblad um skipulagsbreytingar í heilbrigðiskerfinu*. A copy received from the Icelandic Ministry of Health.
- Gudjonsson, K., Palsdottir, B., Bjornsdottir, G., Arnardottir, I.J., Thorsteinsdottir, I.K., Haraldsdottir, R., Jonsson, R. & Omarsdottir, U.B. 2005, *Rettlitari notendagjöld i sjukratryggingum a Islandi*, Unpublished report ed., Iceland.
- Gunnarsdottir, H. 2005, "Ojofnudur i heilsufari a Islandi", *Tímarit hjúkrunrafræðinga*, vol. 2, no. 81, pp. 18-25.
- Gupta, S., Davoodi, H. & Tiengson, E. 2000, June-last update, *Corruption and the Provision of Health Care and Education Services* [Homepage of International Monetary Fund, Working Paper WP/00/116], [Online]. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=879858 [2011, 03/10].
- Gwatkin, D.R., Rutstein, S., Johnson, K., Suliman, E., Wagstaff, A. & Amouzou, A. 2007, *Socio-Economic Differences in Health, Nutrition, and Population Within Developing Countries*, World Bank, Washington DC.
- Gwatkin, D.R., Bhuiya, A. & Victora, C.G. 2004, "Making health systems more equitable", *The Lancet*, vol. 364, no. 9441, pp. 1273-1280.
- Gwatkin, D.R., Rutstein, S., Johnson, K., Suliman, E., Watstaff, A. & Amouzou, A. 2007, *Socio-Economic Differences in Health, Nutrition, and Population Within Developing Countries: An Overview*, World Bank, Washington.

- Gylfason, T. 2009, *Interview in Spegillinn August 10th*, Icelandic National Broadcasting service, Iceland.
- Gylfason, T. 1993, *Hagkvaemni og rettleaeti*, 1st ed., Hid islenzka bokmenntafelag, Reykjavík.
- Halldorsson, M., Cavelaars, A.E.J.M., Kunst, A.E. & Mackenbach, J.P. 1999, "Socioeconomic differences in health and well-being of children and adolescents in Iceland", *Scandinavian Journal of Public Health*, vol. 27, pp. 43-47.
- Halldorsson, M. 2003, *Health Care Systems in transition*, 1st ed., European Observatory on Health Systems and Policies, Denmark.
- Halldorsson, M., Kunst, A.E., Kohler, L. & Mackenbach, J.P. 2000, "Socioeconomic inequalities in the health of children and adolescents: A comparative study of the five Nordic countries", *The European Journal of Public Health*, vol. 10, no. 4, pp. 281-288.
- Hanson, K., Gilson, L., Goodman, C., Mills, A., Smith, R., Feachem, R., Feachem, N.S., Koehlmoos, T.P. & Kinlaw, H. 2008, "Is Private Health Care the Answer to the Health Problems of the World's Poor?", *PLoS Medicine*, vol. 5, no. 11, pp. e233.
- Health care specialist 2010, *Interviews with key informants*, Malaysia.
- HM Treasury 2008, October 9th-last update, *Landsbanki, Heritable, and Kaupthing Singer and Friedlander* [Homepage of The National Archives], [Online]. Available: <http://www.hm-treasury.gov.uk/landsbanki.htm> [2009, 06/03].
- HM Treasury, Financial Sanctions Notice 2008, October 8th-last update, *The Landsbanki Freezing Order 2008* [Homepage of HM Treasury], [Online]. Available: http://www.hm-treasury.gov.uk/d/fin_sanc_notice081008.pdf [2009, 05/20].
- Hopkins, S. 2006, "Economic stability and health status: Evidence from East Asia before and after the 1990s economic crisis", *Health Policy*, vol. 75, no. 3, pp. 347-357.
- Hospital Kuala Lumpur 2010, , *General information* [Homepage of Hospital Kuala Lumpur. Ministry of Health Malaysia], [Online]. Available: <http://www.hkl.gov.my/> [2010, 07/07].
- Hreinsson, P., Benediktsdottir, S. & Gunnarsson, T. 2010, *Addragandi og orsakir falls islensku bankanna 2008 og tengdir atburdir*, Investigation Committee to execute a comprehensive and detailed investigation of the events leading up to falls of the banking sector and the economic crisis in Iceland, Reykjavik.

Hsiao, W.C. 1995, "Abnormal economics in the health sector", *Health Policy*, vol. 32, no. 1-3, pp. 125-139.

Icelandic Church Aid 2009, , *Hjalparstarf kirkjunnar. Innanlandsadstod Hjalparstarfs kirkjunnar-um allt land*. Available: <http://www.help.is/?meira?id=374> [2009, 07/13].

Icelandic Health Insurance 2009, , *Heilbrigdisthjonusta* [Homepage of Icelandic Health Insurance], [Online]. Available: <http://www.sjukra.is/heilbrigdisthjonusta/> [2009, 06/03].

Icelandic Parliament 2010a, December 16th-last update, *Fjarlog 2011* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/139/s/0556.html> [2011, 02/22].

Icelandic Parliament 2010b, October 7th-last update, *Log um heimild til fjarveitingar ur rikissjodi vegna serstakra adstaedna a fjarmalamarkadi o.fl.* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/stjt/2008.125.html> [2011, 03/29].

Icelandic Parliament 2009a, December 22nd-last update, *Fjarlog 2010* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/138/s/0594.html> [2011, 02/22].

Icelandic Parliament 2009b, *Lyfjalog*. Available: <http://www.althingi.is/lagas/nuna/1994093.html> [2009, 07/12].

Icelandic Parliament 2008a, September 16th-last update, *Act on Health Insurance* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/stjt/2008.112.html> [2009, 11/2].

Icelandic Parliament 2008b, December 22nd-last update, *Fjarlog 2009* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/stjt/2008.177.html> [2011, 02/22].

Icelandic Parliament 2008c, December 20th-last update, *Log um radstafanir i rikisfjarmalum* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/136/s/0451.html> [2009, 06/03].

Icelandic Parliament 2008d, September 16th-last update, *Log um sjukratryggingar* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/lagas/nuna/2008112.html> [2009, 07/12].

Icelandic Parliament 2007a, December 13th-last update, *Fjarlog 2008* [Homepage of Icelandic Parliament], [Online]. Available: <http://www.althingi.is/altext/stjt/2007.179.html> [2011, 02/22].

- Icelandic Parliament 2007b, March 27th-last update, *Health Service Act 40/2007*. Available: <http://www.althingi.is/lagas/136b/2007040.html> [2009, 06/03].
- Icelandic Society of Dentists 2009, April-last update, *Hjalparvakt tannlaekna fyrir born og unglina*. Available: http://www.tannsi.is/files/auglysing9mai_1156936722.pdf [2009, 06/20].
- International Country Risk Guide 2011, *Country Data* [Homepage of The Political Risk Services Group], [Online]. Available: <http://www.prsgroup.com/Default.aspx> [2011, 03/10].
- Johannesdottir, A.R. 2009, *Member of Parliament - exchange of information through an e-mail*.
- Kabir, M. 2008, "Determinants of Life Expectancy in Developing Countries", *The Journal of Developing Areas*, vol. 41, no. 2, pp. 185.
- Karol Consulting 2006, *National Healthcare Financing Mechanisms in Malaysia - Interim Report*, Ministry of Health, Economic Planning Unit and UNDP, Malaysia.
- Kaufmann, D. 2004, October-last update, *Corruption, Governance and Security: Challenges for the Rich Countries and the World* [Homepage of Social Science Research Network], [Online]. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=605801 [2010, 05/19].
- Kaufmann, D., Kraay, A. & Mastruzzi, M. 2009, June 29th-last update, *Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008* [Homepage of SSRN eLibrary], [Online]. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1424591 [2009, 6/1].
- Kaufmann, D., Kraay, A. & Mastruzzi, M. 2003, *Governance Matters III: Governance Indicators for 1996-2002*, World Bank, Washington.
- Kaufmann, D., Kraay, A. & Zoido, P. 1999, *Governance Matters*, World Bank.
- Khang, Y., Lynch, J.W. & Kaplan, G.A. 2005, "Impact of economic crisis on cause-specific mortality in South Korea", *International journal of epidemiology*, vol. 34, no. 6, pp. 1291-1301.
- Khoon, C.C. 2000, November 8th-last update, *Privatisation, the State and Healthcare Reforms: Gloval Influences & Local Contingencies in Malaysia* [Homepage of 4th GASPP Seminar on Global Social Policies and Social Rights? New Delhi, 8- 10. November 2000], [Online]. Available: <http://gaspp.stakes.fi/NR/rdonlyres/9543986B-3E29-42CD-8088-F3992A2B48F2/0/chan.pdf> [2010, 03/04].

- Kingdon, J.W. 1995, *Agendas, alternatives, and public policies*, 2nd ed., Harper Collins, New York.
- Kiros, G. & Hogan, D.P. 2001, "War, famine and excess child mortality in Africa: the role of parental education", *Int.J.Epidemiol.*, vol. 30, no. 3, pp. 447-455.
- Klein, N. 2008; 2007, *The shock doctrine: the rise of disaster capitalism*, Penguin, London.
- Klomp, J. & de Haan, J. 2008, "Effects of Governance on Health: a Cross-National Analysis of 101 Countries", *Kyklos*, vol. 61, no. 4, pp. 599-614.
- Korenromp, E.L., Arnold, F., Williams, B.G., Nahlen, B.L. & Snow, R.W. 2004, "Monitoring trends in under-5 mortality rates through national birth history surveys", *International Journal of Epidemiology*, vol. 33, no. 6, pp. 1293-1301.
- KPJ Johor Specialist Hospital 2010, *Room Rate* [Homepage of KPJ Healthcare], [Online]. Available: http://www.jsh.kpjhealth.com.my/index.php?option=com_content&task=view&id=97&Itemid=119 [2010, 07/07].
- Kristiansson, C., Gotuzzo, E., Rodriguez, H., Bartoloni, A., Strohmeyer, M., Tomson, G. & Hartvig, P. 2009, "Access to health care in relation to socioeconomic status in the Amazonian area of Peru", *International Journal for Equity in Health*, vol. 8, no. 1, pp. 11.
- Kruk, M.E., Prescott, M.R., de Pinho, H. & Galea, S. 2010, "Equity and the child health Millennium Development Goal: the role of pro-poor health policies", *Journal of epidemiology and community health*, vol. Online 18. August 2010.
- Lakhani, A., Coles, J., Eayres, D., Spence, C. & Rachet, B. 2005, "Creative use of existing clinical and health outcomes data to assess NHS performance in England: Part 1--performance indicators closely linked to clinical care", *BMJ*, vol. 330, no. 7505, pp. 1426-1432.
- Landspítali University Hospital 2011a, *Personal communication with a member of staff*, Landspítali University Hospital, Reykjavik, Iceland.
- Landspítali University Hospital 2011b, January 20th-last update, *Tekjuafgangur upp a 52 milljonir hja Landspitala* [Homepage of Landspítali University Hospital], [Online]. Available: <http://landspitali.is/Um-LSH/Frettir-og-vidburdir/Frettasafn/Frett/~/NewsId/17391> [2011, 02/11].
- Landspítali University Hospital 2009, *Um Landspitala* [Homepage of Landspítali University Hospital 2009], [Online]. Available: www.landspitali.is [2009, 07/08].

- Lazarova, E.A. & Mosca, I. 2008, "Does governance matter for aggregate health capital?", *Applied Economics Letters*, vol. 15, no. 3, pp. 199-202.
- Lee, J.H. 2005, *UMNO Factionalism and The Politics Of Malaysian National Identity*, Murdoch University, Australia.
- Lee, K. & Goodman, H. 2002, "Global policy networks: the propagation of health care financing reforms since the 1980s" in *Health Policy in a Globalising World.*, eds. K. Lee, K. Buse & S. Fustukian, 1st ed., Cambridge University Press, Cambridge, pp. 97-119.
- Leng, C.H. & Barraclough, S. 2008, "The growth of corporate health care in Malaysia" in *Health Care in Malaysia*, eds. C.H. Leng & S. Barraclough, 1st ed., Routledge, USA, pp. 19-39.
- Leng, C.H. & Barraclough, S. 2007, *Health Care in Malaysia. The dynamics of provision, finance and access*, 1st ed., Routledge, USA.
- Lewis, M. 2006, *Governance and Corruption in Public Health Care Systems*, Centre for Global Development, Washington.
- Lit, P.K. 2008, "Rising health care costs: the contradictory responses of the Malaysian state" in *Health Care in Malaysia*, eds. C.H. Leng & S. Barraclough, 1st ed., Routledge, USA, pp. 59-71.
- Lit, P.K. 2006, November-last update, *Progressive Health Policies for a Healthier Malaysia* [Homepage of Phua Kai Lit website], [Online]. Available: <http://phuakl.tripod.com/> [2010, 03/08].
- Mackintosh, M. 2007, "International migration and extreme health inequality: robust arguments and institutions for international redistribution in health care" in *The Economics of Health Equity*, eds. D. McIntyre & G. Mooney, 1st ed., Cambridge University Press, New York, pp. 151-173.
- Malaysian Medical Resources 2006, February 8th-last update, *Healthcare privatisation - it's a secret* [Homepage of Coalition Against Health Care Privatisation], [Online]. Available: <http://medicine.com.my/wp/?p=636> [2010, 07/26].
- Malaysian Parliament 2010, *Political Parties Web Links* [Homepage of Parliamen Malaysia], [Online]. Available: <http://www.parlimen.gov.my/eng-pautanparti.htm> [2010, 07/26].
- Malaysian Parliament 2007, *Fees (Medical) (Full Paying Patient) Order 2007*, Order (PU(A) 252/2007 ed., Gazette, 16. July 2007, Malaysia.

Malaysian Parliament 2006a, *Private Healthcare Facilities and Services (Private Hospitals and Other Private Healthcare Facilities) Regulations 2006*, Regulation (PU(A) 138/2006 ed., Gazette, 1. April 2006, Malaysia.

Malaysian Parliament 2006b, *Private Healthcare Facilities and Services (Private Medical Clinics or Private Dental Clinics) Regulations 2006*, Regulation (PU(A) 137/2006 ed., Gazette, 1. April 2006, Malaysia.

Malaysian Parliament 2003, *Fees (Medical) (Amendment) Order 2003*, Order (PU(A) 6/2003) ed., Gazette, 8. January, Malaysia.

Malaysian Parliament 1998, *Private Healthcare Facilities and Services Act 1998*, Act ed., Gazette, Malaysia.

Malaysian Parliament 1982, *Fees (Medical) Order 1982*, Order ed., Gazette, Malaysia.

Malaysian Parliament 1978, *Fees Act 1951(Revised 1978)*, Act ed., Gazette 26. October 1978, Malaysia.

Malaysian Parliament 1972, *The Official Secrets Act 1972 (Act 88)*, Act ed., Gazette, Malaysia.

Malaysian Parliament 1971, *Private Hospital Act 1971*, Act ed., Gazette, Malaysia.

Malaysian Parliament 1957, *Federal Constitution*, Act ed., Gazette, 31. August 1957, Malaysia.

Marks, L., Cave, S. & Hunter, D.J. 2010, "Public health governance: views of key stakeholders", *Public Health (Elsevier)*, vol. 124, no. 1, pp. 55-59.

Marmot, M.G. & Wilkinson, R.G. 2006, *Social determinants of health*, 2nd ed., Oxford University Press, Oxford.

Maynard, A. 2007, "Beware of the libertarian wolf in the clothing of the egalitarian sheep: an essay on the need to clarify ends and means" in *The Economics of Health Equity*, eds. D. McIntyre & G. Mooney, 1st ed., Cambridge University Press, Cambridge, pp. 77-100.

McAlister, C. & Baskett, T.F. 2006, "Female education and maternal mortality: a worldwide survey", *Journal of obstetrics and gynaecology Canada*, vol. 28, no. 11, pp. 983-990.

McIntyre, D. 2010, "WHR 2000 to WHR 2010: what progress in health care financing?", *Health Policy and Planning*, vol. 25, pp. 349-351.

- McIntyre, D. 2007, "Pay the piper and call the tune: changing health care financing mechanisms to address public-private health sector mix inequalities" in *The Economics of Health Equity*, eds. D. McIntyre & G. Mooney, 1st ed., Cambridge University Press, pp. 174-196.
- McIntyre, D. & Mooney, G.H. 2007, *The economics of health equity*, Cambridge University Press, Cambridge.
- McIntyre, D., Thiede, M., Dahlgren, G. & Whitehead, M. 2006, "What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts?", *Social Science & Medicine*, vol. 62, no. 4, pp. 858-865.
- McKee, M., Suhrcke, M., Nolte, E., Lessof, S., Figueras, J., Duran, A. & Menabde, N. 2009, "Health systems, health, and wealth: a European perspective", *The Lancet*, vol. 373, no. 9660, pp. 349-351.
- McLaughlin, K. 2009, January 24th-last update, *Protesters demand Iceland government quits now* [Homepage of Reuters], [Online]. Available: <http://www.reuters.com/article/2009/01/24/idUSLO529629> [2011, 02/14].
- McPake, B. 1993, "User charges for health care in developing countries: a review of the economic literature", *Social Science & Medicine*, vol. 36, no. 11, pp. 1397-1405.
- Mehio-Sibai, A., Feinleib, M., Sibai, T.A. & Armenian, H.K. 2005, "A Positive or a Negative Confounding Variable? A Simple Teaching Aid for Clinicians and Students", *Annals of Epidemiology*, vol. 15, no. 6, pp. 421-423.
- Meier, B.M. 2010, "Global Health Governance and the Contentious Politics of Human Rights: Mainstreaming the Right to Health for Public Health Advancement", *Stanford Journal of International Law*, vol. 46, no. 1.
- Ministry of Finance 2011, *Treasury operating statement 2011* [Homepage of Ministry of Finance], [Online]. Available: http://eng.fjarmalaraduneyti.is/media/Fjarlog/Appendix_tables_Budget_2011.pdf [2011, 02/21].
- Ministry of Finance 2008, *Sameining ríkisstofnana og tengdar breytingar*. Ministry of Finance, Reykjavik.
- Ministry of Health 2009a, February 13th-last update, *Reglugerd um greidsluthatttöku sjúkratrygginga vid kaup a lyfjum 236/2009* [Homepage of Stjornartidindi], [Online]. Available: <http://stjornartidindi.is/Advert.aspx?ID=81319e7b-4b28-45a6-b149-ae8263ae63b7> [2009, 07/12].

- Ministry of Health 2009b, February 3rd-last update, *Reglugerd um hlutdeild sjukratryggdra í kostnadi vegna heilbrigdisthjonustu 109/2009* [Homepage of Stjornartidindi], [Online]. Available: <http://www.reglugerd.is/interpro/dkm/WebGuard.nsf/b7fd33650490f8cf00256a07003476bb/c82802140ad5669200257554003ebfca?OpenDocument> [2009, 06/20].
- Ministry of Health 2009c, January 29th-last update, *Sameining a ekki ad leida til að thjonustan skerdist* [Homepage of Ministry of Welfare], [Online]. Available: <http://www.velferdarraduneyti.is/hbr/frettir/nr/31971> [2011, 04/22].
- Ministry of Health 2009d, January 9th-last update, *Sameiningu heilbrigdisstofnana fagnad* [Homepage of Ministry of Welfare], [Online]. Available: <http://www.velferdarraduneyti.is/hbr/frettir/nr/31960> [2011, 04/22].
- Ministry of Health 2009e, January 7th-last update, *Skipulagsbreytingar heilbrigdisthjonustunnar i landinu* [Homepage of Ministry of Welfare], [Online]. Available: <http://www.velferdarraduneyti.is/hbr/frettir/nr/31957> [2011, 04/22].
- Ministry of Health 2009f, *Skipulagsbreytingar í heilbrigdiskerfinu: Stefnumarkandi breytingar*. Available: http://www.heilbrigdisraduneyti.is/media/frettir_fylgiskjol/skipulagsbreytingar_070109.pdf [2009, 06/20].
- Ministry of Health 2007a, December 21st-last update, *Reglugerd um greidsluthattoku Tryggingastofnunar rikisins vegna kostnadar sjukratryggdra barna yngri en 18 ara vid thjonustu sjalfstaett starfandi salfraedinga 1266/2007* [Homepage of Stjornartidindi], [Online]. Available: <http://www.stjornartidindi.is/Advert.aspx?ID=74545ff0-66d7-465f-a5b9-344b036bc678> [2010, 02/07].
- Ministry of Health 2007b, August 30th-last update, *Reglugerd um heilbrigdisumdaemi 785/2007* [Homepage of Stjornartidindi], [Online]. Available: <http://www.reglugerd.is/interpro/dkm/WebGuard.nsf/58b439f05a7f412f00256a07003476bc/69e7cd4aed0b2a970025734b00570069?OpenDocument> [2009, 06/03].
- Ministry of Health 2006, *National Health and Morbidity Survey III*, 1st ed., Ministry of Health, Malaysia.
- Ministry of Health 2005, August 25th-last update, *Reglugerd um thatttoku Tryggingastofnunar rikisins i kostnadi vid tannlaekningar 698/2010* [Homepage of Ministry of Health], [Online]. Available: <http://www.velferdarraduneyti.is/log-og-reglugerdir/heilbrigdisthjonusta/> [2009, 06/20].
- Ministry of Health 2001, *Heilbrigdisaaetlun til arsins 2010. Langtimamarkmid í heilbrigdismalum*, 1st ed., Ministry of Health, Reykjavík, Iceland.

Mitchell, A. & Bossert, T.J. 2010, "Decentralisation, Governance and Health-System Performance: 'Where You Stand Depends on Where You Sit'", *Development Policy Review*, vol. 28, no. 6, pp. 669-691.

Mo Ibrahim Foundation 2010, *The Ibrahim Index*. Available: <http://www.moibrahimfoundation.org/en/section/the-ibrahim-index> [2011, 01/25].

Mooney, G. 2007, "Equity in the context of diversity of culture and diversity of economic systems." in *The Economics of Health Equity*, eds. D. McIntyre & G. Mooney, 1st ed., Cambridge University Press, Cambridge, pp. 59-76.

Mooney, G. 2009, *Challenging Health Economics*, 1st ed., Oxford University Press, Oxford.

Mooney, G. 2003, *Economics, medicine and health care*, 3rd ed., Financial Times Prentice Hall, Harlow.

Morgan, A. & Swann, C. 2004, *Social capital for health: issues of definition, measurement and links to health*, Health Development Agency, London.

Morgunbladid 2009a, January 29th-last update, *Deildum lokad a Landakoti* [Homepage of Morgunbladid], [Online]. Available: http://mbl.is/mm/frettir/innlent/2009/01/29/deildum_lokad_a_landakoti/ [2009, 06/03].

Morgunbladid 2009b, February 2nd-last update, *Innlagnargjold afnumin* [Homepage of Morgunbladid], [Online]. Available: http://www.mbl.is/frettir/kosning/2009/02/02/innlagnargjold_afnumin/ [2009, 06/04].

Morgunbladid 2009c, February 14th-last update, *LSH a ad skera nidur um 3 milljarða* [Homepage of Morgunbladid], [Online]. Available: http://mbl.is/mm/frettir/innlent/2009/02/14/lsh_a_ad_skera_nidur_um_3_milljarda/ [2009, 06/03].

Morgunbladid 2009d, January 8th-last update, *Raett um nidurskurd i heilbrigdiskerfinu* [Homepage of Morgunbladid], [Online]. Available: http://mbl.is/mm/frettir/innlent/2009/01/08/raett_um_nidurskurd_i_heilbrigdiskerfinu/ [2009, 06/03].

Morgunbladid 2009e, February 13th-last update, *Stjornendum LSH faekkad* [Homepage of Morgunbladid], [Online]. Available: http://mbl.is/mm/frettir/innlent/2009/02/13/stjornendum_lsh_faekkad/ [2009, 06/03].

- Morgunbladid 2009f, April 30th-last update, *Tími fyrir mottoku sjuklinga styttist* [Homepage of Morgunbladid], [Online]. Available: <http://mogginnminn.is/mm/greinilegur/frett/1415013/> [2009, 06/17].
- Murray, C.J. & Frenk, J.A. 2000, "A framework for assessing the performance of health systems", *Bulletin of the World Health Organization*, vol. 78, no. 6, pp. 717-731.
- Murray, C.J.L., Lopez, A.D. & Wibulpolprasert, S. 2004, "Monitoring global health: time for new solutions", *BMJ*, vol. 329, no. 6, pp. 1096-1100.
- Musgrove, P. 1996, *Public and Private Roles in Health. Theory and Financing Patterns*, 1st ed., The World Bank, Washington, DC.
- National Broadcasting service November 2008, *Otharfi ad taka ut fe*, <http://www.ruv.is/heim/frettir/stort/frett/store64/item236947/> ed., National Broadcasting service, Reykjavik.
- National Broadcasting service 2009, , *Ovist með nytingu skurdstofa*. Available: <http://www.ruv.is/heim/frettir/frett/store64/item287242/> [2009, 07/08].
- National Public Health Institute of Iceland 2005, *Umfang reykinga. Samantekt 2005* [Homepage of National Public Health Institute of Iceland], [Online]. Available: http://www.lydheilsustod.is/media/tobaksvarnir/rannsoknir/reykingaskyrsla_2005.pdf [2009, 07/12].
- Navarro, V. 2007a, "Neoliberalism as a Class Ideology; Or, the Political Causes of the Growth of Inequalities" in *Neoliberalism, Globalization and Inequalities: Consequences for Health and Quality of Life*, ed. V. Navarro, 1st ed., Baywood Publishing Company, Inc, New York, pp. 9-26.
- Navarro, V. 2007b, "The World Health Situation" in *Neoliberalism, Globalization and Inequalities: Consequences for Health and Quality of Life*, ed. V. Navarro, 1st ed., Baywood Publishing Company, Inc., New York, pp. 203-214.
- Navarro, V., Borrell, C., Benach, J., Muntaner, C., Quiroga, A., Rodriguez-Sanz, M., Vergés, N., Gumá, J. & Pasarín, I. 2003, "The importance of the political and the social in explaining mortality differentials among the countries of the OECD, 1950-1998", *International Journal of Health Services*, vol. 33, no. 3, pp. 419-494.
- Navarro, V. 2007, "The Politics of Health Inequalities Research in the United States" in *Neoliberalism, Globalization and Inequalities: Consequences for Health and Quality of Life*, ed. V. Navarro, 1st ed., Baywood Publishing Company, Inc, New York, pp. 287-300.
- Navarro, V. 2000, "Assessment of the World Health Report 2000", *The Lancet*, vol. 356, no. 9241, pp. 1598-1601.

- Navarro, V. & Shi, L. 2001, "The political context of social inequalities and health", *Social science & medicine*, vol. 52, no. 3, pp. 481-491.
- New Strait Times 2010, *These kids need your help*, New Strait Times, April 12th, Malaysia.
- Nicholas, C. & Baer, A. 2006, "Healthcare for the Orange Asli: Consequences of paternalism and non-recognition" in *Health Care in Malaysia*, eds. C.H. Leng & S. Barraclough, 1st ed., Routledge, USA, pp. 119-136.
- Nolte, E. & McKee, M. 2004, "Population health in Europe: how much is attributable to health care?", *World Hospitals and Health Services*, vol. 40, no. 3, pp. 12-14, 40, 42.
- Olafsdottir, A.E., Reidpath, D.D., Subhash, P., Allotey, P., "Health systems performance in sub-Saharan Africa: governance, outcome and equity." *BMC Public Health*, vol. 11, pp. 237-244
- Organisation for Economic Co-Operation and Development 2009, October 21st-last update, *OECD Health Data 2009. How Does Iceland Compare* [Homepage of Organisation for Economic Co-Operation and Development], [Online]. Available: <http://www.oecd.org.v-ezproxy.brunel.ac.uk:2048/dataoecd/43/21/40905007.pdf> [2009, 07/03].
- Organisation for Economic Co-operation and Development 2008, *OECD Economic Surveys. Iceland*.
- Organisation for Economic Co-operation and Development 2007, July 23rd-last update, *Governance* [Homepage of Organisation for Economic Co-operation and Development], [Online]. Available: <http://stats.oecd.org/glossary/detail.asp?ID=7236> [2011, 02/06].
- Pantai Hospital Kuala Lumpur 2010, *Facilities* [Homepage of Pantai Holdings Berhad], [Online]. Available: http://www.pantai.com.my/hospital_details.php?branch=kl&id=48 [2010, 07/07].
- Parry, J. & Humphreys, G. 2009, "Health amid a financial crisis: a complex diagnosis", *Bulletin of the World Health Organization*, vol. 87, no. 1, pp. 4-5.
- Paxson, C. & Schady, N. 2005, "Child Health and Economic Crisis in Peru", *World Bank Econ Rev*, vol. 19, no. 2, pp. 203-223.
- Plochg, T., Delnoij, D.M.J., Hogervorst, W.V.G., van Dijk, P., Belleman, S. & Klazinga, N.S. 2006, "Local health systems in 21st century: who cares? An exploratory study on health system governance in Amsterdam", *Eur J Public Health*, vol. 16, no. 5, pp. 559-564.

- Poullier, J.P., Hernandez, P., Kawabata, K. & Savedoff, W.D. 2002, "Patterns of Global Health Expenditures: Results for 191 Countries.", World Health Organization, Geneva
- Primary Health Care of the Capital Area 2010, August 25th-last update, *Reksturinn jakvaedur a fyrri helmingi arsins* [Homepage of Primary Health Care of the Capital Area], [Online]. Available: <http://www.heilsugaeslan.is/?PageID=785&NewsID=421> [2011, 02/22].
- Prime Minister's Office 2008, September 29th-last update, *Samkomulag um að rikissjodur leggi Glitni til nytt hlutafe* [Homepage of Prime Minister's Office], [Online]. Available: <http://www.forsaetisraduneyti.is/frettir/nr/3018> [2009, 05/29].
- Putnam, R.D. 2000, *Bowling alone: the collapse and revival of American community*, Simon & Schuster, New York/ London.
- Quek, D.K.L. 2004, *The Malaysian Health Care System: A Review* [Homepage of Documents for Small Business & Professionals], [Online]. Available: <http://www.docstoc.com/docs/69312609/The-Malaysian-Health-Care-System--A-Review> [2011, 04/22].
- Rajakumar, M.K. 2007, "Foreword" in *Health Care in Malaysia*, eds. H.L. Chee & S. Barraclough, 1st ed., Routledge, London and New York, pp. x-xix.
- Rajkumar, A.S. & Swaroop, V. 2008, "Public spending and outcomes: Does governance matter?", *Journal of Development Economics*, vol. 86, no. 1, pp. 96-111.
- Ramesh, M. 2007, "Malaysian health policy in comparative perspective" in *Health Care in Malaysia*, eds. C.H. Leng & S. Barraclough, 1st ed., Routledge, USA and Canada, pp. 72-84.
- Reidpath, D.D. & Allotey, P. 2007, "Measuring global health inequity", *International Journal for Equity in Health*, vol. 6, pp. 16.
- Reidpath, D.D., Morel, C.M., Mecaskey, J.W. & Allotey, P. 2009, "The millennium development goals fail poor children: the case for equity-adjusted measures", *PLoS Medicine*, vol. 6, no. 4.
- Reidpath, D. & Allotey, P. 2006, "Structure, (governance) and health: an unsolicited response", *BMC International Health and Human Rights*, vol. 6, no. 1, pp. 12.
- Reidpath, D. & Allotey, P. 2003, "Infant mortality rate as an indicator of population health", *J Epidemiol Community Health*, vol. 57, no. 5, pp. 344-6.
- Roberts, M.J., Hsiao, W., Berman, P. & Reich, M.R. 2008, *Getting Health Reform Right*. 1st ed., Oxford University Press, Oxford.

- Roemer, M.I. 1991, *National health systems of the world*, Oxford University Press, Oxford.
- Rotberg, R. & Gisselquist, R. 2007, September 25th-last update, *Ibrahim Index of African Governance* [Homepage of Belfer Center, Harvard University], [Online]. Available: http://belfercenter.ksg.harvard.edu/publication/17520/ibrahim_index_of_african_governance.html [2011, 02/13].
- Ruger, J.P. 2007, "Global health governance and the World Bank", *The Lancet*, vol. 370, no. 9597, pp. 1471-1474.
- Sabatier, P.A. (ed) 2007, *Theories of the Policy Process*, 2nd ed., Westview Press, Colorado, USA.
- Sabatier, P.A. & Weible, C.M. 2007, "The Advocacy Coalition Framework" in *Theories of the Policy Process*, ed. P.A. Sabatier, 1st ed., Westview Press, USA, pp. 189-220.
- Safaei, J. 2006, "Is democracy good for health?", *International Journal of Health Services*, vol. 36, no. 4, pp. 767-786.
- Saisana, M., Annoni, P. & Nardo, M. 2009, *A robust model to measure governance in African countries*, European Commission, Joint Research Centre Institute for the Protection and Security of the Citizen. Report number: EUR 23773 EN 2009. Luxembourg.
- Saltman, R.B. & Ferroussier-Davis, O. 2000, "The concept of stewardship in health policy", *Bulletin of the World Health Organization*, vol. 78, no. 6, pp. 732-739.
- Savedoff, W. 2003, *How much should countries spend on health?*, World Health Organization, Geneva.
- Schoen, C., Davis, K., How, S.K.H. & Schoenbaum, S.C. 2006, "U.S. Health System Performance: A National Scorecard", *Health affairs*, vol. 25, pp. w457-w475.
- Segal, L. 1998, "The importance of patient empowerment in health system reform", *Health Policy*, vol. 44, no. 1, pp. 31-44.
- Selvaraju, D.D.S. 2006, *Health Information Management: Malaysian Experience* [Homepage of Asia Pacific Association for Medical Informatics], [Online]. Available: <http://www.apami.org/apami2006/papers/Health%20Information%20Management%20Malaysian%20Experience.pdf> [2010, 03/24].
- Sen, A. 1999, *Development as freedom*, 1st ed., Anchor Books, New York.

- Siddiqi, S., Masud, T., Nishtar, S., Peters, D., Sabri, B., Bile, K.M., Jama, M. 2009, "Framework for assessing governance of the health system in developing countries: Gateway to good governance", *Health Policy*, vol. 90, no. 1, pp. 13-25
- Sheaff, R. 2005, "Governance in gridlock in the Russian health system; the case of Sverdlovsk oblast", *Social science & medicine*, vol. 60, no. 10, pp. 2359-2369.
- Sheng, Y.K. 2011, *What is good governance?* [Homepage of Economic and Social Commission for Asia and the Pacific], [Online]. Available: <http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp> [2011, 04/22].
- Shkolnikov, V.M., Cornia, G.A., Leon, D.A. & Meslé, F. 1998, "Causes of the Russian mortality crisis: Evidence and interpretations", *World Development*, vol. 26, no. 11, pp. 1995-2011.
- Sigurbjornsson, K. 2011, January 1st-last update, *Gudi se lof fyrir lifid!* [Homepage of Evangelical Lutheran Church of Iceland], [Online]. Available: <http://tru.is/postilla/2011/1/gudi-se-lof-fyrir-lifid> [2011, 02/21].
- Sigurdsson, E. 2009, *Medical Director and Consultant Psychiatrist - exchange of information through e-mails.*
- Singh-Manoux, A., Dugravot, A., Smith, G.D., Subramanyam, M. & Subramanian, S.V. 2008, "Adult education and child mortality in India: the influence of caste, household wealth, and urbanization", *Epidemiology*, vol. 19, no. 2, pp. 294-301.
- Sivanandam, H. 2010, *One flat rate*, The Sun, July 12th, Malaysia.
- Smith, P.C. 2002, "Measuring health system performance", *The European Journal of Health Economics*, vol. 3, no. 3, pp. 145-148.
- Social Insurance Administration of Iceland 2009, April 1st-last update, *Hvad a eg ad greida fyrir laeknisthjonustu og heilsugaeslu?* [Homepage of Social Insurance Administration of Iceland], [Online]. Available: http://www.tr.is/media/gjaldskrar/Laeknisthjonusta_heilsugaesla_2009_01.04.09.pdf [2009, 07/13].
- Social Insurance Administration of Iceland 2008, *Rammasamningur milli Sjúkratrygginga Islands og tannlaekna.* Available: <http://www.tr.is/media/skjolpdf/81219-Rammas-1.pdf> [2009, 07/13].
- Statistics Iceland 2011a, *Buferlaflutningar* [Homepage of Statistics Iceland], [Online]. Available: <http://hagstofa.is/Hagtolur/Mannfjoldi/Buferlaflutningar> [2011, 02/22].

- Statistics Iceland 2011b, *Consumer price index* [Homepage of Statistics Iceland], [Online]. Available: <http://www.statice.is/Statistics/Prices-and-consumption/Consumer-price-index> [2011, 02/21].
- Statistics Iceland 2011c, March 9th-last update, *Quarterly government accounts, 4th quarter 2010*. [Homepage of Statistics Iceland], [Online]. Available: <https://hagstofa.is/lisalib/getfile.aspx?ItemID=12208> [2011, 04/10].
- Statistics Iceland 2009a, *Mannfjöldi* [Homepage of Statistics Iceland], [Online]. Available: <http://www.hagstofa.is/Hagtalur/Mannfjoldi> [2009, 07/05].
- Statistics Iceland 2009b, "National accounts: General government finances 2008, preliminary accounts", *Statistical Series*, vol. 17, no. 4, pp. 1-48.
- Statistics Iceland 2008, December 10th-last update, *Prices and consumption. Household expenditure survey 2005-2007* [Homepage of Statistics Iceland], [Online]. Available: <https://hagstofa.is/lisalib/getfile.aspx?ItemID=8963> [2009, 07/08].
- Steingrimsdottir, L., Thorgeirsdottir, H. & Olafsdottir, A. 2003, *Hvad borda Íslendingar? Konnun a mataraedi Islendinga 2002*. Available: <http://www.lydheilsustod.is/media/manneldi/rannsoknir/skyrsla.pdf> [2008, 03/21].
- Strauss, A.L. & Corbin, J.M. 1990, *Basics of qualitative research. Grounded Theory Procedures and Techniques*, 1st ed., Sage, London.
- Stuckler, D., Basu, S., Suhrcke, M., Coutts, A. & McKee, M. 2009, "The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis", *The Lancet*, vol. 374, no. 9686, pp. 315-323.
- Tarin, E., Green, A., Omar, M. & Shaw, J. 2009, *Policy process for health sector reforms: a case study of Punjab Province (Pakistan)*, John Wiley & Sons.
- The Africa Report 2009 2009, *Country Profiles*.
- Thomas, C. & Weber, M. 2004, "The Politics of Global Health Governance: Whatever Happened to "Health for All by the Year 2000"?", *Global Governance*, vol. 10, pp. 187-205.
- Thorarinsson, E.þ., Hardarson, Þ., Vilhjálmsson, R., Sigvaldason, H. & Sigfusson, N. 2000, "Leit ad þattum er skyra samband menntunar og danartidni", *The Icelandic Medical Journal*, vol. 86, no. 2, pp. 91-101.
- Thordarson, G.T. 2009, *Horfst í augu vid stadreyndir*. Available: http://mbl.is/mm/gagnasafn/grein.html?grein_id=1269172 [2009, 06/20].

- Thoroddsen, S. 2009, January 10th-last update, *Enn um Heilbrigdisstofnun Sudurnesja* [Homepage of Vikurfrettir], [Online]. Available: <http://www.vf.is/Frettir/39197/default.aspx> [2009, 06/04].
- Towse, A., Mills, A. & Tangcharoensathien, V. 2004, "Learning from Thailand's health reforms", *BMJ*, vol. 328, no. 7431, pp. 103-105.
- Transparency International 2008, *Global Corruption Report 2008. Corruption in the Water Sector*, 1st ed., Cambridge University Press, England.
- Travis, P., Bennett, S., Haines, A., Pang, T., Bhutta, Z., Hyder, A.A., Pielemeier, N.R., Mills, A. & Evans, T. 2004, "Overcoming health-systems constraints to achieve the Millennium Development Goals", *The Lancet*, vol. 364, no. 9437, pp. 900-906.
- United Nations 1993, July 12th-last update, *Vienna Declaration and Programme of Action* [Homepage of United Nations], [Online]. Available: [http://www.unhchr.ch/huridocda/huridoca.nsf/\(symbol\)/a.conf.157.23.en](http://www.unhchr.ch/huridocda/huridoca.nsf/(symbol)/a.conf.157.23.en) [2010, 10/27].
- United Nations 1948, December 10th-last update, *Universal declaration of Human Rights* [Homepage of United Nations], [Online]. Available: <http://www.un.org/Overview/rights.html> [2008, 03/15].
- United Nations Development Programme 2008, *Statistics of the Human Development Report* [Homepage of United Nations Development Programme], [Online]. Available: <http://hdr.undp.org/en/statistics/> [2009, 02/04].
- United Nations, Department of Economics and Social Affairs 2007, *Public Governance Indicators: A Literature Review*, United Nations, New York.
- Victora, C.G., Vaughan, J.P., Barros, F.C., Silva, A.C. & Tomasi, E. 2000, "Explaining trends in inequities: evidence from Brazilian child health studies", *The Lancet*, vol. 356, no. 9235, pp. 1093-1098.
- Vilhjalmsson, R. 2007, "Islenska heilbrigdiskerfid á krossgotum", *Rannsóknir í félagsvísindum*, vol. VIII, pp. 197-206.
- Vilhjalmsson, R., Olafsson, O., Sigurdsson, J.A. & Herbertsson, T.P. 2001, *Adgangur ad heilbrigdisthjonustu a Islandi*. Directorate of Health, Reykjavik.
- Vilhjalmsson, R. & Sigurdardottir, G.V. 2003, "Hid ofullkomna jofnunartaeki: Afslattarkort og komugjold i islenska heilbrigdiskerfinu", *The Icelandic Medical Journal*, vol. 89, pp. 387-392.

- Visir 2009a, January 8th-last update, *Gudlaugur synir starfsfolki litilsvirðingu* [Homepage of visir.is], [Online]. Available: <http://www.visir.is/article/2009533697565> [2009, 06/03].
- Visir 2009b, November 9th-last update, *Island gjörspillt samkvaemt nyrri konnun* [Homepage of visir.is], [Online]. Available: <http://www.visir.is/article/20091109/frettir01/818478210/1098> [2010, 01/25].
- Visir 2008a, September 29th-last update, *Glitnir thjóðnyttur fyrir 84 milljarda krona* [Homepage of visir.is], [Online]. Available: <http://www.visir.is/article/2008593022927> [2009, 05/29].
- Visir 2008b, November 21st-last update, *Robert beitir ser fyrir samstarfi vid virta sjukrastofnun i Bandaríkjunum* [Homepage of visir.is], [Online]. Available: <http://www.visir.is/article/20081121/FRETTIR01/160629789> [2009, 07/08].
- Wade, R. 2009, "The Crisis. Iceland as Icarus", *Challenge*, vol. 52, no. 3, pp. 5-33.
- Wagner, P. & Wollmann, H. 1986, "Fluctuations in the development of evaluation research: do "regime shifts" matter?", *International Social Science Journal*, vol. 38, pp. 205-218.
- Wagstaff, A. & Claeson, M. 2004, *Rising to the Challenges. The Millennium Development Goals for Health*, 1st ed., The World Bank, Washington DC.
- Wagstaff, A. & Van Doorslaer, E. 2000, "Equity in health care finance and delivery", *Handbook of Health Economics*, vol. 1B.
- Walt, G. 2006, *Health Policy: An Introduction to Process and Power*, 8th ed., Zed Books, London and New Jersey.
- Walt, G. 1994, *Health Policy. An Introduction to Process and Power*, 1st ed., Zed Books Ltd, London.
- Walt, G. & Gilson, L. 1994, "Reforming the health sector in developing countries: the central role of policy analysis", *Health policy and planning*, vol. 9, no. 4, pp. 353-370.
- Walt, G., Shiffman, J., Schneider, H., Murray, S.F., Brugha, R. & Gilson, L. 2008, "'Doing' health policy analysis: methodological and conceptual reflections and challenges", *Health policy and planning*, vol. 23, no. 5, pp. 308-317.
- Waters, H., Saadah, F. & Pradhan, M. 2003, "The impact of the 1997-98 East Asian economic crisis on health and health care in Indonesia", *Health policy and planning*, vol. 18, no. 2, pp. 172.

- Westert, G., van den Berg, M., Kooman, X. & Verkleij, H. 2008, *Dutch Health Care Performance Report 2008*, National Institute for Public Health and the Environment, The Netherlands.
- Whitehead, M. 1991, "The concepts and principles of equity and health", *Health Promotion International*, vol. 6, no. 3, pp. 217-228.
- Wilkinson, R. & Pickett, K. 2009, *The Spirit Level: Why greater quality makes societies stronger*. 1st ed., Allen Lane, Penguin Group, Great Britain.
- Williams, A. 2000, "Science of marketing at WHO? A commentary on "World Health 2000", *Health Economics*, vol. 10, pp. 93-100.
- Wonderling, D., Gruen, R. & Black, N. 2010, *Introduction to health economics*, Open University Press, Maidenhead.
- World Bank 2012, Result-Based Financing for Health (RBF) [Homepage of World Bank], [Online]. Available: <http://www.rbfhealth.org/rbfhealth/> [2012, 06/10]
- World Bank 2010a, *Data - Indicators: Mortality rate, under-5 (per 1,000)* [Homepage of World Bank], [Online]. Available: <http://data.worldbank.org/indicator/SH.DYN.MORT> [2010, 12/21].
- World Bank 2010b, *World Bank Atlas Method* [Homepage of World Bank], [Online]. Available: <http://data.worldbank.org/about/country-classifications/world-bank-atlas-method> [2010, 11/13].
- World Bank 2010c, *Worldwide Governance Indicators* [Homepage of World Bank], [Online]. Available: <http://info.worldbank.org/governance/wgi/index.asp> [2010, 15/15].
- World Bank 2007a, December 11th-last update, *Accountability in Governance* [Homepage of World Bank], [Online]. Available: <http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/AccountabilityGovernance.pdf> [2010, 05/19].
- World Bank 2007b, September-last update, *Detailed Data by Indicator: Childhood Illness and Mortality* [Homepage of World Bank], [Online]. Available: <http://go.worldbank.org/T0M4GORUB0> [2009, 01/20].
- World Bank 2006, *Health Financing Revisited*, 1st ed., World Bank, Washington DC.
- World Bank 1993a, *The East Asian Miracle: Economic Growth and Public Policy*, 1st ed., Oxford University Press, Washington D.C.

- World Bank 1993b, June-last update, *World Development report 1993: Investing in Health* [Homepage of Oxford University Press], [Online]. Available: <http://files.dcp2.org/pdf/WorldDevelopmentReport1993.pdf> [2010, 03/25].
- World Bank 1989, July 31st-last update, *Financing health services in developing countries: an agenda for reform* [Homepage of World Bank], [Online]. Available: http://www-wds.worldbank.org/servlet/main?print=Y&menuPK=64187510&pagePK=64193027&piPK=64187937&theSitePK=523679&entityID=000178830_98101903343495 [2010, 03/25].
- World Health Organization 2011, 2001-last update, *Health System Performance* [Homepage of World Health Organization], [Online]. Available: <http://www.who.int/health-systems-performance/about.htm#What%20is%20a%20health%20system?> [2011, 01/10].
- World Health Organization 2010, *World Health Organization Global Health Observatory* [Homepage of World Health Organization], [Online]. Available: <http://www.who.int/gho/en/> [2010, 12/21].
- World Health Organization 2009a, January 21st-last update, *The Financial Crisis and global Health*. Available: http://www.who.int/mediacentre/events/meetings/2009_financial_crisis_report_en_.pdf [2009, 02/06].
- World Health Organization 2009b, 2009-last update, *Malaysia - Country Context* [Homepage of Regional Office for the Western Pacific], [Online]. Available: <http://www.wpro.who.int/NR/rdonlyres/DA2B128C-C64C-45FA-B1E1-D3FF8590EC71/0/19finalMAApro09.pdf> [2009, 10/22].
- World Health Organization 2008a, *The World Health Report 2008: Primary Health Care. Now More Than Ever*, 1st ed., The World Health Organization, Switzerland.
- World Health Organization 2008b, 2008-last update, *World Health Statistics 2008*. Available: http://www.who.int/whosis/whostat/EN_WHS08_Table1_Mort.pdf [2009, 02/06].
- World Health Organization 2007a, 2007-last update, *Malaysia: Health Situation and Trend* [Homepage of World Health Organization, Western Pacific Region], [Online]. Available: http://www.wpro.who.int/countries/2007/maa/health_situation.htm [2011, 01/31].
- World Health Organization 2007b, *Everybody's business. Strengthening Health Systems to improve health outcomes. WHO's Framework for Action*. The World Health Organization, Switzerland

- World Health Organization 2005, November 9th-last update, *What is a health system?* [Homepage of World Health Organization], [Online]. Available: <http://www.who.int/features/qa/28/en/index.html> [2008, 06/03].
- World Health Organization 2002, March-last update, *Epidemic of Inactivity Threatens ASEAN Countries* [Homepage of Regional Office for the Western Pacific], [Online]. Available: http://www.wpro.who.int/media_centre/press_releases/pr_20020312.htm [2009, 10/21].
- World Health Organization 2000, *World Health Report 2000*, World Health Organization, Geneva.
- Yin, R.K. 2009, *Case study research: design and methods*, 4th ed., Sage, London.
- Yin, R.K. 2003, *Case study research: design and methods*, 3rd ed., Sage Publications, California.
- Yu, C., Whynes, D. & Sach, T. 2008, "Equity in health care financing: The case of Malaysia", *International Journal for Equity in Health*, vol. 7, no. 1, pp. 15.
- Yusop, H. 2009, November 24th-last update, *Govt plans to implement health funding scheme* [Homepage of Sun2Surf], [Online]. Available: <http://www.sun2surf.com/article.cfm?id=40592> [2010, 03/05].
- Zahariadis, N. 2007, "The Multiple Streams Framework" in *Theories of the Policy Process*, ed. P.A. Sabatier, second ed., Westview Press, Colorado, USA, pp. 65-92.
- Zoega, G. 2008, April 9th-last update, *A spending spree* [Homepage of VOX, Research-based policy analysis and commentary from leading economists], [Online]. Available: <http://www.voxeu.org/index.php?q=node/1043> [2009, 06/30].