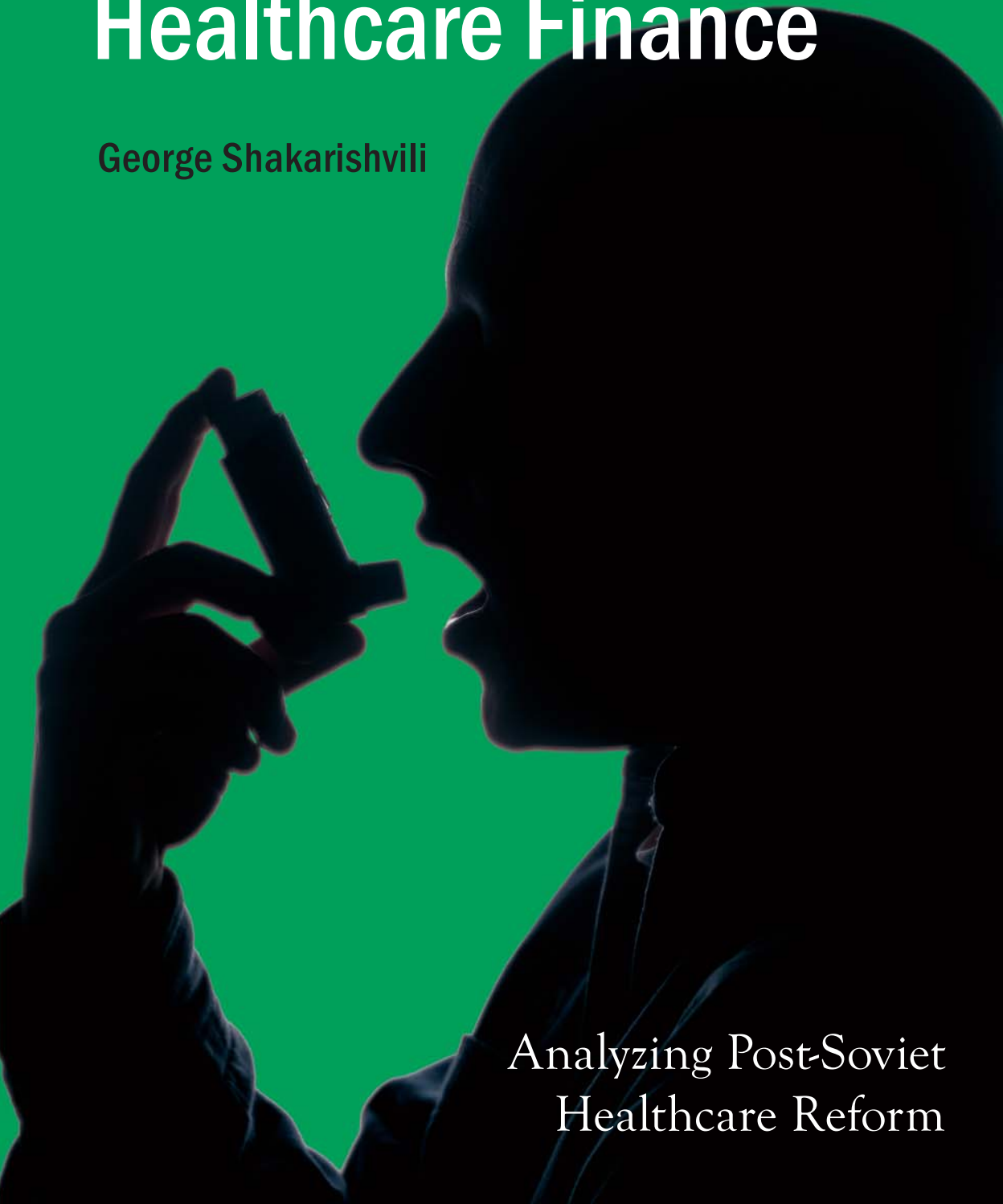
Poverty and Equity in Healthcare Finance

George Shakarishvili



Analyzing Post-Soviet Healthcare Reform

Poverty and Equity in Healthcare Finance: Analyzing Post-Soviet Healthcare Reform

by

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Foreword

This study examines whether the healthcare reforms implemented in Central and Eastern European countries, including the republics of the former USSR (presently CIS),[1] throughout the 1990s and early 2000s, have affected one of the most important aspects of the healthcare system—equity in its financing. A particular focus of the analysis is the impact of out-of-pocket payments (OPP) for health services on poverty.

The study first carries out statistical analysis of equity in health care at the aggregate regional level in order to identify regional trends and patterns. This analysis is based on household health survey data collected in 15 countries of the region in the early 2000s.

The report then provides more detailed statistical measurements of equity in health care financing, focused on out-of-pocket payments, in three selected countries—Armenia, Georgia, and Lithuania. These analyses measure the progressivity of health care financing systems as well as the impact of out-of-pocket health expenditures on households' poverty levels. Six alternative and complementary statistical methods are used including the Kakwani Index, the Impoverishing Medical Expenditure, the Catastrophic Medical Expenditure, and others. These measurements are performed twice in each country, based on data collected in the early 1990s and early 2000s. Thus, the analysis allows for not only cross-country comparisons, but also for cross-time comparisons within each country to compare the pre-reform and post-reform status of equity in health financing.

The study also provides comparative health systems assessment in the selected countries. This is aimed at "diagnosing" the underlying causes of inequities and investigates how equity differs in three different types of reformed post-soviet health care financing systems.

And finally, the report suggests what implications the findings may have on further health reforms aimed at enhancing equity in healthcare in CEE/CIS countries.

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About the Author

George Shakarishvili is an international health specialist with over 10 years experience as a technical consultant, program manager, and analyst in the Central and Eastern Europe and CIS regions, and more recently in Africa, Asia, and the Middle East. He holds an M.D. from the Tbilisi State Medical University, a Ph.D. in comparative social policy from Oxford, and an M.P.H. from Boston University. He is the editor of *Decentralization in Healthcare: Analyses and Experiences in Central and Eastern Europe in the 1990s*. Currently he is a director of International Health Group at Chemonics in Washington, D.C.

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AMD	Armenian Dram
ATP	Ability to Pay
BBP	Basic Benefit Package
CEE	Central/Eastern Europe
CINDI	Countrywide Integrated Non-communicable Disease Intervention Program
CIS	The Commonwealth of Independent States
CIT	Corporate Income Tax
CME	Catastrophic Medical Expenditure
CMEA	Council for Mutual Economic Assistance
CMO	County Medical Officer
DPH	Department of Public Health
DRG	Disease Related Group
DSSHS	Department of Sanitary Surveillance and Hygienic Standards
ECA	Europe/Central Asia
ER	Emergency Room
EU	European Union
EQUILAC	Equity in Health in Latin America and the Caribbean
EYLS	Equity-adjusted Years of Life Saved
FDI	Foreign Direct Investment
FFC	Fairness of Financing Contributions
GDP	Gross Domestic Product
GEL	Georgian Lari
GP	General Practitioner
HFC	Health Financing Contribution
HIV	Human Immunodeficiency Virus
IFAD	International Fund for Agricultural Development
IME	Impoverishing Medical Expenditure
KMU	Kaunas Medical University
LTL	Lithuanian Lita
MMO	Municipal Medical Officer
MoF	Ministry of Finance

MoH	Ministry of Health
MoLHSA	Ministry of Labor, Health, and Social Affairs
NGO	Nongovernmental Organization
NHA	National Health Accounts
NHMC	National Health Management Center
NHS	National Health Service
NSS	National Statistical Service
OECD	Organization for Economic Cooperation and Development
OPP	Out-of-Pocket Payments
PA	Physician's Assistant
PAHO	Pan-American Health Organization
PHC	Primary Healthcare
PIT	Personal Income Tax
SDR	Standard Death Rate
SDS	State Department of Statistics
SHA	State Health Agency
SHF	State Health Fund
SMIC	State Medical Insurance Company
STDs	Sexually Transmitted Diseases
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States Dollar
USIF	United Social Insurance Fund
USSR	United Soviet Socialist Republics
WB	World Bank
WHO	World Health Organization (Geneva)
WHO-Euro	World Health Organization, Regional Office for Europe (Copenhagen)
VAT	Value Added Tax
VU	Vilnius University

1. INTRODUCTION

This study examines whether the healthcare reforms implemented in Central and Eastern European countries, including the republics of the former USSR (presently CIS),[1] throughout the 1990s and early 2000s, have affected one of the most important aspects of the healthcare system—equity in its financing. The study is especially focused on analyzing the impact of out-of-pocket payments for health services (OPP) on households' poverty levels. The report first provides a general overview of equity in health and healthcare throughout the region, then offers an in-depth analysis of equity in OPP healthcare financing in three countries studied—Armenia, Georgia, and Lithuania.

In the early 1990s, as they entered the difficult transition from a totalitarian political system and centrally planned economy to a democratic political system and market economy, the former socialist states of this region experienced sharp economic decline, political instability, and, in some instances, military conflicts. The period witnessed the significant deterioration of healthcare resources and infrastructure and the acute worsening of major health indicators for the region's population (Barr 1994; World Bank 1999; Belli 2001). The former Soviet states recognized an undeniable need to implement radical reforms in their healthcare sectors, and most launched health reform programs in the early and mid-1990s.

While the healthcare sectors in these countries featured more or less similar organizational structures and policy environments during the pre-reform period, approaches to reforming the sector have varied. Consequently, the design, process, and outcomes of the 1990s health reforms in the region have also differed across countries. This variation notwithstanding, the post-soviet healthcare reforms possess enough common features to allow for region-wide, trans-national analysis (Saltman 1997). Most countries, for instance, have introduced social insurance mechanisms to replace or supplement existing tax-based financing, have decentralized responsibility for management, financing, and delivery in the healthcare sector, and have increased private-sector involvement in service delivery. There have been numerous attempts to rationalize and downsize healthcare infrastructure and human resources, as well as an overall emphasis on developing cost-effective primary care services and enhancing public health interventions.

When one analyzes the 1990s healthcare reform experience in the countries of the CEE/CIS region, several common trends emerge. These trends are summarized in the paragraphs that follow. First, the design of healthcare reforms, especially at early phases, was not adequately coordinated with broader political and economic development processes (Saltman, 1997). Many countries made ambitious assumptions about economic growth in the early post-soviet period. Consequently, their health system designs presumed the consumption of larger resources than were actually made available to the sector. In numerous instances, these erroneous projections resulted in the

incompatibility of existing resources with the newly designed health sector's structure, objectives, and functions.

Second, public administration reforms in many countries were structured around the assumption that responsibilities for service provision (and, in some cases, for financing) would be transferred from the central government to local governments at the municipal and regional levels (McKee 2002). However, the capacity of many local governments to manage these responsibilities was weakened by other elements of reform, including direct funding of providers by health insurance funds, privatization of primary healthcare, self-management powers accorded to hospitals and other secondary care institutions, and, in a number of countries, fragmentation of jurisdiction among territorial levels. The authority of some local governments has been further diluted by the political strength of healthcare professionals.

Third, technical capacity at the local government and institutional levels—necessary for the effective functioning of a decentralized system—has also been inadequate (Saltman 1997). At the levels of both primary and hospital care, health managers and individual practitioners have faced difficulties in following complex reimbursement and billing regulations, which have often led to disputes between providers and customers. Meanwhile, local branches of insurance funds have been too slow in processing claims, thus delaying payments to providers. Local governments have not always been able to offer effective intervention, resolve disputes, or provide necessary support to insurance and/or healthcare institutions.

Fourth, health insurance and transfers from the central budget—and, in some countries, significant out-of-pocket payments (OPP)—meet the bulk of the operating costs associated with healthcare (Lewis 2000). Local governments have the responsibility of maintaining and developing healthcare infrastructure, the ownership of which they have assumed. However, intergovernmental financial relations make inadequate allowance for these obligations, and municipal hospital owners are often responsible for providing services to surrounding areas from which they derive no revenue. Many countries have been facing the deterioration of their healthcare facilities and equipment, especially in rural areas.

Additionally, the decentralization of service provision and financing has contributed to the dismantling of the integrated healthcare provision system (McKee 2002). Referring patients between levels of care has become more difficult, and the overall system has grown less user-friendly. Various types of ownership and provider legal status (e.g. private primary care, locally owned secondary care, centrally owned tertiary care) as well as multiple funding sources (e.g. municipal funds, central and local social insurance funds, central budget, private insurance, OPP) have rendered the system extremely complex. The system is confusing not only for consumers, but also for providers. In some cases, financial incentives encourage providers to refer patients unnecessarily to specialists' facilities; in other instances, providers are tempted to provide excessive treatment

themselves. Systems of payment have undergone evolution and frequent change, shifting in emphasis from measuring the input costs of a historical network of institutions and staffing levels to measuring output. The search continues for a fairer and more efficient relationship between output and need.

Insurance agencies' introduction of a system of selective provider contracting has helped to make spending more efficient by reducing the fixed cost of care. At the same time, it has improved the quality of care by funneling patients to a limited number of facilities that offer higher quality services. However, the switch from universal contracting to selective contracting has produced some drawbacks. The implementation of a competitive structure for providers has created tension between providers and governments. Only those facilities that have won contracts have been satisfied by this system; others have protested the loss of stable revenue sources. Meanwhile, selective contracting has complicated the system for consumers. Contracts are time-limited; after the expiration of their contracts, facilities must compete for renewal without any guarantee that they will be awarded another contract. Thus, insured patients must determine which facility to go to each time they seek care.

Some success has been achieved in reducing the number of hospital beds and the average length of hospital visits. These figures have traditionally been high in relation to general European practice, and in most of the countries studied, they remain above international averages (McKee 2002). Methods used to promote rationalization differ from case to case and warrant more detailed analysis. Such methods are still very much in demand.

Finally, reforms have enhanced the role of professional organizations. Many countries have introduced professional associations (of doctors, dentists, nurses) to control matters such as licensing, medical audits, and guidelines for good practice (Witter 2000). In some cases, professional associations' activities are even broader, encompassing the quality control of healthcare services and the negotiation of contracts between providers and insurance companies. In countries where the physicians' association has been granted the right to conduct medical audits, improvements in service quality have been reported.

1.1 Outline of the Research Area and Statement of the Problem

The 1990s healthcare reforms in the CEE/CIS region can be generally located within the broader context of the general dismantling of the welfare state (Deacon 1997). The Soviet model of healthcare (known as the "Semashko system") which was once dominant throughout the region, was based on principles of equity and solidarity. This centrally planned and managed system was relatively successful in providing near universal coverage to the population (although preferential treatment was often given

to certain groups, such as Communist Party elite [Bobak 1992]), and it offered free service to patients at the point of use. However, the system was also criticized for being extremely inefficient, as it placed great emphasis on input indicators such as the numbers of doctors and hospital beds, and offered a lower quality of care than systems in western countries (Preker 1993).

Post-soviet health reforms should be located within the context of fundamental reorientation towards a market-based economy. Due to resource deterioration at the early stages of the post-Soviet transition, healthcare reforms were primarily aimed towards increasing the efficiency of the sector by introducing market elements to healthcare (De la Porte and Deacon 2002). However, evidence accumulated for over a decade on the regional health reform experience reveals that the healthcare policies of the 1990s have been successful mainly in those countries that managed quick reversals of the economic collapse that occurred in the early years of the post-soviet transition and were able to maintain stable economic growth throughout the 1990s and early 2000s (Belli 2001, McKee 2002).

Some commentators have argued that successful operation of a newly designed healthcare system is possible only when the health sector is supported by a relatively strong economy (Preker 1993, Witter 2000). In other words, the reformed healthcare systems have required at least the level of economic development that their countries experienced prior to reform. In the years immediately following the economic collapse of the early 1990s, many countries in the region were not able to achieve their pre-reform economic levels of output. Some even failed to attain these levels by the early 2000s. Thus, while the healthcare sectors of these countries have achieved higher levels of efficiency, the new structural, institutional, and functional arrangements have proven incompatible with the new macro-economic environments in which they were located. Empirical evidence reveals that the lack of pre-paid public resources available for healthcare has been balanced by direct out of pocket payments (OPP) made at the point of service. By the mid 1990s, in some countries such as Georgia, Armenia, and Moldova OPP reached as much as 70–80 percent of the total health expenditure (Lewis 2000). High levels of direct payments for health services result in a problem that was not previously identified as significant in the Soviet healthcare system: lack of equity in healthcare financing and in accessing health services based on socioeconomic status of the population, which in turn lead to substantial inequities in health status across socioeconomic groups (Bobak 1992, Dixon 2002).

Equity is a nebulous concept that is difficult to measure. Technical literature differentiates between *equity in health* and *equity in healthcare.* The former relates to health outcomes or health status indicators. *Equity in health* is achieved when major health status indicators and morbidity and mortality trends are comparable across groups that differ in terms of socioeconomic, ethnic, racial, gender, geographic, or other variables. *Equity in healthcare* primarily concerns the provision (including access), financing, and

quality of health services. In terms of service delivery, equity describes a situation in which individuals with equal needs receive equal treatment. When equity is present, the amount and type of treatment that patients receive are determined only by their health needs and not by other factors such as income, ethnicity, or class (Evans 2001). In terms of healthcare financing, equity exists when the healthcare system receives income-proportionate or equal financial contributions from everyone. In other words, equity demands that those with higher income make higher contributions while those with lower income make lower contributions (Van Doorslaer 1993). Equity in quality of care is achieved when all patients are assured the same quality of care, regardless of ability to pay or to any other independent variable (Evans, 2001).

The amount of comparative research on equity in health and healthcare has increased in many regions of the world since the late 1970s and early 1980s. Researchers have developed a wide variety of methods for measuring and analyzing equity. Throughout the 1990s and early 2000s, a great deal of scholarship was devoted to describing various aspects of healthcare reform in CEE/CIS countries.[2] In recent years, an increasing number of research projects have targeted poverty and equity issues in health and healthcare in this region.[3] However, most of this research treats individual countries; there has been a lack of comparative regional research on this topic. Most studies addressing equity in health and healthcare from a European perspective have been focused on Western Europe (e.g., Wagstaff 1993; Wlodarczyk 1998; Hutton 2002).

1.2 Research Objectives

The present research is intended to increase awareness of equity in healthcare in the CEE/CIS region. Specifically, the study seeks to generate evidence on comparative performance in terms of equity in three CEE/CIS countries that operate different modes of healthcare financing systems—Armenia, Georgia, and Lithuania—in order to assess whether health reforms implemented in these countries, and different paths of economic developments during the first decade of the post-soviet transition have affected equity of their healthcare systems. Before analyzing the country case-studies, the report first provides a general overview of CEE/CIS regional trends related to equity in healthcare financing and health service provision. This discussion entails the analysis of data collected region-wide in the year 2000 or later; thus, it reflects the outcomes of the regional healthcare reforms of the 1990s. This broad overview of equity in healthcare throughout CEE/CIS region builds a foundation for the case-study analyses. Specifically, the research identified the three countries studied, with the following objectives:

(i) to perform detailed, comparative measurements of equity in healthcare financing systems, with a particular focus on out-of-pocket payments (OPP)

(ii) to analyze the healthcare reforms of the 1990s and the present the current state of the healthcare financing systems in these countries order to explore underlying causes of inequity in different types of the post-soviet healthcare financing systems and to explore policy option for enhancing equity.

Armenia, Georgia, and Lithuania were chosen as countries studied for several reasons:

(i) The primary objective of the research is the comparative analysis of equity in healthcare financing in those post-soviet countries where the healthcare reforms of the 1990s have resulted in different modes of healthcare system financing. Generally, CEE/CIS countries, in terms of their 1990s health financing reform experience, can be grouped into three categories: a) countries that have switched from a centrally financed healthcare model to a social health insurance model and also implemented reforms to reduce inefficiency within the healthcare sector; b) countries where social health insurance reforms were attempted, but have been unsuccessful, however where some increases in efficiency were achieved; c) countries that have implemented health financing reforms primarily aimed at increasing the efficiency of the system, including decentralization in health financing and changes in provider reimbursement mechanisms, but have retained their previous financing system based on general taxation without attempting to switch to insurance principles. The three selected case-studies for this report represent the full spectrum of the 1990s healthcare financing reform experience. Lithuania belongs to the group of countries that have switched to social health insurance. In Georgia, social health insurance reforms were unsuccessfully attempted and efforts were made to increase the health sector's efficiency. Armenia has implemented an "incomplete reform package" primarily aimed at enhancing the system's efficiency. Thus, the research comparatively measures and analyzes equity in three different types of post-soviet healthcare reform. In addition to these three groups, there is also a "health reform resilient" group of countries where healthcare reforms were not implemented during the 1990s. These countries still utilized a Soviet-style healthcare system into the early 2000s, with perhaps some insignificant cosmetic changes. This group includes Azerbaijan, Belarus, Moldova, and Ukraine. Unfortunately, due to the lack of available technical and statistical data for these countries it was not possible to include this group in the comparative analysis, and consequently it was not possible for this research to comparatively analyze equity between the reformed and non-reformed healthcare systems of the CEE/CIS region.

(ii) Data availability in CEE/CIS countries was also a major factor in determining the selection of Armenia, Georgia, and Lithuania from the three reference groups.

In order to measure equity in healthcare financing, one requires specific data, which must be collected by reliable sources. This should include a set of specific variables, such as household income and expenditures, healthcare expenditure, utilization of different types of health services, composition, and so on. Access to such data was quite restricted in most CEE/CIS countries; Armenia, Georgia, and Lithuania were better suited in this regard.

(iii) The selected countries share many common features. All are newly independent nations that emerged after the dissolution of the Soviet Union in 1991. During the pre-reform period, all three nations operated a healthcare system under the Soviet model. Health services were funded through central budget allocations and provided exclusively by state-owned facilities. Medical personnel were salaried state employees.

(iv) Before achieving independence, these countries had comparable socioeconomic, political, and healthcare variables (including equity). All three countries are also comparable in geographic size and population.

The equity in healthcare financing in each case-study country has been statistically measured twice, using data collected in the early/mid-1990s (before reform) and early 2000s (after reform). Thus, the measurements provide information on the pre-reform and post-reform status of equity in healthcare financing in Armenia, Georgia, and Lithuania, and allow not only for comparison across the countries, but also cross-time comparison within each country.

The comparative health systems analysis that follows the statistical measurements aims to determine how health reform policies and regulations implemented throughout the 1990s, as well as different levels of economic development, have diversified healthcare financing systems that were identical before 1990, and how this diversification has affected equity.

1.3 Methods and Data

Before detailed case-study analysis was undertaken, statistical analysis was used to identify general CEE/CIS regional trends in equity in healthcare financing and service delivery by using statistical datasets provided by the World Health Organization. Descriptive statistics, correlation, and regression analysis methods were used for identifying regional trends in the availability of healthcare resources, the availability of infrastructure, and the access to and utilization of health services. The major data source employed in this analysis was the Health Responsiveness Survey conducted by WHO in 2000. Fifteen CEE/CIS countries were included in this initial analysis. The WHO provided data on the understanding that the analysis would not identify individual countries. Therefore,

in statistical outputs where WHO Health Responsiveness Survey data were used, the country names are coded.

More detailed and specific statistical analysis was pursued to measure equity in healthcare financing in the three countries studied. As mentioned previously, this analysis was performed twice for each country (based on data from the mid-1990s and early 2000s) to facilitate pre-reform and post-reform comparisons. It is generally accepted that equity in the financing of healthcare exists when the system of finance is progressive (Pereira 2000). Thus, measuring equity in healthcare financing is equivalent to measuring the progressivity of a healthcare finance system (Wagstaff 1998). In an equitable system, healthcare payments as a proportion of income rise along with income; the reverse means a system is inequitable (Hsiao 2000). In a proportional system, healthcare payments account for the same proportion of income for everyone, irrespective of income (Wagstaff 1998).

The research employed two alternative but complementary approaches to measuring equity in healthcare financing in the selected countries: it measured the progressivity of out-of-pocket payments for healthcare, as well as the impact of OPP on household poverty levels. Several specific methods of measurements were used for each of the above two approaches. Each method provides information on equity in healthcare financing from a particular perspective. When analyzing the data, a common equivalence scale was used for converting households' real income into equivalized income. This method of equivalization was developed by Aronson (1994) and was used by Van Doorslaer et al. (2000). Table 1 provides a summary of the statistical methods used to analyze equity in healthcare finance.

Table 1

Methods of Statistical Analysis Used in the Research

Methods of measuring equity in healthcare financing						
Methods of measuring progressivity of OPP			Methods of assessing the impact of OPP on poverty			
			Methods of measuring impoverishing medical expenditures		Methods of measuring catastrophic medical expenditures	
Proportion	**Share**	**Kakwani index**	**Incidence**	**Depth**	**Incidence**	**Gap**
Calculating healthcare payments as a proportion of total income by income group.	Comparing the share of total income received by each income decile with the share that the decile contributes to the population's total healthcare payments.	Plotting the cumulative proportion of pre-tax income against the cumulative payments for health services while grouping the population into income categories.	Defining the proportion of households in the total population whose income after paying for healthcare goes below a pre-established threshold.	Estimating the level at which a household's income falls below the pre-established threshold at which medical expenditure becomes impoverishing.	Estimating the proportion of households in the total population whose health expenditures exceed a pre-established percentage of income.	The catastrophic payment gap identifies the amount which health expenditures exceed a pre-established percentage of income.

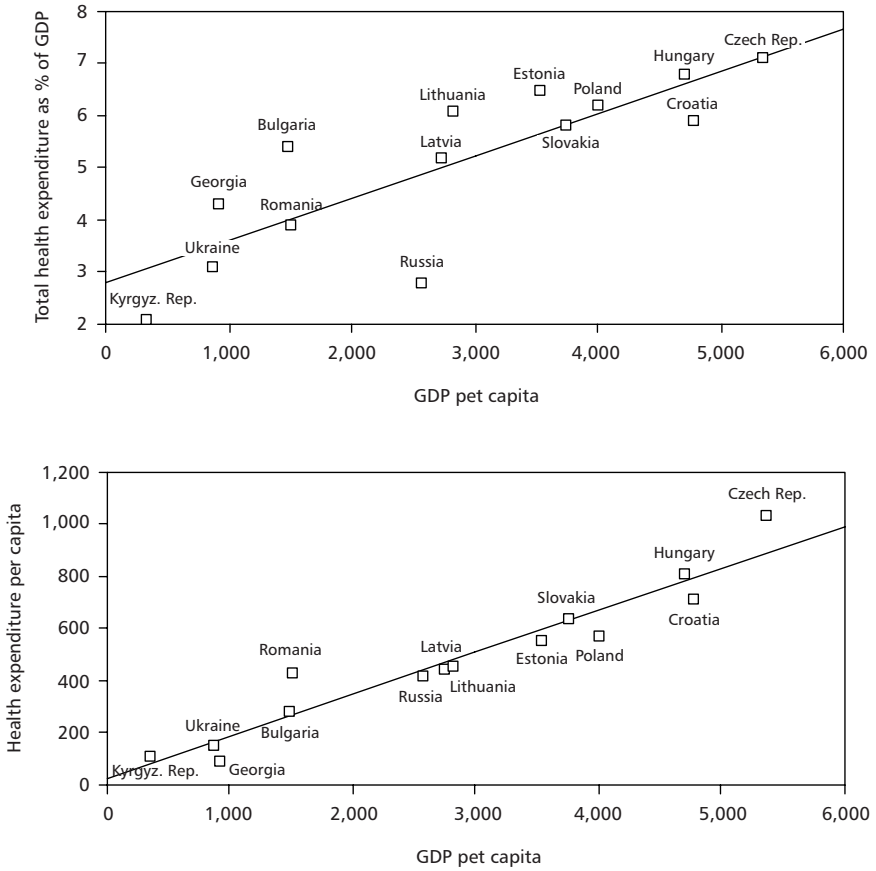
2. REGIONAL TRENDS IN HEALTHCARE EQUITY IN CEE/CIS

The purpose of the analysis presented in this chapter is to identify regional patterns and characteristics of equity in health and healthcare throughout the region. As mentioned earlier, the analysis is based on cumulative statistical data collected during the "post-reform" period (i.e. in 2000 or later) in 15 CEE/CIS countries, findings of which are focused on the following areas: a) equity in healthcare resources and infrastructure, and b) equity in the access and utilization of healthcare services. Most of the following analysis was done in a comparative context at the country level; however, where appropriate, the analysis employed cumulative data to determine regional trends.

2.1 Healthcare Resources and Infrastructure

CEE/CIS countries differ significantly in terms of the amount they can afford to invest in healthcare, which resources they invest, and what they get back from their investments. These differences are explored by analyzing the regional data. It is expected that richer countries spend more on healthcare than poorer countries do, both in terms of total health expenditure as a percentage of GDP and actual per-capita spending. Thus, a cross-country inequity, in terms of availability of healthcare resources, can be observed. In order to further explore this observation, two regression analyses were performed. In both analyses GDP per capita was an independent variable. Total health expenditure as percent of GDP was a dependent variable in the first, and total health expenditure per capita per year in absolute numbers was a dependent variable in the second. The findings in Figure 1 show that total health expenditure per capita per year (in USD) in the sample group of countries varies from 95 in Georgia to 1,031 in the Czech Republic. Total health expenditure as a percentage of GDP varies from 2.1 in Kyrgyz Republic to 7.1 in the Czech Republic.

Figure 1
Total Health Expenditure and GDP in CEE/CIS



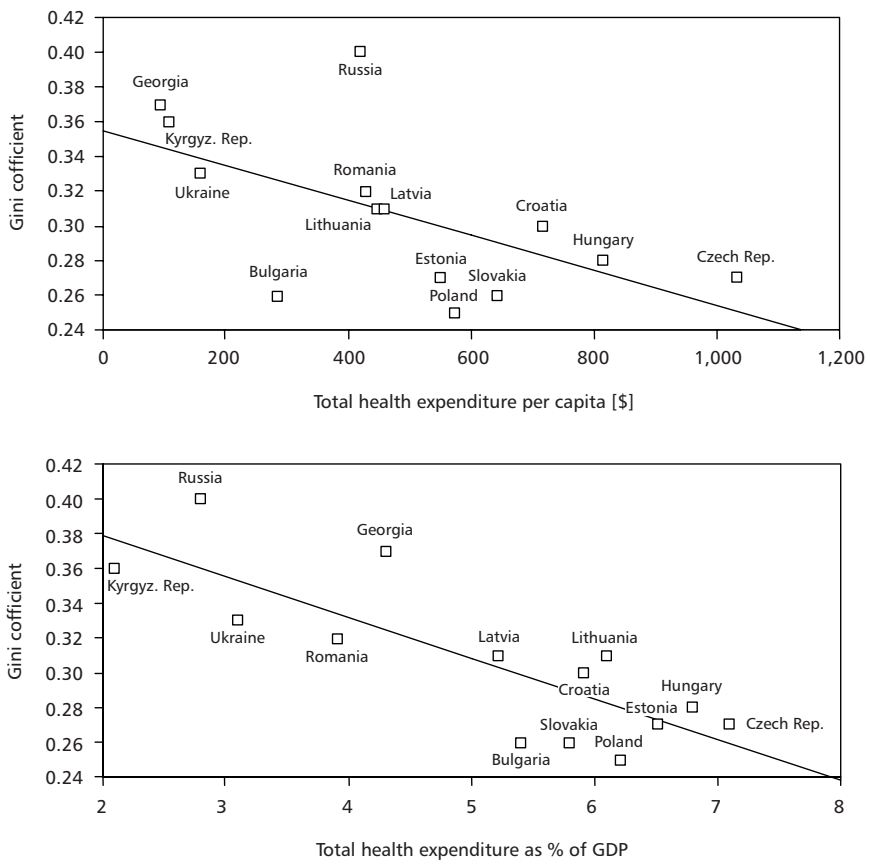
Source: WHO Health for All Database (2000 or closest available).

Thus the finding indicates that the total financial resources spent on healthcare varies within the region.

However, the amount of healthcare expenditure is not based only on availability of resources, but on other factors as well. One such factor is the distribution of wealth. In order to explore this issue, two analyses were performed; one investigated the relationship between inequality and total health expenditure as a percent of GDP, and the other investigated total health expenditure per capita per year. Inequality was measured using the Gini coefficient, an indicator of income inequality that reflects the distribution of income throughout a population. If income is distributed equally across the population, the coefficient is 0; if a few individuals hold the majority of the wealth, the coefficient

is closer to 1. The analysis showed a negative association between health expenditure and the Gini coefficient (see Figure 2). This may suggest that more egalitarian societies tend to spend more of their resources on healthcare, both in terms of real numbers and as a percentage of GDP. It must be emphasized that while this correlation is observed in CEE/CIS region, it does not necessarily imply that there is a causal relationship between the two variables. Those economies with lower Gini coefficients may not necessarily make higher investments in health, and vice versa. This argument can be supported with examples from OECD countries. For instance, the United States spends significantly more resources on healthcare, both per capita and as a percentage of GDP, than the UK, which has a more equal distribution of income and consequently a much lower Gini coefficient than the US.

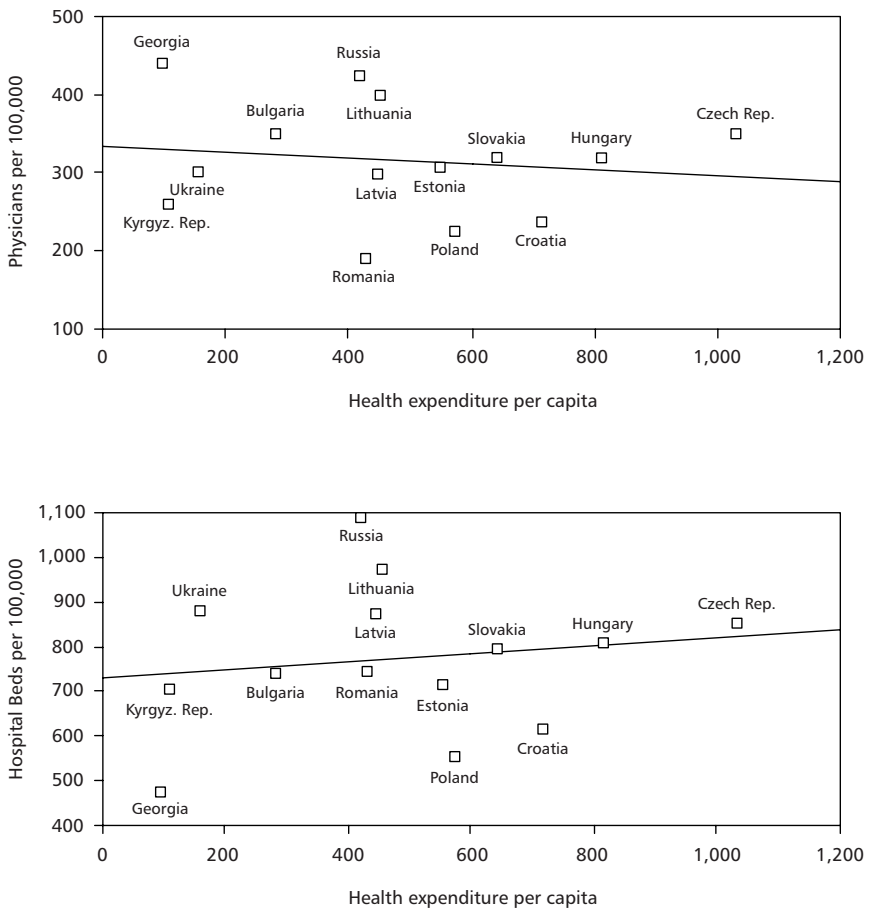
Figure 2
Total Health Expenditure and Gini Coefficient in CEE/CIS



Source: WHO Health for All Database (2000 or closest available).

An assumption can be made that higher expenditure on healthcare does not necessarily imply that proportionate levels of investment are targeted towards the development of healthcare infrastructure and human resources. In order to test this assumption, health-related human resources and infrastructure were analyzed in the context of the amount of funding spent on healthcare per country. As the finding revealed—a country that spends less than 200 USD per capita per year on healthcare may have as many doctors and almost as many hospital beds per 100,000 people as a country spending over 1,000 USD per capita per year (Figure 3).

Figure 3
Health Human Resources and Infrastructure and Total Health Expenditure in CEE/CIS [USD]



Source: WHO Health for All Database (2000 or closest available).

The above finding indicates that different countries, regardless of their income levels and the amount spent on the healthcare sector, displayed different priorities in terms of resource allocation for the healthcare sector. Higher levels of human resources and infrastructure increase the fixed costs of care at the aggregate national level. This phenomenon, coupled with the low levels of resource availability in certain countries, can ultimately lead to a deficient budget that, in turn, can lead to a high degree of direct contributions to healthcare financing by patients. Such a situation may lead to inequity in healthcare financing due to higher levels of direct out-of-pocket payments for health services. The discussion below explores these causalities.

When one considers the nature of healthcare financing policies in CEE/CIS countries that operate their health systems based on either social insurance or general taxation (or a mixture of the two mechanisms), one may assume that a lower level of total healthcare spending may be explained by a lack of public funds for the healthcare budget. The research tested the relationship between public expenditure on health and total health expenditure region-wide, based on the data from the 15 countries and discovered a correlation between them (Pearson Correlation 0.808, $P < 0.05$). The analyses showed that over 65 percent of variation in total health expenditure is "explained" by the level of public expenditure on health (R square .653).

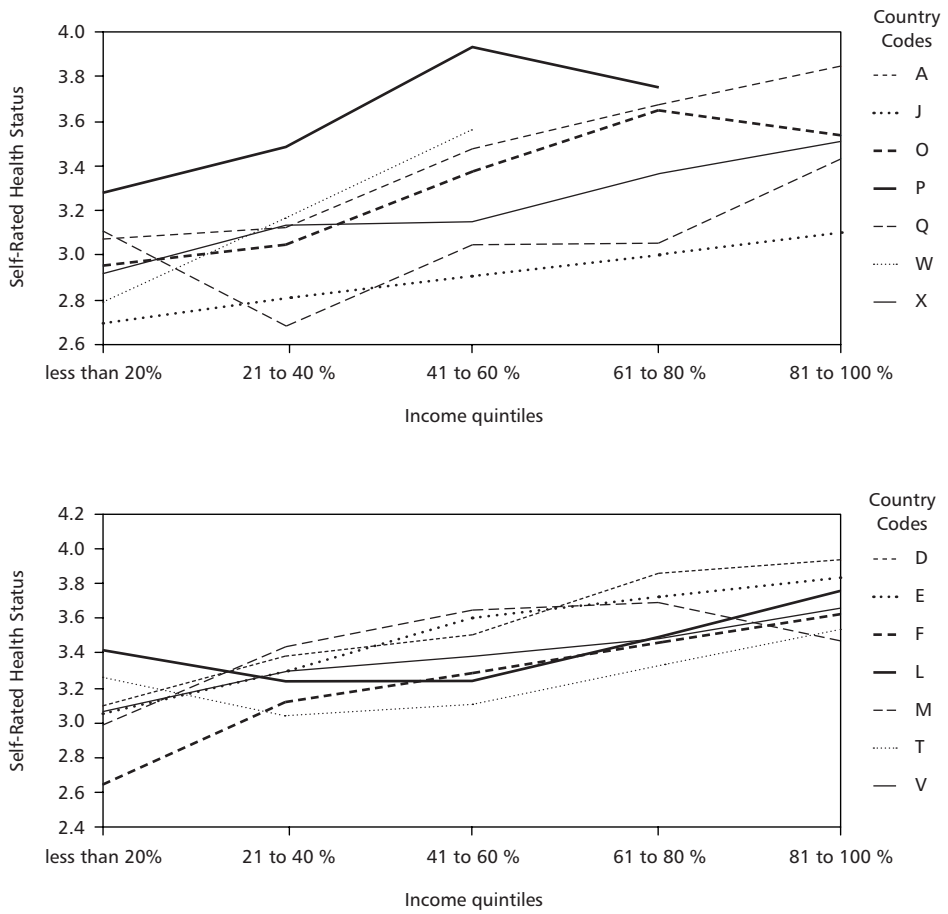
This finding may help to explain financial inequities in countries with lower public expenditure on health. Since the above analysis indicated a positive linear relationship between public expenditure on health and total health expenditure, it may be concluded that in countries with lower public expenditure on health, a higher proportion of total health expenditure is covered by private payments. There is empirical evidence to indicate that there is very little or no private insurance in most CEE/CIS countries, especially in those with lower public (and total) expenditure on health (Belli 2001). This means that most private expenditures take the form of direct out-of-pocket payments given by patients to service providers at the point of service. As patients then carry a financial burden, it is possible to argue that the lower the amount of resources the state allocates to healthcare, the higher patients' out-of-pocket expenses will be. High OPP may limit access to health services for poorer patients who cannot afford such costs. This finding leads one to evaluate equity in the access and utilization of health services. This will be further explored in the following section.

2.2 Access to Healthcare and Utilization of Services

It is important to determine how the financial burden incurred by direct payments is distributed between the poor and better-off. Unfortunately, the country-based datasets used for this regional analysis did not include information on direct out-of-pocket expenditure for all countries. Thus, it was not possible to answer this question directly

by identifying regional OPP trends. However, by analyzing other information available in the datasets, we can conclude that direct payments have a greater impact on the poor than on the better-off. Figure 2 above indicated a negative correlation between the Gini coefficient and total health expenditure; in other words, countries with greater income inequality tend to spend less on healthcare. At the same time, as was argued above, countries with lower total expenditure on health have proportionally lower levels of public spending on health and proportionally higher levels of private spending. Additionally, as Figure 4 below indicates, poverty increases the risk of illness in both low-income and high-income countries:

Figure 4
Poverty and Health Status in CEE/CIS

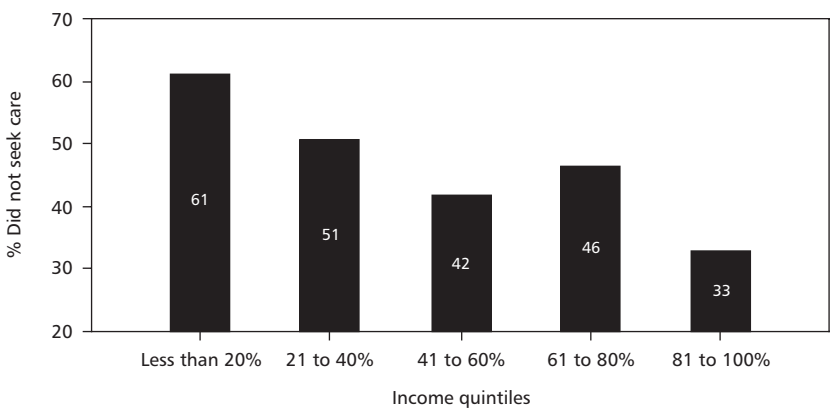


Source: WHO Health Responsiveness Survey Data (2000).[4]

As the above graphs indicate, lower income brackets see their health status as poorer than higher income brackets. Therefore, by summarizing the above-listed findings it may be concluded that the higher the proportion of poor people in a society, the higher the need for healthcare services will be. If direct payments must be made in order to access care, the bulk of the direct financial burden is incurred by those with lower incomes. This analysis suggests that lower income people—as long as they access care when they need it—contribute a higher proportion of direct payments than the higher income people do. Alternatively, if the lower income groups cannot afford to pay out of pocket, one may assume that their inability to make direct payments limits their access to health services.

The latter argument has been validated by statistical analysis of the regional data, which show disparities in health-seeking behavior by income quintile. Figure 5 shows the percentage of people in the CEE/CIS region who were ill but did not seek care because they could not afford it.

Figure 5
Care-seeking Habits by Income in CEE/CIS



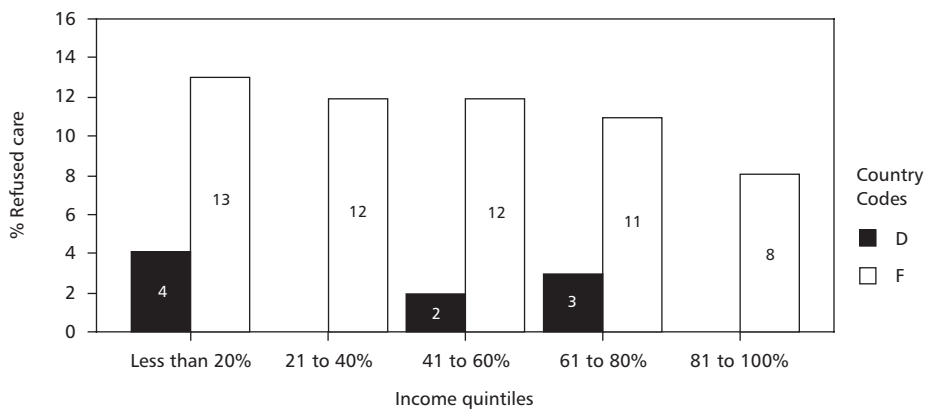
Source: WHO Health Responsiveness Survey Data (2000).

As the above graph shows, people in the bottom 20 percent of income distribution were almost twice as likely not to seek care (because they could not afford it) than those in the top 20 percent of income distribution. This finding is an important indicator of the regional inequity in care-seeking behavior between various socioeconomic groups.

Furthermore, the analysis reveals an even more serious type of inequity in accessing health services between different socioeconomic groups: even when the lower income people do seek care, they are more likely to be refused care at clinical facility on the

basis that they cannot afford to pay, despite the fact that often they are entitled to free healthcare services, and the payments requested are often informal payments. Figure 6 represents only two countries from the sample, both of which have GDP per capita and total expenditure on health far above the mean and median values of the sample and region. The graph indicates that even in these relatively richer countries, which are also able to allocate relatively large public resources to healthcare, between 4 percent and 13 percent of people in the lowest income quintile and up to 8 percent in the highest income quintile are refused care because they cannot afford to pay informal (or formal) OPP (Figure 6).

Figure 6
Percent Refused Care by Income in CEE/CIS

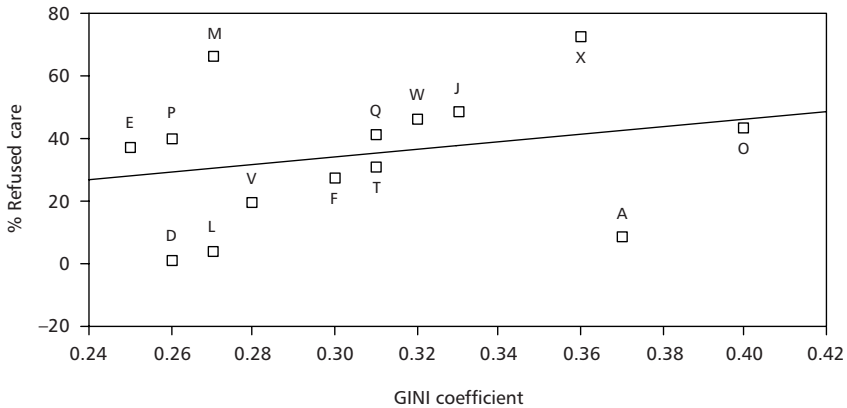


Source: WHO Health Responsiveness Survey Data (2000).

This is a serious concern, as universal entitlement to health services has been a traditional attribute of CEE/CIS healthcare systems and most states presently offer a constitutional guarantee of this right to their citizens. Yet, the reality shows that this right of the citizens can sometimes be violated.

It can also be assumed that in lower-income countries, that allocate lower levels of public expenditure for health, the proportion of people who are refused care on the basis that they can not afford to pay OPP is even higher that in those two countries represented on the above graph. This assumption is explored in the analysis below. Due to limitations in the availability of data, research is not able to offer direct statistical confirmation of the assumption, however indirectly such an explanation can be found: as Figure 7 below indicates, a positive (though not very strong) correlation exists between the Gini coefficient and the likelihood of being refused care due to inability to pay.

Figure 7
Percentage of Patients Refused Care by Gini Coefficient in CEE/CIS



Source: WHO Health Responsiveness Survey Data (2000).

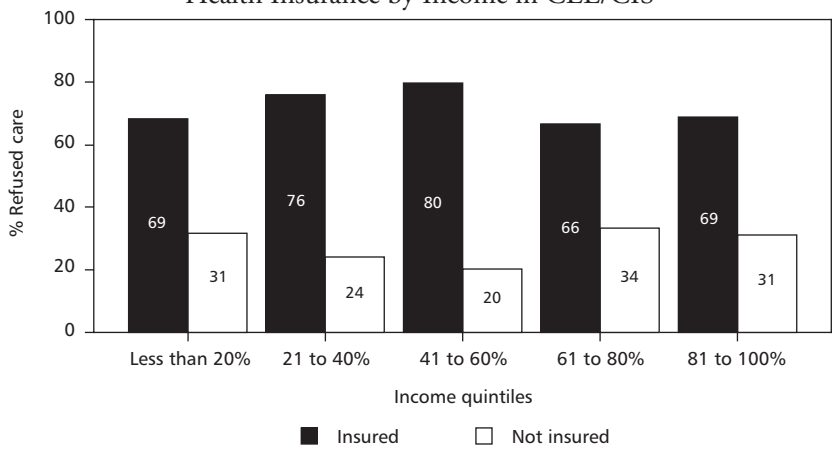
Thus in countries with higher income inequality, the likelihood of being refused care due to inability to cover out-of-pocket payments (formal or informal) is higher. At the same time, a negative correlation was found between the Gini Coefficient and total health expenditure (Figure 2), which means that the countries with higher income inequality tend to spend less on healthcare. A positive correlation was also found between total expenditure on health and GDP, meaning that countries that spend less on health tend to be poorer. Thus, it can be concluded that in poorer countries, higher proportion of low-income people are refused care than in richer countries.

Another important finding of the analysis is that one of the factors that may determine the ease of access to health services is insurance. As mentioned above, most countries in the region fund healthcare through either social insurance or general taxation and promise universal entitlement to health services regardless of individuals' socioeconomic status, ethnicity, age, etc. In other words, there is very low inequity, if any, in terms of formal entitlement to health insurance for people from different socioeconomic groups. Statistical analysis of the data proves just that. Figure 8 shows that there is no great variation in terms of possessing social health insurance, or other type of universal entitlement to universal coverage based on income, meaning that people across all socioeconomic groups are more or less equally insured.

However, as Figure 8 indicates, a relatively high proportion of the region's population reports being uninsured. This finding is attributable to the fact that in those countries where social health insurance has been introduced, and the majority of the population

is thus insured, survey subjects provided negative responses when asked whether they had insurance. This might have been due to an error in data collection, or it might have been due to the fact that in certain countries, citizens are not adequately informed about their entitlements. In any case, this finding does not affect the conclusion that there is equity in insurance provision between various income groups of the population.

Figure 8
Health Insurance by Income in CEE/CIS

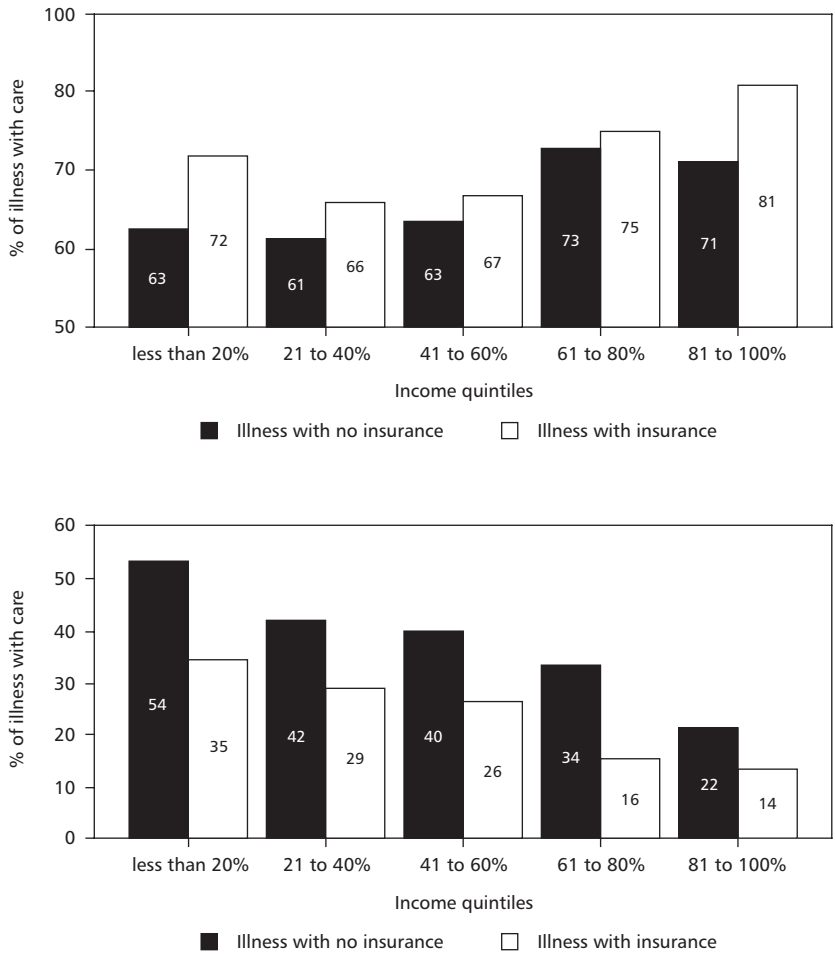


Source: WHO Health Responsiveness Survey Data (2000).

However, income is relevant to the manner in which people from various socio-economic groups are able to use their insurance entitlements. Here, the analysis reveals significant inequity. Poorer individuals with insurance are less likely to access care than better-off individuals. Figure 9 shows the disparity between the service utilization by low-income and high-income groups by insurance status.

As Figure 9 indicates, while over 80 percent of those insured in the top 20 percent of income distribution are able to use healthcare services when needed, only between 66 percent and 75 percent of the rest of the population with the same insurance status can do so. Meanwhile, 35 percent of the insured poor cannot access care, compared to only 14 percent of the insured better-off—another manifestation of inequity in accessing health services.

Figure 9
Access to Care by Income and Insurance in CEE/CIS

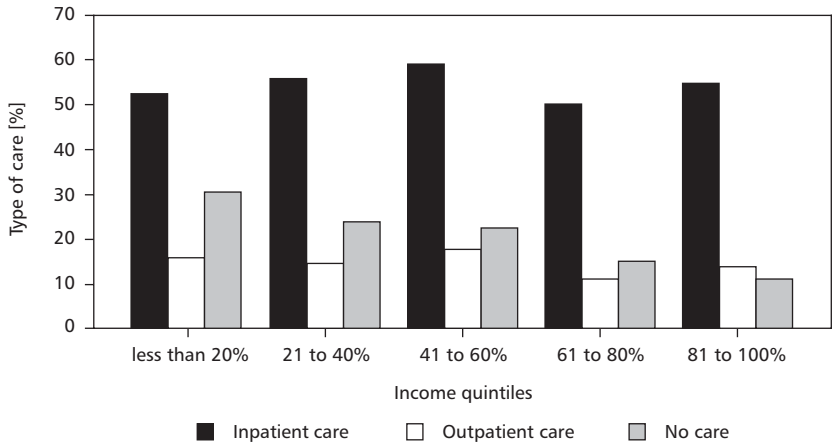


Source: WHO Health Responsiveness Survey Data (2000).

It should be mentioned that there is no difference between the low-income and high-income population in terms of their utilization of different types of care (see Figure 10).

As Figure 10 indicates, almost equal proportions of individuals from each income quintile use inpatient and outpatient services, with higher proportional use of inpatient care by all.

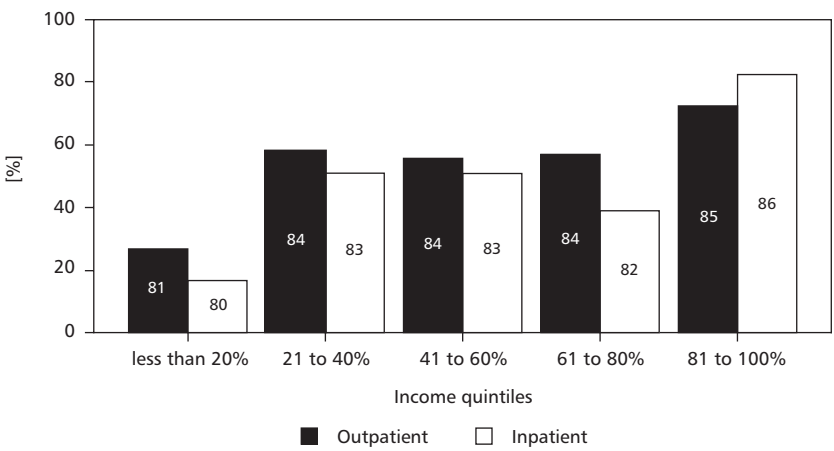
Figure 10
Utilization of Different Types of Care by Income in CEE/CIS



Source: WHO Health Responsiveness Survey Data (2000).

The analysis also reveals that there is a difference (although not large) among income quintiles in terms of accessing health services as soon as care is needed. In the highest income quintile, 85 percent and 86 percent of those who make it to a care provider can access inpatient and outpatient care, respectively, as soon as they need it. These figures are 81 percent and 80 percent in the lowest quintile and 84 percent and 82 percent in the rest of the population (Figure 11).

Figure 11
Access to Care as Soon as Needed by Income in CEE/CIS



Source: WHO Health Responsiveness Survey Data (2000).

The findings revealed by the above graph are important, because they further emphasize the greater difficulty in accessing healthcare services experienced by lower income groups, which ultimately contributes to inequity in healthcare based on the socioeconomic conditions of the population.

2.3 Summary

The above analyses suggest that inequities in healthcare resources and infrastructure, as well as in accessing and utilizing health services exist across the CEE/CIS region. Inequities are apparent at national and individual levels. At the national level, inequities can be found in terms of available resources for healthcare. Countries with higher GDP generally allocate more resources for healthcare, as do countries enjoying more equal distribution of resources throughout their population (as represented by the Gini coefficient). At the individual level, inequities are determined by distributional factors of available resources, limited financial and human resources, limited infrastructure, as well as specific policies and regulations. One common characteristic of less equitable health financing systems in CEE/CIS is the high prevalence of direct out-of-pocket payments for health services. OPP can be considered one of the major causes leading to inequity not only in healthcare but also health outcomes, as they significantly impact individuals' ability to afford and access health services and impact the quality of provided care.

3. MEASURING DIFFERENCES IN EQUITY IN OUT-OF-POCKET HEALTHCARE FINANCING IN ARMENIA, GEORGIA, AND LITHUANIA

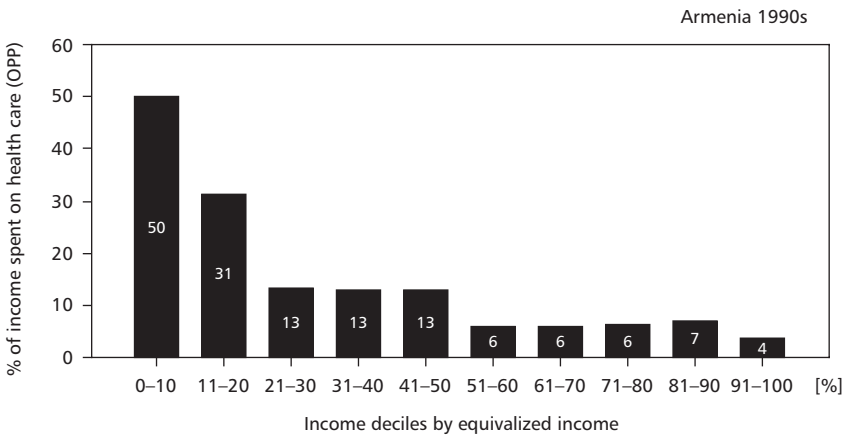
3.1 Introduction

After reviewing the general trends of inequity in health and healthcare throughout the region, this chapter provides comparative measurements of out-of-pocket payments (OPP) for health services in Armenia, Georgia, and Lithuania and examines how OPP affect equity in healthcare. The primary reason for focusing on OPP was the fact that, as it is a sudden expenditure and therefore is not budgeted for, OPP has a direct impact on poverty. This is not the case with other types of healthcare financing such as general taxation, social insurance, and private insurance. OPP was also selected because the inclusion of taxation and social insurance might render the analysis and findings arbitrary. As most taxes and even social insurance contributions (unless they are specifically earmarked as social *health* insurance payments) are not allocated specifically to healthcare, it is difficult to determine the proportion of non-earmarked tax payments—if general tax payments and social insurance contributions are included—that actually go towards the financing of healthcare when calculating the index of progressivity. Additionally, some parts of social insurance contributions—even if they are earmarked for health—are used to finance not healthcare services but other costs associated with the healthcare system. As for private health insurance, it represents such a negligible fraction of total healthcare spending in the countries studied that including or excluding it from the analysis would not have a significant impact on the findings.

3.2 Measuring Equity of Out-of-Pocket Payments

In calculating the proportion of total income spent on healthcare, households were grouped into income deciles. Then, the average total income for each decile was computed and the average total out-of-pocket healthcare spending by each decile was calculated. Finally, the percentage of the total income spent on healthcare by each decile was determined. The results are shown in Figure 12 (by country and by year).

Figure 12.a
Percent of Income Spent on Health by Income Decile in Armenia
(1990s and 2000s)



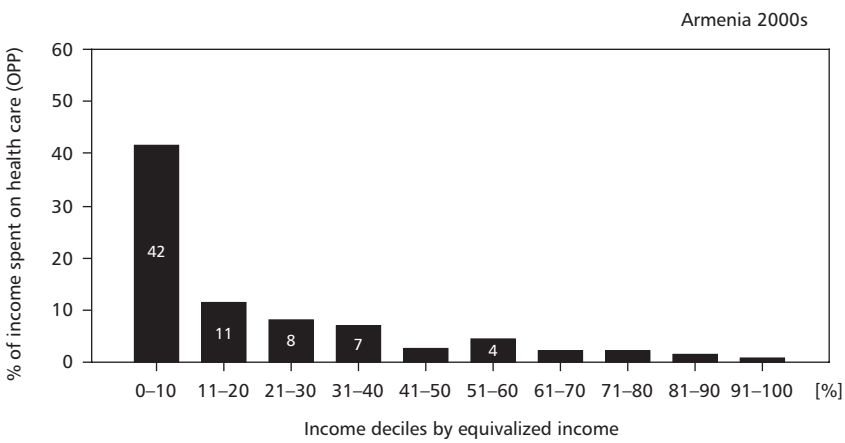
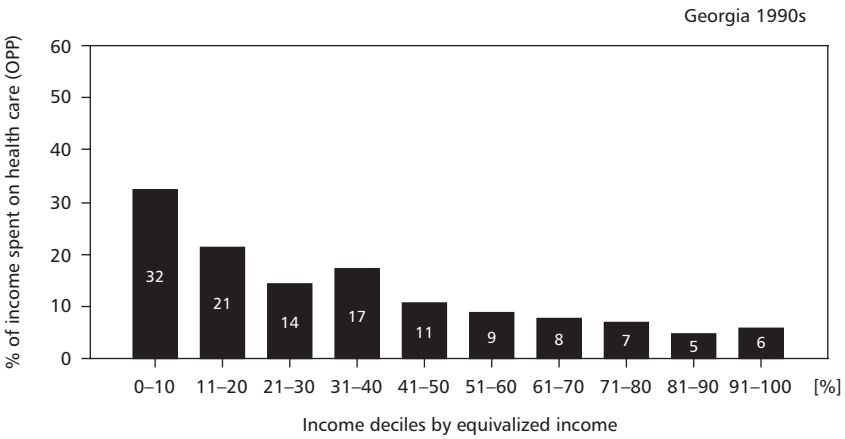


Figure 12.b
Percent of Income Spent on Health by Income Decile in Georgia
(1990s and 2000s)



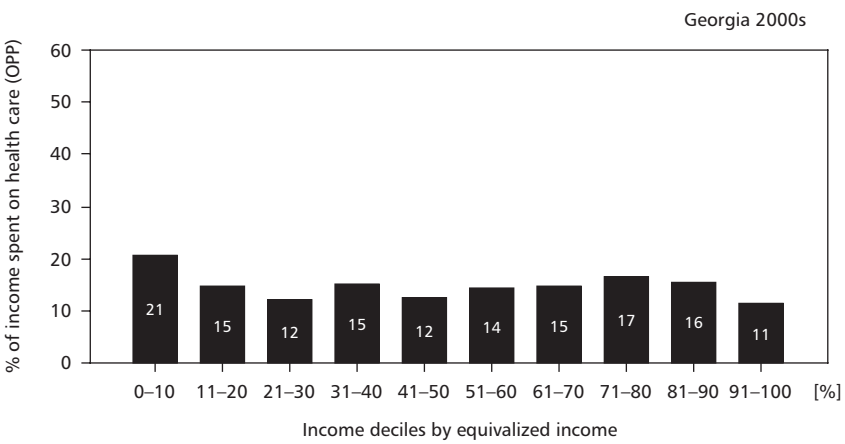
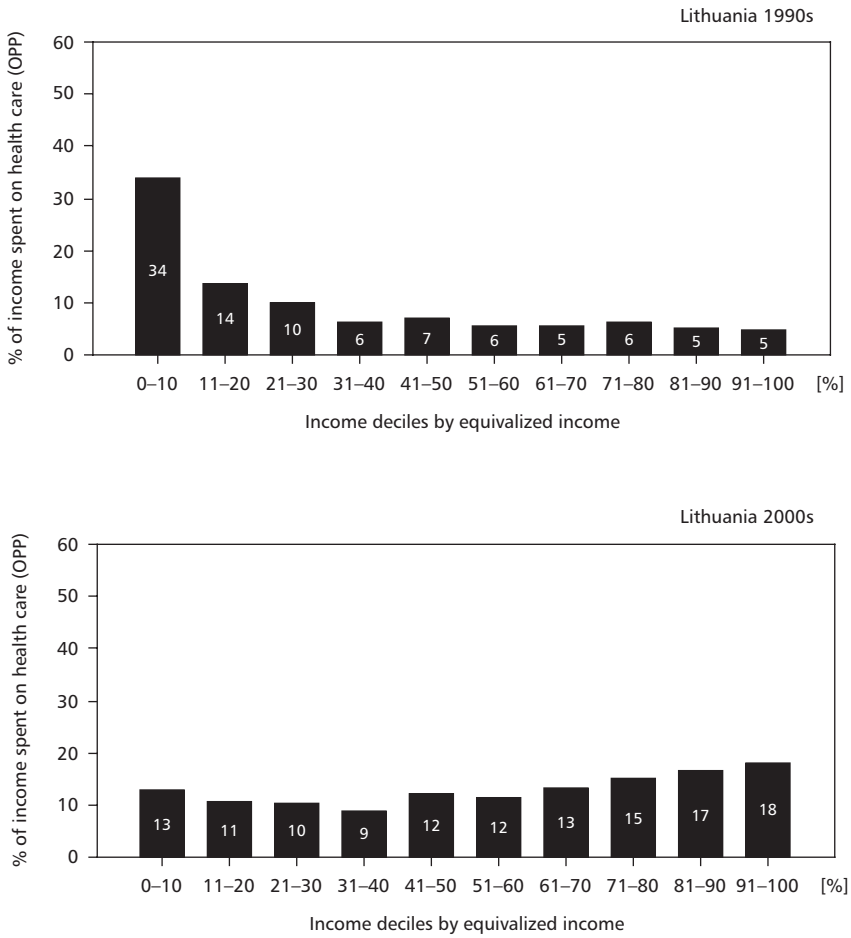


Figure 12.c
Percent of Income Spent on Health by Income Decile in Lithuania (1990s and 2000s)



Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

As shown in Figure 12, Lithuania in the 2000s has a more equitable OPP financing system than others. The least equitable OPP system among the three countries is in Armenia, where, in the 1990s, the lowest three income deciles spent an average of 31.3 percent of their income on health, compared to the average of 5.6 percent spent by the highest three deciles. These values changed to 19.3 percent and 2 percent, respectively,

in the 2000s. Thus, if in the 1990s the lowest three income deciles in this country spent 5.5 times more of their income on healthcare than the highest three income deciles, in 2001 this ratio increased to 9.65, indicating that the OPP financing system became even more inequitable. It must be pointed out, however, that in Armenia, OPP payments as a percentage of income dropped between the 1990s and 2000s by a greater margin for the poorest group than for the richest group (from 31.3 percent to 19.3 percent vs. from 5.6 percent to 2 percent). Nevertheless the equity of OPP financing was not improved. A summary of findings for all countries for both years is provided in Table 2.

Table 2
Proportion of Income Spent on Healthcare
in Armenia, Georgia, and Lithuania (1990s and 2000s)

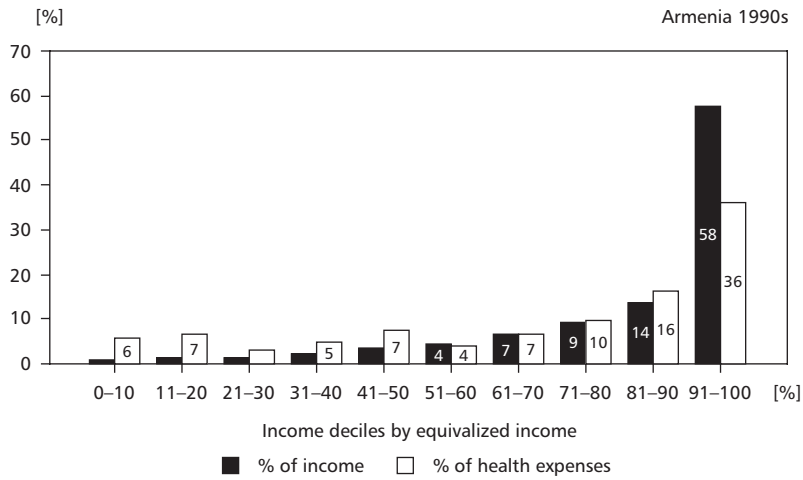
Country and Year		Average % of Total Household Income Spent on Health (OPP) by the Lowest 3 Income Deciles	Average % of Total Household Income Spent on Health (OPP) by the Highest 3 Income Deciles	Ratio
Armenia	1990s	31.3	5.6	5.58
	2000s	19.3	2.0	9.65
Georgia	1990s	22.3	6.0	3.71
	2000s	19.3	5.6	3.40
Lithuania	1990s	16.0	14.4	1.10
	2000s	11.3	16.6	(1.46)

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

Table 2 confirms the previous findings: equity of OPP financing between the pre-reform and post-reform periods has worsened in Armenia, has insignificantly improved in Georgia (however remaining regressive), and has changed from less regressive to mixed in Lithuania. As mentioned above, the regressivity of a financing system is a direct indication of financial inequity. As these measurements concern out-of-pocket payments—with sometimes large sums paid directly at point of service, this type of regressivity may have a direct impact on household poverty levels.

Another method for measuring progressivity involves taking each decile's total income as a percentage of the entire population's total income and comparing it with each decile's total OPP as a percentage of the entire population's OPP. To perform this analysis, the total income of the entire population was calculated, followed by the total income for each decile. Then, total out-of-pocket healthcare spending was calculated for the entire population and for each income decile. The results are shown in Figure 13.

Figure 13.a
Share of Total Income and Share of Total OPP per Decile in Armenia
(1990s and 2000s)



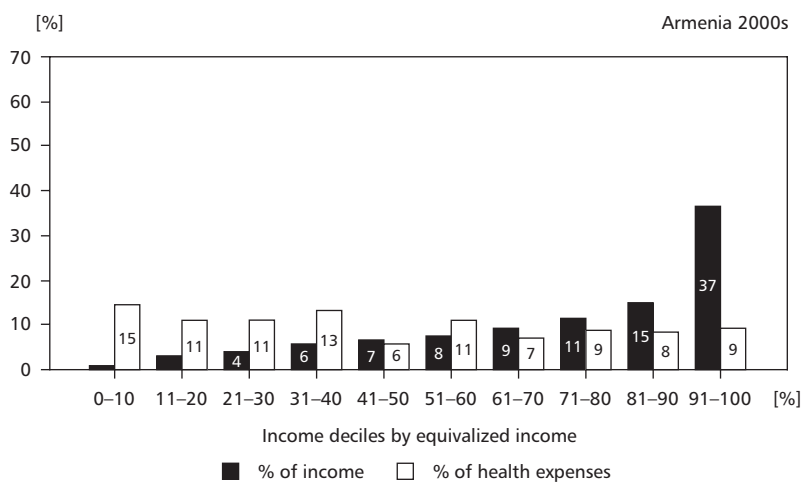
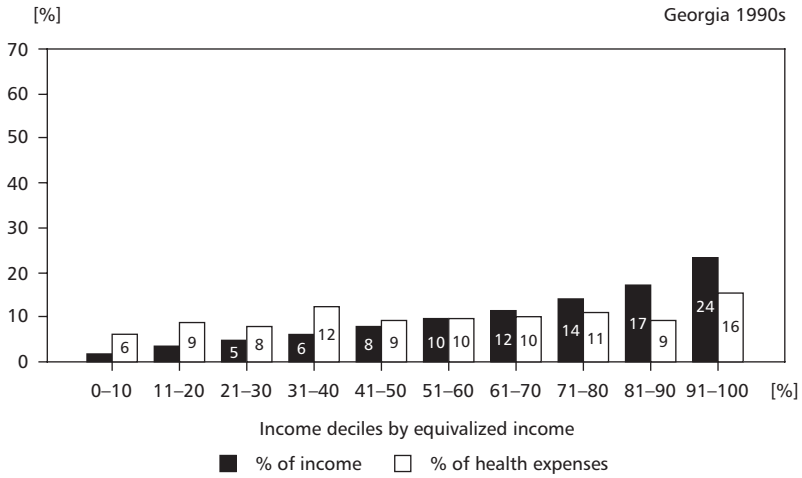


Figure 13.b
Share of Total Income and Share of Total OPP per Decile in Georgia
(1990s and 2000s)



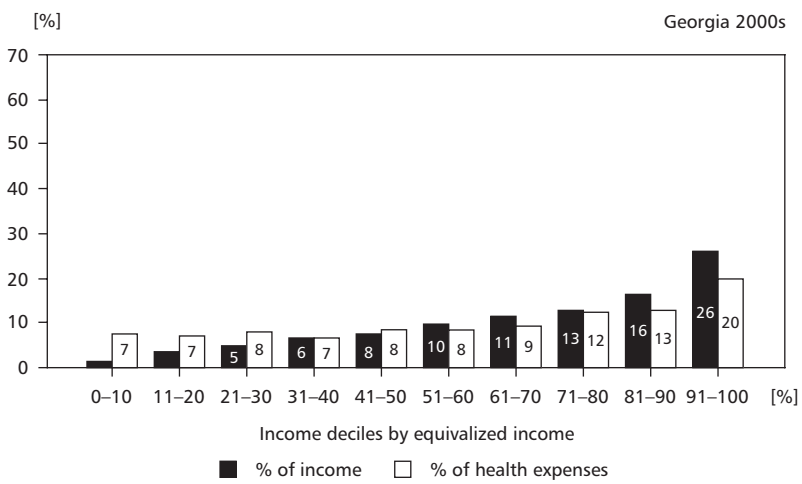
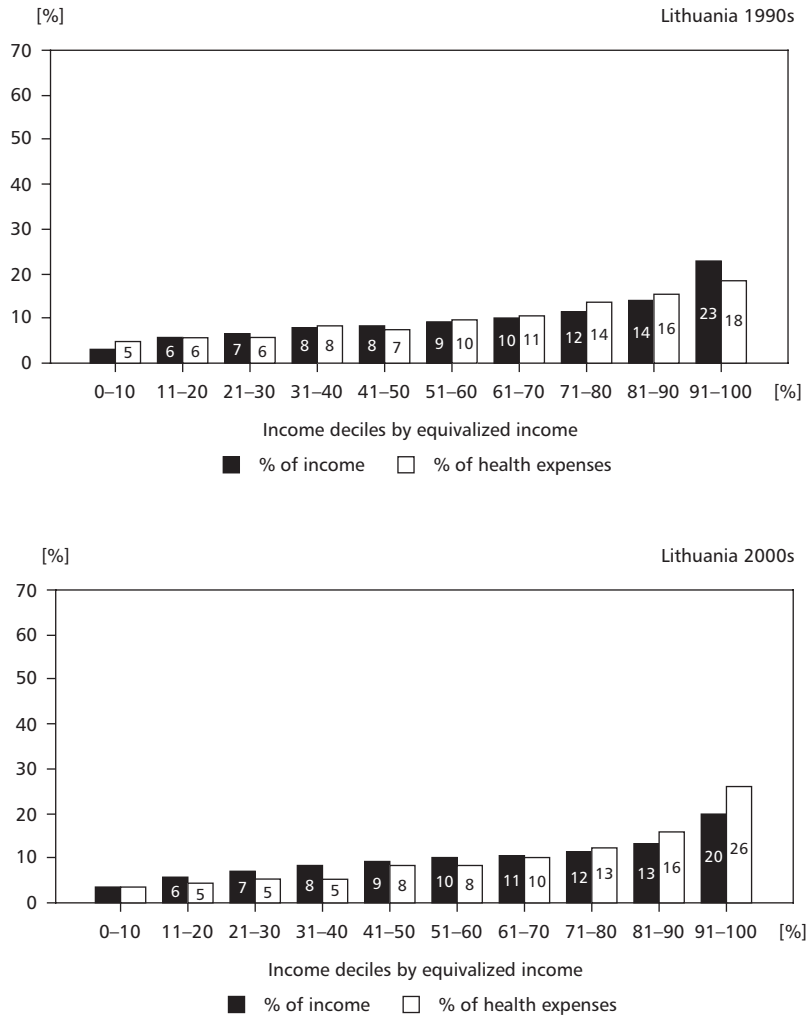


Figure 13.c
Share of Total Income and Share of Total OPP per Decile in Lithuania (1990s and 2000s)



Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

The above analysis supports the previous findings: in all cases except Lithuania in the 2000s, lower income households' contribution to the total population's out-of-pocket expenditure was higher than their share of the total population's income, thus the

OPP system was unequal. However it must be emphasized that this finding regarding Lithuania can be attributed to the fact that lower income households sought healthcare less frequently than higher income households, therefore their OPP expenditure was lower. However, this was the case not only in Lithuania, but in other countries as well. What makes Lithuania different is that high-income groups could afford to pay additional OPP in order to receive better quality care in a private setting, or for services not covered by public funding (private rooms, better food, etc.). This increases the high-income group's out-of-pocket expenditure and thus contributes to shaping the overall OPP profile as mixed.

Another finding of this analysis is unequal distribution of income in the countries studied. For example, in Georgia in the 2000s, the lowest 50 percent of the population received only 23 percent of the total income of the entire population, while the top 10 percent received 26 percent of this amount. At the same time, for the households in the lowest income decile (Georgia 2000s) the ratio of OPP vs. income was 7 to 1 (these households contributed 7 percent to the entire population's total OPP payments, while received only 1 percent of the entire population's total income), while for the highest income deciles the share of their income exceeded 1.3 times the share of their OPP contributions (the ratio was 26 to 20). In Armenia in the 2000s, the lowest 30 percent of households received almost 8 times less income than the highest 30 percent did, but contributed 1.4 times more to total out-of-pocket payments. A summary of these findings is also provided in Table 3.

Table 3

Share of Total Income vs. the Share of total OPP (top and bottom 3 deciles)

Country and Year		Total Income of the Lowest Three Deciles as % of the Population's Total Income	Total OPP of the Lowest Three Deciles as % of the Population's Total OPP	Total Income of the Highest Three Deciles as % of the Population's Total Income	Total OPP of the Highest Three Deciles as % of the Population's Total OPP
Armenia	1990s	5	16	81	62
	2000s	8	37	63	26
Georgia	1990s	11	23	55	36
	2000s	11	22	55	45
Lithuania	1990s	16	17	51	49
	2000s	17	13	45	55

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

Both above measurements clearly indicate that OPP financing system in all countries and during both periods were inequitable, perhaps with the exception of Lithuania in the 2000s, where the system had changed from regressive in the 1990s to mixed in the 2000s.

This section measured equity of out-of-pocket payments in the three countries studied and compared how inequity has changed cross-time in the pre-reform and post-reform contexts within each country. Based on the findings of these analyses it can be concluded that countries with higher public expenditure on health, including both total expenditure as well as public expenditure, have more progressive OPP financing systems and thus enjoy a higher degree of equity in healthcare financing. Since both Lithuania and Georgia have introduced social health insurance as an additional public funding source for the healthcare system, while Armenia has not implemented this reform, it can be concluded that social health insurance may serve as a contributing factor for enhancing equity in healthcare financing. This conclusion could be further validated by the fact that in Lithuania, where social health insurance reform was more successful and sustainable than in Georgia, equity in healthcare financing improved between the pre-reform and post-reform periods. However, as it is explained in the discussion later in this report, social health insurance is just one of several other factors that may affect equity in healthcare financing.

3.3 Measuring the Progressivity Index

By consulting the above analysis, it is possible to compare how the progressivity (i.e. equity) of a healthcare finance system changes within a country over a certain period of time. However it is impossible to determine whether a country has a more regressive or more progressive out-of-pocket payment system relative to other countries. In order to perform a cross-country comparison of the financing system's progressivity, our research used the Kakwani Index of Progressivity, which assigns a numeric value to progressivity and thus permits comparative analysis between the countries. The Kakwani Index is positive (with a maximum value of 1) when a financing system is equitable and negative (with a maximum value of –2) when a financing system is inequitable. Proportionality is reflected in a Kakwani Index of 0.

The Index can also be illustrated graphically by two curves. One of the curves is the Lorenz curve (showing the degree of income inequality in a society) and the second is the payment concentration curve (indicating the cumulative proportion of the population, ranked from the lowest to the highest income, in relation to the cumulative proportion of healthcare payments). On the Kakwani graphs the vertical axis measures the cumulative proportion of income and payments, while the horizontal axis measures the cumulative proportion of the population. Thus, if the payment concentration curve lies above the

Lorenz curve, one can conclude that the lower income brackets contribute a greater proportion of total healthcare financing than the proportion of income they receive, and that the system is therefore inequitable. If the concentration curve lies below the Lorenz curve, it indicates an equitable system. If the concentration curve lies on the Lorenz curve, it indicates direct proportionality. It is also possible for the financing curve to cross the Lorenz curve. This suggests that the financing system is mixed—i.e. is regressive for some income groups and progressive for others. If the financing curve crosses the Lorenz curve, negative and positive values cancel each other out, and the overall index is ambiguous. This means that the when presenting the results of the analyses, both graphical representation, as well as the numeric index, should be reported in order to highlight any differences in financing impact at low and high incomes. The Kakwani Index findings for the three countries studied are summarized in Table 4, followed by corresponding graphical representations in Figure 14.

Table 4
OPP Kakwani Indices in Armenia, Georgia, and Lithuania

Country and Year		Gini Coefficient	Concentration Index	Kakwani
Armenia	1990s	0.6338	0.35	–0.28
	2000s	0.4831	–0.1	–0.58
Georgia	1990s	0.3998	0.08	–0.32
	2000s	0.4066	0.17	–0.23
Lithuania	1990s	0.2976	0.23	–0.07
	2000s	0.2936	0.32	0.02

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

As was expected, for all countries except Lithuania in the 2000s, the Kakwani Index has a negative value, demonstrating the regressivity of the OPP system and consequent inequity of the OPP financing systems. In Lithuania 2000s, although the index is positive, its value is too low to conclude that the financing system is progressive and thus is equitable. As the graphic representation of Kawani Index of Lithuania in the 2000s reveals (in Figure 14 below), this system is mixed, as the Lorenz Curve and the Concentration Curve cross each other. The same finding is confirmed by the analysis provided earlier in the report (Figures 12 and 13), which showed that the system was progressive for some income deciles and regressive for others. The Kakwani Index measurements in the countries also reveal that all countries except Armenia, the OPP system was less

equitable in the 1990s than in the 2000s, meaning Lithuania and Georgia achieved improvements in reducing the OPP financing system's regressivity. In terms of numeric value of such improvement, the two countries achieved similar results between the 1990s and 2000s (+0.9 points each).

Figure 14.a
Graphic Illustration of the Kakwani Indices
(Lorenz and Concentration Curves) for Armenia

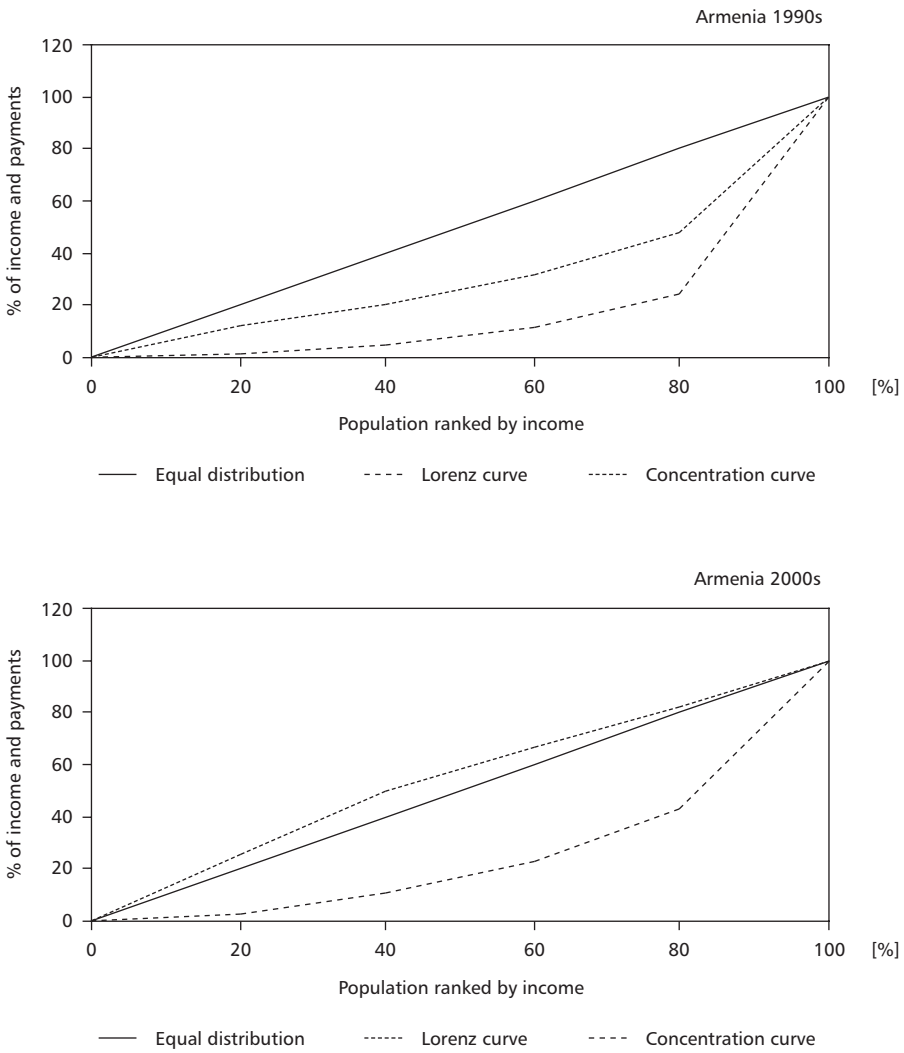
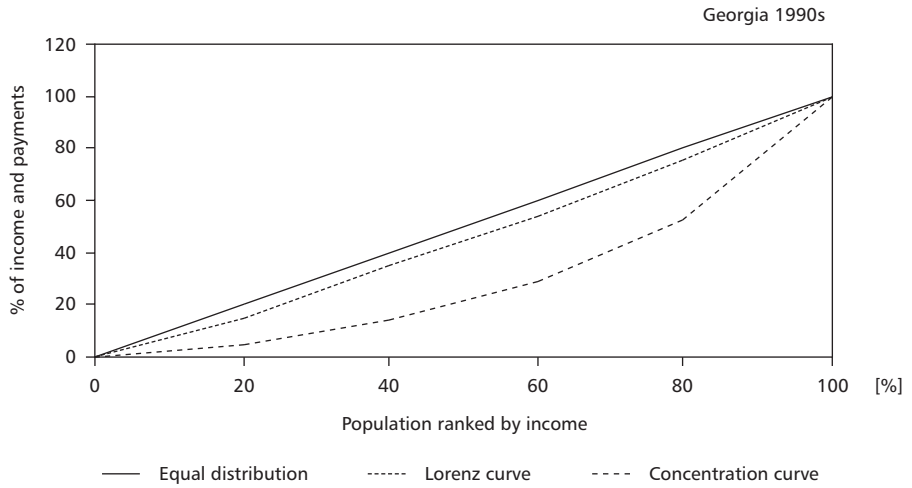


Figure 14.b
Graphic Illustration of the Kakwani Indices
(Lorenz and Concentration Curves) for Georgia



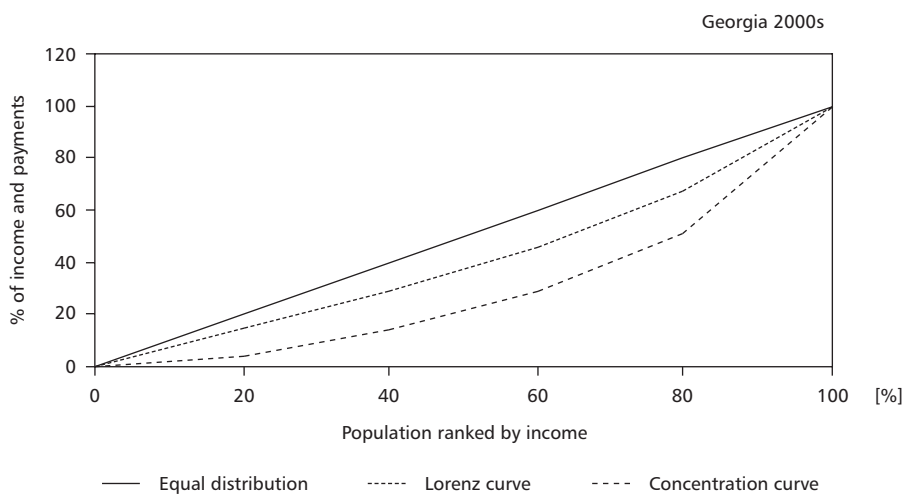
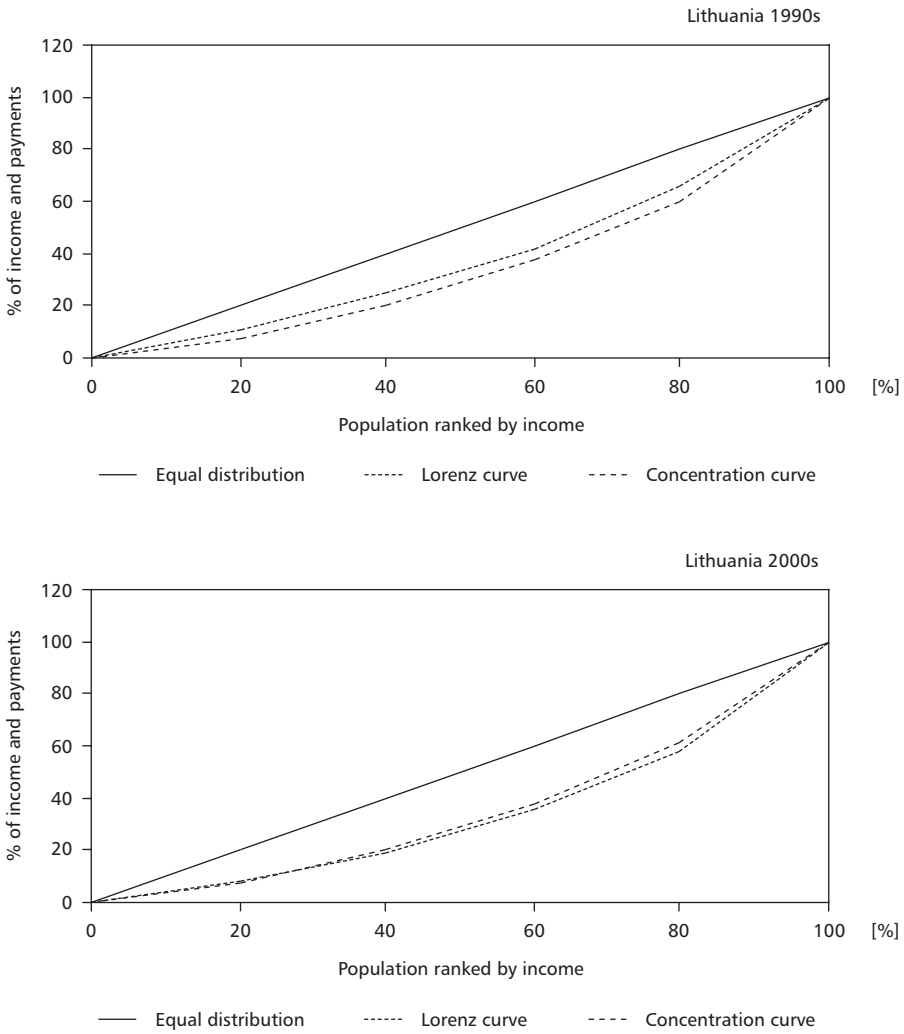


Figure 14.c
Graphic Illustration of the Kakwani Indices
(Lorenz and Concentration Curves) for Lithuania



Source: Produced by the author based on household income-expenditure survey data collected by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

Overall, as was expected, the findings measuring the Kakwani Index reveal the same findings as measuring the share and proportion of-out-of pocket payments and confirm that despite implemented reforms inequity remains an important concern for all types of post-soviet healthcare finance systems. Even though Lithuania was the only country that was able to change the regressive financing system to a progressive one, the positive value of this country's system in the 2000s was so low that the system can hardly be considered equitable.

3.4 Measuring Impoverishing Medical Expenditure

In addition to measuring the progressivity of healthcare financing in the selected countries, our research also focused on assessing the impact of out-of-pocket payments on household poverty levels. This was done by measuring the "Impoverishing Medical Expenditure" (IME) in each country, which indicates the extent to which the population is impoverished after making healthcare payments. This method requires the setting of an income threshold. For the measurement of IME, a threshold is set in terms of post-healthcare payment income. In other words, the threshold indicates the level below which a household's income should not go after healthcare payments are made. The threshold for calculating IME was set at 90 percent of the total population's mean income for each country in each year.

The IME method identifies a) the proportion of those households out of the total population for which income after paying for healthcare dropped below the threshold (incidence), as well as b) by how much households fell below the threshold due to impoverishing medical expenditures (depth). The findings are summarized below.

As the analyses revealed, overall, between 60 percent and 77 percent of all households (in all countries during both years) fell into poverty (ended up below the pre-determined poverty threshold) after making direct healthcare payments (see Table 5). From the 1990s to the 2000s, the proportion of such households increased in Armenia, remained unchanged in Lithuania, and decreased slightly in Georgia.

Table 5 indicates that different findings can be revealed when measuring inequity in healthcare financing by using various methods of measurement. For example, if the measurements of progressivity described above showed that Lithuania in the 2000s had the most equitable system among all countries in the cross-time context, the IME calculations show that Georgia had more favorable conditions in both years than both Lithuania and Armenia.

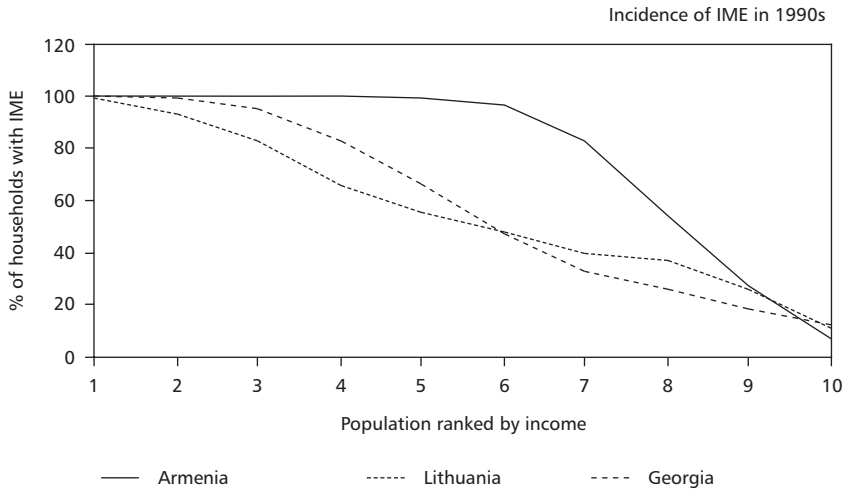
Table 5
Incidence of Impoverishing Medical Expenditure
in Armenia, Georgia, and Lithuania (1990s and 2000s)

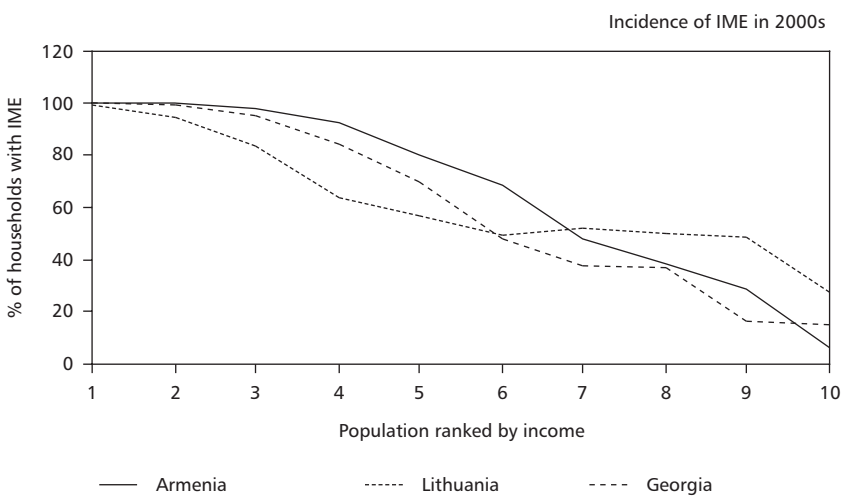
Country and Year		% of Households below IME Threshold
Armenia	1990s	66.173
	2000s	77.699
	Total	72.283
Georgia	1990s	61.475
	2000s	60.457
	Total	60.971
Lithuania	1990s	62.673
	2000s	62.550
	Total	62.612
Average	1990s	63.440
	2000s	66.902
	Both years	65.171

Source: household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

Not unexpectedly, lower income households have a greater chance of having impoverishing medical expenditures than better-off households. Figure 15 shows that almost as many as 100 percent of households from the lower 60th percentile in Armenia in the 1990s experienced IME, as opposed to only about 10 percent from the highest income decile. In all countries, however, IME incidence increased among higher income households between the 1990s and 2000s.

Figure 15
IME Incidence in Armenia, Georgia, and Lithuania
(1990s and 2000s)





Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

The highest proportion of households with IME are those whose income was reduced by 30 percent or more below the threshold after making out-of-pocket payments for health (see Table 6). This finding can be explained by two factors: the starting position of the household on the income distribution scale and the amount of payment made for healthcare.

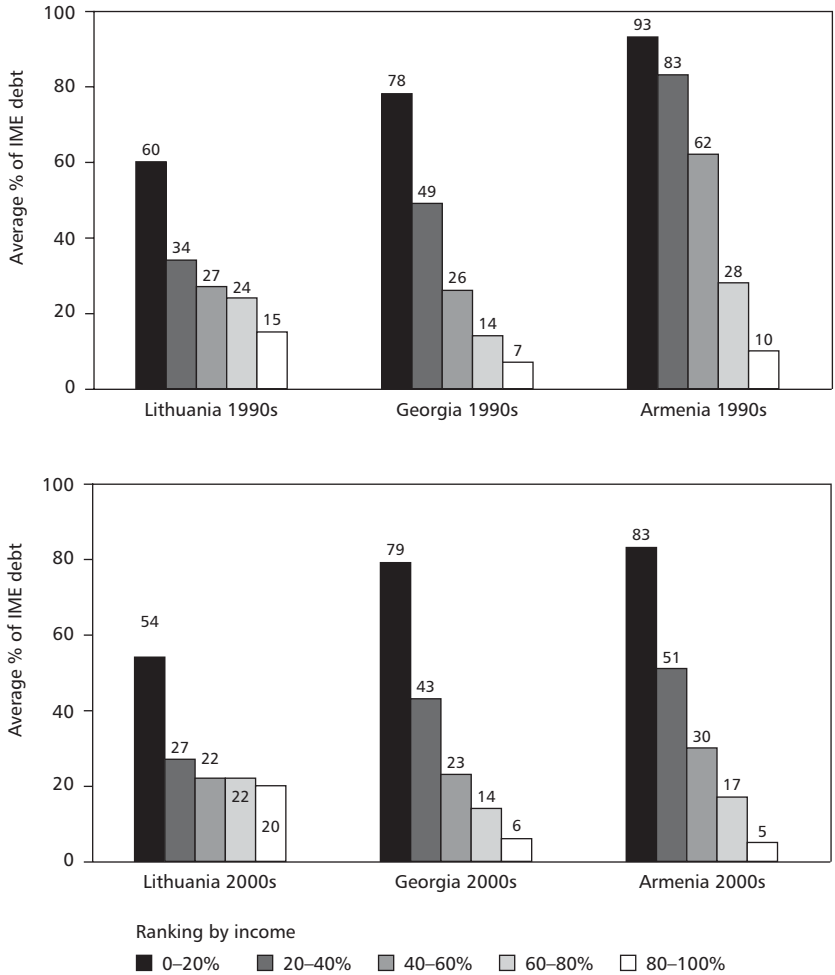
Table 6
Depth of Impoverishing Medical Expenditure
in Armenia, Georgia, and Lithuania (1990s and 2000s)

Country and Year		% of Households with Income 1–10% below IME Threshold	% of Households with Income 10–20% below IME Threshold	% of Households with Income 20–30% below IME Threshold	% of Households with Income > 30% below IME Threshold	Total % of Households with Income below IME Threshold
Armenia	1990s	4.5	4.9	5.6	51.2	66.2
	2000s	2.7	3.7	3.1	68.2	77.7
Georgia	1990s	4.4	4.6	6.0	46.5	61.5
	2000s	4.8	5.2	5.7	44.8	60.5
Lithuania	1990s	5.8	6.6	7.1	43.2	62.7
	2000s	6.2	7.3	7.7	41.4	62.6

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

The deepest IME was observed in Armenia in the 1990s, when the lowest income households dropped as far as 93 percent below the IME threshold (see Figure 16). The shallowest IME was seen among the highest income households in Armenia in the 2000s; this group dropped only 5 percent (as opposed to the 83 percent drop among the lowest income households). The smallest difference in IME depth between the highest and lowest income households (34 percent) was observed in Lithuania in the 2000s.

Figure 16
IME by Income Quintile by Country (1990s and 2000s)



Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

The above analysis indicates that poorer households are at greater risk of going into deeper poverty, even when the amount they pay is similar to what is paid by better-off households. On the other hand, better-off households' IME depth may be as much as that of poorer households, if the former remit disproportionately high payments. This phenomenon will be explored in the following section.

3.5 Measuring Catastrophic Medical Expenditure.

Another indicator of equity in healthcare financing that assesses the impact of OPP on poverty is the Catastrophic Medical Expenditure (CME). In this method, when the percentage of a household's total income that is paid out of pocket for health services goes above a pre-determined threshold, it is labeled catastrophic. This threshold is established in terms of OPP healthcare expenditure. In the present case, the threshold was set at 10 percent of total household income. Measurements were made to assess the following: a) catastrophic payment headcount, which counts the percentage of those households that have had catastrophic medical expenditure; and b) a catastrophic payment gap, identifying by how much health expenditures exceeded the catastrophic threshold of 10 percent. The results of the CME measurements are summarized in Table 7 below:

Table 7
Incidence of Catastrophic Medical Expenditure
in Armenia, Georgia, and Lithuania, (1990s and 2000s)

Country and Year		Percentage of Households with CME
Armenia	1990s	6.804
	2000s	16.172
	Total	11.770
Georgia	1990s	23.005
	2000s	19.112
	Total	21.079
Lithuania	1990s	33.254
	2000s	33.177
	Total	33.215
Average	1990s	18.728
	2000s	23.487
	Both decades	21.107

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

As shown in Table 7, Lithuania had the highest percentage of households with CME in both decades. The possible reasons for such findings are additional OPP expenses paid by higher income groups in Lithuania for additional services that are usually not covered by the public funds. The above table also indicates that the largest increase in CME incidence between the 1990s and 2000s was in Armenia, while CME incidence was reduced in Georgia. In most cases, health expenditures exceeding the CME threshold were either in the range of 1–10 percent above the threshold, or 30 percent or more above the threshold (see Table 8). While noting this, our analysis is unable to explain the reasons for this phenomenon.

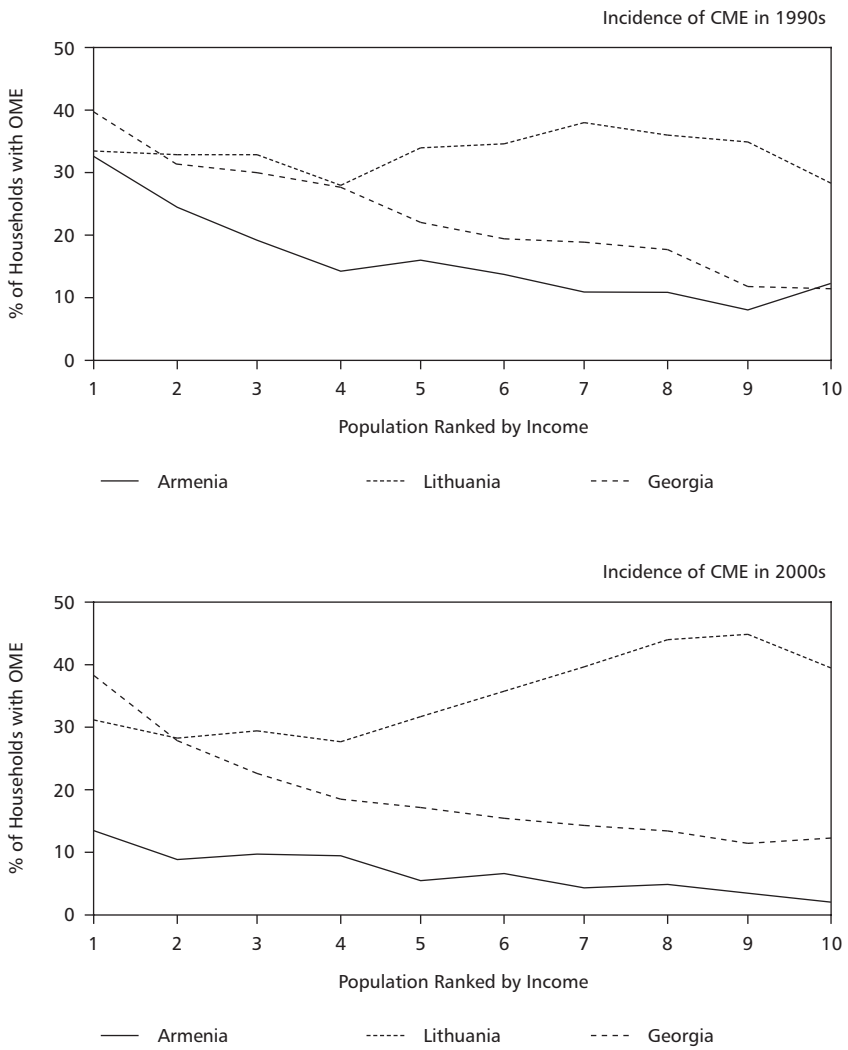
Table 8
Gap of Catastrophic Medical Expenditure
in Armenia, Georgia, and Lithuania (1990s and 2000s)

Country and Year		% of Households with Health Expenditure 1–10% above CME Threshold	% of Households with Health expenditure 10–20% above CME Threshold	% of Households with Health expenditure 20–30% above CME Threshold	% of Households with Health expenditure > 30% above CME Threshold	Total % of Households with CME
Armenia	1990s	2.1	0.7	0.9	3.1	6.8
	2000s	5.8	3.0	1.5	5.9	16.2
Georgia	1990s	9.7	3.9	2.3	7.1	23.0
	2000s	7.7	3.9	1.8	5.7	19.2
Lithuania	1990s	11.9	6.1	3.7	11.5	33.3
	2000s	13.4	6.6	4.1	11.0	35.2

Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

Patterns of CME incidence by income category reveal certain patterns. Figure 17 shows that in Armenia and Georgia, lower income households experienced higher CME incidence, while in Lithuania in the 1990s, the distribution was almost horizontal across all income deciles. In the 2000s, higher income households were more vulnerable to CME in Lithuania. This finding may be indicative of the fact that high income households chose to pay for additional services entailing higher private expenses.

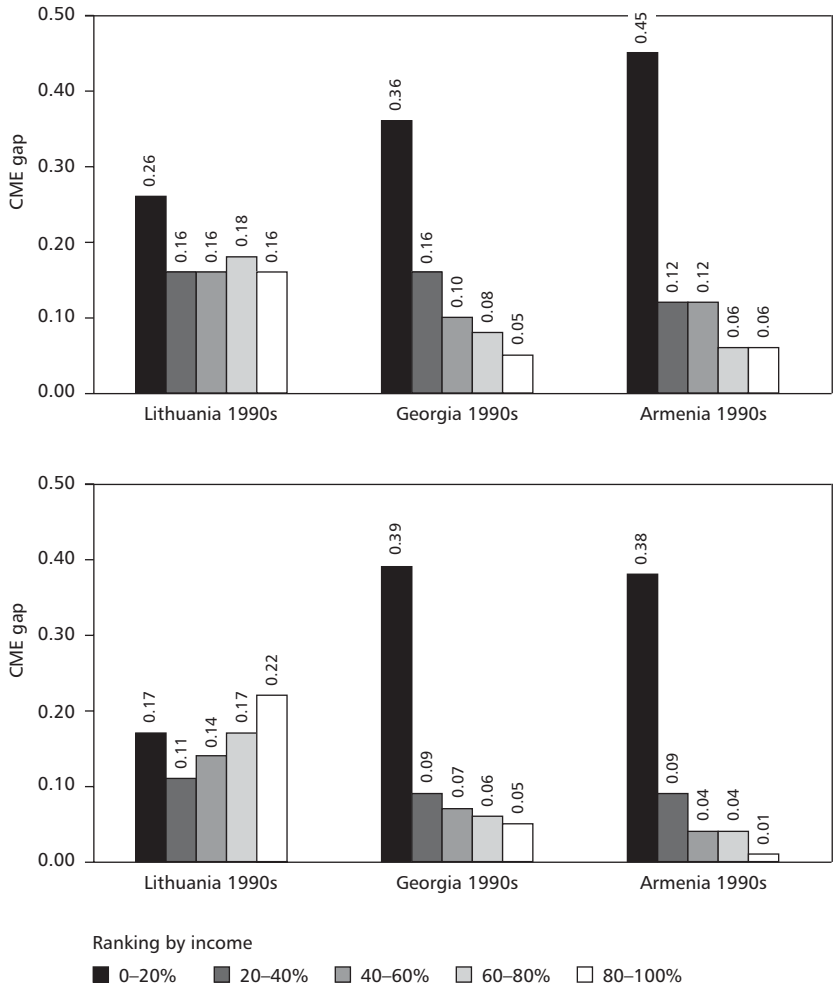
Figure 17
CME Incidence by Income Category in Armenia, Georgia, and Lithuania (1990s and 2000s)



Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

In terms of the CME gap by income category, no common pattern can be observed; neither between countries nor income categories (see Figure 18).

Figure 18
CME Gap by Income Quintile
in Armenia, Georgia, and Lithuania (1990s and 2000s)



Source: Household income-expenditure surveys performed by the national departments of statistics in Armenia (1996, 2001), Georgia (1996, 2002), and Lithuania (1996, 2002).

As Figure 18 indicates, in some cases (e.g. Armenia in the 1990s and 2000s and Georgia in the 1990s and 2000s) lower income households experienced a much greater CME gap than higher income households. In Lithuania in the 2000s this situation was reversed, although the difference in the CME gap was not great.

3.6 Summary

The analyses in this chapter clearly indicate that inequities exist in OPP healthcare finance systems in all three countries. However their prevalence and magnitude vary from country to country and also across time within the countries. The progressivity measurements revealed that lower income households spend a higher proportion of their income on (OPP) healthcare than higher income households. They also contribute a higher proportion of their total earnings to the entire population's total out-of-pocket healthcare expenditure. The Kakwani Index, which allows for inter-country comparisons, revealed that while in the 1990s Georgia had the least equal (most regressive) OPP financing system, followed by Armenia; in the 2000s Armenia and Georgia switched places, while the Lithuanian health financing system remained the most equitable among the three.

Out-of-pocket payments significantly affect the economic well-being of many households. Those with lower income are particularly vulnerable. It is also noticeable that no correlation was found between the progressivity of the healthcare finance system and OPP impact on poverty. So for example, although the financing system was the most equitable in Lithuania, a higher percentage of households experienced impoverishing medical expenditures than in Georgia (62.6 percent vs. 60.9 percent). In terms of catastrophic medical expenditures, the correlation between equity represented by progressivity and OPP impact on poverty was even more negligible—the country with the least equitable financing system (Armenia) had the least percentage of households with CME (11 percent), while the country with the most equitable OPP financing system (Lithuania) had the highest percentage of households with CME (34 percent).

By considering these findings, it can be concluded that since out-of-pocket payments (both formal or informal) are quite prevalent in the countries studied, those households that cannot afford to pay such charges often have limited access to health services, which ultimately may contribute to disparity in health status between the poor and better-off. Although disparity in health status between the various socioeconomic groups in the three countries studied was not explored by this research, such disparity, prevalent at the aggregate region-wide level, was one of the findings of this research as described in Chapter 2.

After identifying and measuring inequities in the healthcare finance systems of Armenia, Georgia, and Lithuania, it is important to explore their causes. Such discussion based on health systems analysis in these countries is provided in the following chapter.

4. EXPLORING CAUSES OF INEQUITY IN HEALTHCARE IN ARMENIA, GEORGIA, AND LITHUANIA

The present chapter examines the findings of empirical health systems analysis carried out in Armenia, Georgia, and Lithuania in comparative context. This analysis is aimed at diagnosing the underlying causes of inequity in healthcare in these three countries.

This diagnostic exercise revealed several "symptoms" that can be considered contributing factors to inequity in the healthcare systems. These symptoms can be thematically grouped into three broad categories:

- planning for healthcare resources
- purchasing health services
- administrative and infrastructure costs of operating the healthcare systems.

Each of the above categories is complex. The discussion below provides detailed analyses aimed at exploring to what extent these problems contribute to healthcare inequity in each country.

4.1 Planning Healthcare Resources

Although healthcare systems suffer from deficient public funding, the excessive supply of healthcare facilities and medical staff are major problems in all three countries studied. As the analysis shows, "rightsizing" (downsizing) these resources could be considered an effective means to achieve better efficiency, and consequently equity, in these healthcare systems. This section compares the provision of healthcare resources in the three countries.

Based on the 2003 data obtained from the official sources in each country (MoH and the State Statistical Service), it can be estimated that Georgia has the highest supply of clinical facilities per population, both for inpatient and outpatient care. With 17.7 outpatient facilities and 6 inpatient facilities per 100,000 individuals, it far exceeds Lithuania (12.9 inpatient, 5.7 outpatient) and Armenia (8.7 inpatient, 4.2 outpatient). At the same time, Georgia has the lowest supply of hospital beds per person than the other two countries (Georgia had 4.5 beds per 1,000 individuals; Armenia, 5; and Lithuania, 8.6). Thus, it can be concluded that inpatient facility planning in Georgia is less efficient than in Lithuania and Armenia. That fewer beds are allocated to a higher number of hospitals results in too many facilities each with too few beds; this ultimately increases the overall cost of care at the expense of high fixed costs. In addition to low levels of efficiency in bed allocation, bed utilization efficiency is also low in Georgia. With a 30 percent occupancy rate, Georgia lags behind Armenia (about 40 percent) and Lithuania (over 75 percent). Thus, beds, and consequently facilities, are under-occupied and

under-utilized in Georgia. Because these facilities continue to receive public funding, it can be concluded that the financial resource allocation is also inefficient.

With respect to clinical manpower supply, Georgia has the highest supply of physicians (4.6 per 1,000), followed by Lithuania (4 per 1,000) and Armenia (2.7 per 1,000). These statistics lead to another interesting finding: the rate of patient-occupied beds per physician in Georgia is only 0.3, followed by Armenia (0.7) and Lithuania (1.7). In other words, Georgia has 3.8 physicians per each hospital bed that is not vacant, Armenia 1.4, and Lithuania 0.6. It is reasonable to argue that this level of clinical manpower supply, especially in Armenia and Georgia, is excessive. Considering the two-tier salary schemes for medical personnel in Georgia and Lithuania, where basic salaries are paid at a flat rate regardless of output, such allocation of clinical staff is not only excessive but also economically inefficient (in Armenia the amount of salary is determined by the workload only, without the flat basic salary tier).

Comparison of unoccupied hospital beds per doctor leads to another interesting finding: despite the significantly higher bed-occupancy rate in Lithuania, the number of vacant hospital beds per doctor is twice that in Georgia and Armenia (i.e., 1.2 in Lithuania, compared with 0.6 in Georgia and 0.5 in Armenia). This is explained by the significantly higher provision of hospital beds in Lithuania per population. In other words, despite a more favorable bed occupancy rate in Lithuania than in Armenia and Georgia, hospital bed supply is still excessive in relation to needs and the supply of clinical staff. All the above statistics are summarized in Table 9.

Inefficiencies in healthcare infrastructure and manpower contribute to inequity in healthcare because it results in inefficient spending of scarce financial resources without producing adequate outputs, either quantitatively or qualitatively. Savings generated from increased efficiency could be allocated to improve quality of care and enhance equity.

In addition to evaluating the provision of healthcare resources, the study explored their geographical distribution within the countries in order to assess equity in physical accessibility to medical care. This analysis revealed an unequal distribution of healthcare resources in all three countries. Urban areas are better supplied by healthcare facilities and manpower than rural areas. A particularly high concentration of these resources is noticeable in capital cities. This trend is evident in all three countries, but to a different extent in each. A summary of these findings is provided in Figure 19.

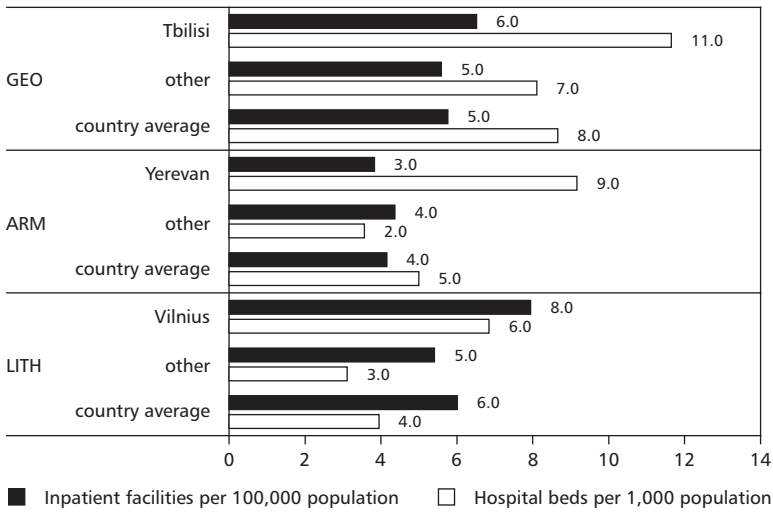
Table 9
Supply of Healthcare Infrastructure and Manpower (2003)

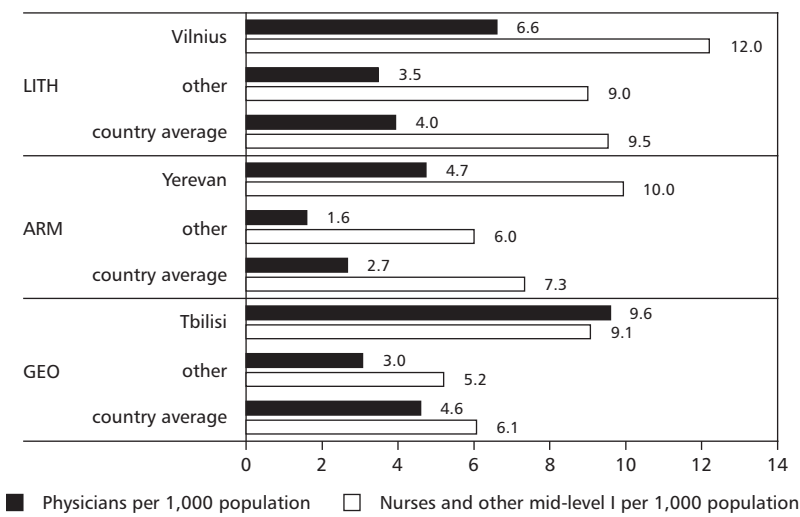
	Georgia	Armenia	Lithuania
Hospital beds per 1,000 individuals	4.5	5.0	8.7
Bed occupancy rate (%)	30.1	37.0	75.5
Physicians per 1,000 individuals	4.6	2.7	4.0
Nurses per 1,000 individuals	4.8	5.5	7.6
Nurse/doctor ratio	1.0	2.0	2.0
Patients per physician	10.0	26.0	59.0
Patients per nurse	10.0	12.0	31.0
Doctors per occupied bed	3.8	1.4	0.6
Nurses per occupied bed	4.0	3.0	1.2
Occupied beds per doctor	0.3	0.7	1.7
Vacant beds per doctor	0.6	0.5	1.2

Source: Health ministries of Armenia, Georgia, and Lithuania.

As the figure indicates, inpatient health facilities are found to be the most unequally distributed in Lithuania, with the supply per 100,000 individuals twice as high in the capital city as in the rest of the country. In Georgia, this variable is 1.2, while in Armenia the capital city has a slightly lower supply of inpatient facilities than the rest of the country (a ratio of 0.9). Nevertheless, Armenia leads with respect to the hospital bed supply in its capital city, with 4.5 times more hospital beds per 1,000 individual in Yerevan as in the provinces. This ratio is 1.5 for both Georgia and Lithuania. This finding indicates that a small number of hospitals in the Armenian capital have a high hospital bed stock, while a large number of rural facilities have a sparse distribution of beds. In contrast, Georgia has large number of urban facilities with a sparse bed distribution, while rural areas have a low concentration of health facilities. More limited data was available on geographical distribution of inpatient health facilities by facility type. The provision rate for specialized secondary level hospitals in the Georgian capital is five times greater per 100,000 individuals than the rate in the rest of the country. With respect to tertiary level hospitals, all are located in the capital cities of Armenia and Georgia, while in Lithuania they are distributed between the capital city of Vilnius and the city of Kaunas. This distribution of the healthcare infrastructure makes it more difficult for the rural population to access inpatient health facilities.

Figure 19
Distribution of Healthcare Resources (2003)





Source: Health ministries of Armenia, Georgia, and Lithuania.

The concentration of medical personnel in the capital city is most notable in Georgia. This is particularly true for the provision of physicians: Tbilisi has a 3.2 times greater number of physicians per 100,000 individuals than the rest of the country; this ratio

is 3 for Armenia and 1.8 for Lithuania. This finding, combined with the above finding about urban/rural hospital bed supply, indicates that the high concentration of urban physicians in the Georgian capital is distributed across a large number of urban facilities, but the number of hospital beds to which they are assigned is disproportionately low.

In conclusion, the analysis reveals that healthcare infrastructure and medical staff resources tend to be concentrated in capital cities, particularly for secondary and tertiary care, thus altering equity with respect to physical access to medical care. Overall, Lithuania seems to have the most equitable distribution of healthcare resources among the three countries; however, Lithuania would also benefit from a more equal redistribution of medical infrastructure and staff resources to ensure more equitable geographical access to healthcare for the entire population.

The above findings about excessive supply and unequal distribution of resources might suggest a need for downsizing and redistribution of physical and human healthcare resources (also referred to as "optimization") in all three countries. Moreover, such policy options may provide the opportunity to achieve greater efficiency and increased equity. However, before downsizing and redistribution of health human resources and infrastructure is considered a policy recommendation, the objective needs of the population should be determined, based on its epidemiological profile and regional distribution. Further investigation is necessary to define the scope of such optimization, and this policy option should be considered in the following context. First, the underlying causes of underutilization should be identified and the real need for these resources should be determined based on the population's health status. The demand for healthcare infrastructure and human resources does not reflect the real need for these resources when it is assessed on the basis of utilization levels. Thus, for example, low referral rates to specialists (in the inpatient setting) and consequently low bed-occupancy rates in Georgia and Armenia, in addition to the high supply of hospital beds and facilities, can be explained in part by the extremely limited range of inpatient services covered by the publicly funded Basic Benefit Package. Due to high levels of formal and informal out-of-pocket payments for inpatient care, many Georgians and Armenians simply cannot afford to utilize inpatient services.

Based on the above argument, the next step in the analysis is to explore the financial aspects of healthcare planning in the three countries studied. Data on public expenditures and beneficiaries of state-subsidized health services were collected from the health funds of Armenia, Georgia, and Lithuania, which are responsible for purchasing health services within the frameworks of the publicly funded healthcare programs. Additional data on public expenditures were obtained from official state budget documents.

Per capita public expenditure on health services provision was estimated to be as low as 7.8 USD in Georgia and 10 USD in Armenia, as compared with 198 USD in Lithuania. The largest share of funds allocated for health service provision in Armenia and Georgia is spent on inpatient treatment (i.e., 62 percent and 60 percent, respectively;

the share is 43 percent in Lithuania). Despite the lower share of public expenditure on inpatient care, nearly all (97 percent) inpatients in Lithuania benefit from publicly funded services. The percentage of inpatients benefiting from publicly funded services is 69 percent in Armenia and 74 percent in Georgia. However, the scope and volume of the public benefits per beneficiary in these two countries lag behind those in Lithuania: Armenia spends 119 USD of its public funds per beneficiary; Georgia, 128 USD; and Lithuania, 376 USD (Table 10).

Table 10
Public Expenditures on Inpatient Treatment

	Georgia	Armenia	Lithuania
Public expenditure for inpatient care [USD]	21,061,327	20,086,804	295,924,703
% of total public expenditure for health	60	62	43
Number of inpatient beneficiaries receiving publicly-funded healthcare	162,957	169,500	788,050
Expenditure per beneficiary [USD]	129	119	376

Source: Health ministries of Armenia, Georgia, and Lithuania.

With respect to outpatient care (i.e., outpatient treatment and preventive services), the governments spent as little as 4.8 USD per beneficiary in Armenia, 8.5 USD in Georgia, and 29 USD in Lithuania. Due to such low levels of public allocation per beneficiary, as well as poorly developed private insurance mechanisms, the total share of prepaid heath services is relatively low compared with services provided on the basis of direct OPP at the point of service. This is especially true for Armenia and Georgia, where informal OPP dominate over formal co-payments for care. In order to further explore the low allocations of public funding and to find relationships between the low levels of prepaid services and high levels of direct payments for care, the study analyzed how publicly funded services were priced in the countries studied, and how inadequate public funding was compensated for with direct payments. These findings are presented in the following section.

4.2 Purchasing Health Services

The extent to which state reimbursement covers the actual ("real") costs of inpatient treatment in the three countries was assessed. To estimate the average actual cost of inpatient treatment per case, data was collected from four hospitals (two urban and

two rural) in each country. Administrative and clinical personnel at these hospitals were asked to estimate the "real cost" of treatment for four major disease categories that are usually covered by public funds, considering all fixed and variable costs incurred. Average values for these estimates in each disease category were compared with the respective public reimbursement rates for these categories.

This analysis yielded similar results for Georgia and Armenia, where, on average, state reimbursement is sufficient to cover only about two thirds of the real costs of inpatient treatment (65 percent and 64 percent, respectively), whereas in Lithuania state funding covers more than 80 percent of incurred costs (Table 11).

Based on a comparison of "real costs" estimated by hospital personnel with existing state reimbursement rates, it is estimated that one third of inpatient treatment costs in Armenia and Georgia, and one fifth in Lithuania, are shifted to the patients' pockets. This is in addition to the formal co-payments for hospital care established in these countries. Moreover, the practice of informal payments to medical personnel, common in all three countries, further increases the financial burden of the patients and consequently contributes to inequity in healthcare.

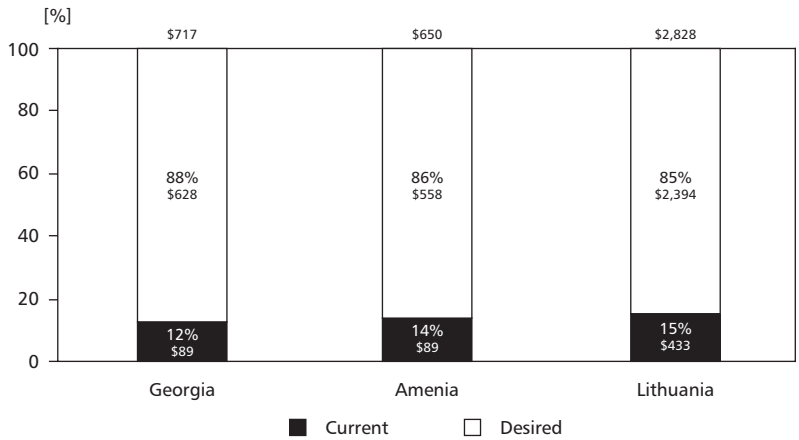
As a next step in the analysis, the payment mechanisms to medical personnel in the same hospitals were analyzed to identify financial incentives for medical staff to charge patients informal OPP. An opinion survey of physicians was used to estimate "a desired level of net monthly income," beyond which they would not have a need or incentive to charge patients informal OPP for provided services. These results were compared with the current average salary levels of these personnel. The analysis summarized in Figure 20 shows that staff salaries in all three countries were roughly 7 to 8 times lower than desired. The huge difference between actual and "desired" salaries suggests that medical personnel have considerable financial incentives to charge informal fees. Apparently, this also affects medical personnel performance and results in lack of motivation to provide high quality care.

Table 11
Public Funding vs. Actual Cost Estimates

Disease Categories	Georgia			Armenia			Lithuania		
	Public Funding per Case [USD]	Real Cost [USD]	% Reimbursed	Public Funding per Case [USD]	Real cost [USD]	% Reimbursed	Public Funding per Case [USD]	Real Cost [USD]	% Reimbursed
Acute myocardial infarction (without open heart surgery)	124	188	66	121	190	64	255	335	76
Acute stroke involving neurosurgery	469	736	64	230	276	83	943.7	1143	83
Abdominal surgery	62	110	57	95	225	42	362.1	431	84
Physiological (normal) deliveries	70	93	79	95	138	69	—	—	—
Average	181	282	65	135	207	64	520	766	81

Source: Data collected by the author in two rural and two urban hospitals in Armenia, Georgia, and Lithuania.

Figure 20
Actual and Desired Monthly Salaries



Source: Data collected by the author in two rural and two urban hospitals in Armenia, Georgia, and Lithuania.

The "current salary" in the above analysis referred to the average salary paid for providing state reimbursed (BBP) services and non-BBP services. In Armenia and Lithuania, staff salaries for BBP services are substantially lower than are salaries for non-BBP services (no such differential approach to calculating medical staff salaries exists in Georgia). It can be assumed that such differential mechanisms of payment to physicians result in lower motivation for medical staff to provide quality care within publicly funded health programs, and also provide greater financial incentive to charge higher OPP for these services.

4.3 Administrative and Infrastructure Costs of the Healthcare System

Administrative costs in this research are defined as all costs to the healthcare sector except those incurred for service provision (both clinical and public health services), medical/healthcare research and education, and the medical/healthcare industry. Thus, only healthcare governing institutions (i.e., MoH, health funding agencies and their subordinate institutions) were included in the analysis. Their itemized expenditures for 2003 were measured, based on information obtained from financial reports produced by the respective institutions (which was integrated and, when relevant, cross-checked with data provided by the MoF). Administrative expenditures were divided into three

categories: (a) salaries; (b) facility costs, including office expenses, maintenance, utilities, and operational expenses; and (c) "other costs," including business travel, vehicle costs, and other unallocated expenses.

As the analysis revealed, the amount of resources spent annually on healthcare administration differs significantly between the three countries. The expenditures in Lithuania (36.7 million USD) considerably exceed the heath sector administrative costs in Georgia and Armenia (1.9 million and 0.6 million USD, respectively). This difference in spending can be expected given the advanced level of economic development in Lithuania. The analysis also shows that administrative costs in Lithuania are high in proportion to total health expenditures, and constitute 5 percent, compared with 4.2 percent in Georgia and 1.8 percent in Armenia.

The ratio of costs incurred for provision of all health services (i.e., inpatient care, outpatient care, and public health services) to the costs incurred for administration of the healthcare system was 3.6 in Lithuania, 5.7 in Georgia, and 5.9 in Armenia, indicating higher share of spending on administration in Lithuania compared with that in the two other countries. Lithuania also scored highest in terms of health sector administrative expenditure as a percentage of GDP (Lithuania 0.2 percent, Georgia 0.05 percent, and Armenia 0.002 percent). The estimates for average healthcare administration expenditure per capita, per healthcare employee (administrative and clerical worker), and per healthcare facility (non-clinical facilities) also followed the same trend, with the highest estimates for Lithuania and the lowest for Armenia (Table 12).

Table 12
Administrative and Infrastructure Costs of Healthcare Systems

	Armenia	Georgia	Lithuania
Total healthcare administration costs per Capita [USD)	0.2	0.4	10.6
Administrative healthcare costs per health care employee (besides salary) [USD]	18	37	735
Healthcare administration cost per health care facility (non-clinical) [USD]	19,515	35,769	873,678

Source: Health ministries of Armenia, Georgia, and Lithuania as well as state health funds of Georgia and Lithuania.

These findings indicate a significant variation with respect to administrative costs for healthcare systems. While there is no right or wrong amount of funding to be spent on healthcare system administration, it might be concluded that low administrative costs in Armenia and Georgia are the result of low availability of resources for the healthcare sector in these countries. They spend as much as they can afford on healthcare system

administration, which amounts to the minimum possible, below which proper functioning of the system would be in question. In Lithuania, health administration costs are not only higher in absolute terms, but are also disproportionably higher in relation to costs incurred for service provision. Costs are also higher in Lithuania with respect to the percentages spent per capita, per employee, and per facility. It is important to emphasize that these findings suggest, but do not necessarily confirm, the low efficiency of the Lithuanian healthcare administration (due to higher spending). It would be possible to arrive at this conclusion by comparing Lithuanian administrative expenditures with those of other countries that have a comparable level of economic development. Unfortunately, such data were not available for this study. It can be argued, however, that very low total administrative spending in Georgia and Armenia indirectly affects the inequity in their healthcare systems (i.e., as it does on the overall quality of system administration). This is because, with low levels of funding, technical capacity and the quality of administrative staff's output are expected to be low in these countries. As a result, many important aspects of policy-making (e.g., health policy analysis, research, planning) are carried out only superficially, thus the problem of inequity may not be given proper quantitative and qualitative attention.

Analysis of healthcare administration expenditures by cost category reveals that, in all three countries, the greatest portion of administrative money is spent on salaries and benefits for healthcare personnel. Salaries (including benefits) account for as much as 84 percent of total administrative expenditures in Armenia. This type of expenditure is less in Georgia and Lithuania (66 percent and 58 percent, respectively). In absolute terms, the average annual salary budget per administrative employee is comparable in Armenia and Georgia (832 and 930 USD, respectively), but is much higher in Lithuania (6,401 USD). These findings reveal that Armenia, which has the lowest level of total administrative expenditure, spends almost all of this money on employees' salaries, leaving only a negligible fraction for all other administrative functions. For example healthcare administration facility costs account for approximately one third of total administrative costs in Georgia and Lithuania (32 percent and 31 percent, respectively), whereas these expenses constitute only 13 percent of total administration costs in Armenia. On average, 11,602, 2,480, and 270,356 USD per year are spent for maintenance of an administrative facility in Georgia, Armenia, and Lithuania, respectively. Thus, with less than an average of 210 USD per month for the maintenance and operational costs per administrative facility in Armenia, and about 970 USD in Georgia, it can be assumed that these healthcare administration systems are being stretched. These findings confirm the above argument that low spending on a variety of administrative functions has a negative impact on the quality of the administrative system, which ultimately affects equity as well, because maintaining equity is one of the major functions of healthcare administration and management systems. Table 13 summarizes the findings described above.

Table 13
Administrative and Infrastructure Costs by Category

Expenditure Categories	Georgia	Armenia	Lithuania
Total [USD]	**1,875,713**	**604,977**	**36,694,467**
As % of total public expenditure on health	4.8	1.8	5.0
As % of GDP	0.05	0.02	0.20
per capita [USD]	0.4	0.2	10.6
per administrative facility [USD]	11,602	2,480	270,356
per employee (administrative /clerical worker) [USD]	1,408	985	11,073
Salary and Benefits			
As % of total administrative cost	66	84	58
per employee [USD]	930	832	6,401
Administrative Facilities and Infrastructure			
As a % of total administrative cost	32	13	31
per administrative facility [USD]	11,602	2,480	270,356
Other administrative costs (e.g., travel vehicles)	**2**	**3**	**11**

Source: Health ministries of Armenia, Georgia, and Lithuania as well as state health funds of Georgia and Lithuania.

In addition to analyzing monetary costs per administrative expenditure category, the supply of non-monetary administrative resources (e.g., administrative human resources staff and facilities) was also assessed (Table 14).

Table 14
Non-Monetary Administrative Resources

	Georgia	Armenia	Lithuania
Administrative facilities per 1000 km²	0.72	1.0	0.6
Administrative facilities per 100,000 individuals	1.1	1.0	1.2
Administrative employee per 100,000 individuals	29	19.1	95.7
Patient/administrative staff ratio	162	358	245

Source: Health ministries of Armenia, Georgia, and Lithuania as well as state health funds of Georgia and Lithuania.

This analysis reveals a considerable imbalance between the scarce monetary resources and the excessive provision of human resources and infrastructure for running healthcare administration systems in these countries. Healthcare administration facilities are in excessive supply in all three countries, with about one administrative facility per 100,000 individuals, or 1 administrative facility per 5 inpatient facilities (which, in turn, are also in excessive supply). Significant variation among the countries is seen in the provision of administrative human resources both per general population and per patient. In Lithuania, as many as 5 times more administrative personnel are allocated than in Georgia and Armenia for the same population size. This finding suggests that Lithuania not only spends more funding and allocates more non-monetary resources for administering the healthcare system in absolute terms, but is also the least efficient of the three countries in relative terms. These findings prompt the assumption that Lithuania could improve equity in health service financing by increasing expenditures for service provision while reducing administrative costs. However, this recommendation is given with caution until the consequences of reducing administrative resources on the quality of system management can be determined. In other words, Armenia, which has the most efficient healthcare administration, is not necessarily the exemplary model because the quantity and quality of the system's output in relation to its cost has not been evaluated (i.e., the correlation between input and output).

Nevertheless, for the purpose of this research, Armenia is taken as a reference case and the Lithuanian and the Georgian systems are analyzed relative to that of Armenia. This method of analysis, referred to as the "preferred method," was proposed by Aaron (2003), who carried out a comparative analysis of administrative costs for the U.S. and Canadian healthcare systems. Table 15 provides a summary of the findings.

Table 15

Excess Administrative Costs in Georgia and Lithuania (Armenia = 0)

Excess Administrative Expenditures	Georgia	Lithuania
As % of total public expenditure for health	3.0	3.2
As % of total administrative cost	63	65
Total in monetary amounts [USD]	1,182,210	23,686,755
per capita [USD]	0.26	6.84

Source: Health ministries of Armenia, Georgia, and Lithuania as well as the state health funds of Georgia and Lithuania.

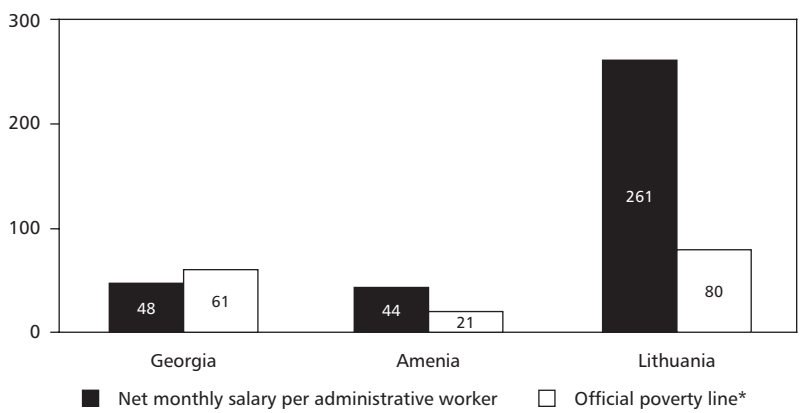
Compared with Armenia, Georgia and Lithuania allocate, respectively, about 3 percent and 3.2 percent greater portions of their total public spending for healthcare on

system administration. Thus, if these two countries reduced their share of administrative expenses to the Armenian level, Georgia would save about 63 percent of its total administrative cost, and Lithuania would save 65 percent. In absolute terms, this means about 1.2 million USD in annual savings for the Georgian healthcare system and 23.7 million USD for the Lithuanian.

Given the considerable excess capacity of healthcare administration manpower in Georgia and Lithuania, it is reasonable to suggest that increased efficiency in the healthcare systems of these countries can be achieved through reduction in the number of healthcare administration personnel. Thus, for example, if the provision of healthcare administration personnel n these two countries were reduced to the Armenian level (i.e., 19.1 employees per 100,000 individuals) the Lithuanian healthcare system would save as much as 17 million USD, accounting for about 65 percent of its estimated excess spending. Under the same scenario, potential savings in Georgia would be more than 1 million USD, which constitutes approximately 40 percent of their excess spending.

Not surprisingly, the potential for savings from a reduction in administrative staff resources to the Armenian level was estimated to be smaller in Georgia than in Lithuania because of the lower level of administrative staff provision (i.e., 29 per 100,000 individuals versus 95.7) and also due to significantly lower salaries for these personnel. It is relevant to note here that, while a considerable difference in administrative salaries between these two countries is expected, the average salary of administrative healthcare staff in Georgia is too low even in that country's own context. The average net salary per healthcare administration employee in Georgia is estimated to be 13 USD less than the officially determined poverty line in that country (Figure 21).[5]

Figure 21
Official Poverty Line and Salary Level of Administrative Staff



Source: Health ministries of Armenia, Georgia, and Lithuania as well as the state health funds of Georgia and Lithuania.

Based on this finding, it can be assumed that administrative healthcare personnel in Georgia need some sideline income, either formal or informal, to make ends meet. This presumably results in ineffectiveness and poor performance by the personnel at their main jobs. One possible recommendation for Georgia is to increase the salaries of administrative staff, at the expense of savings as a result of reducing the number of such staff. It is worth mentioning that the new government in Georgia stated an intention to reduce administrative personnel starting in 2005.

Although the provision of healthcare administration facilities was found to be similar in all three countries, it is worth mentioning the different institutional arrangements for the health sectors of each country. Given the limited availability of resources, the study questioned the necessity of keeping health funds (such as USIF in Georgia, the Sickness Fund in Lithuania and the State Health Fund in Armenia) independent (separate from the MoH)—parallel administrative systems responsible for reimbursing healthcare providers. The most frequently provided argument for creating health funds as separate organizational entities independent from the ministries (as stated in the reviewed policy documents and reports) was the inevitable need for separation of healthcare financing from health service provision. This study agrees that the separation of financing from care provision, and the introduction of market-derived competitive incentives into the publicly operated healthcare system, may indeed offer opportunities for enhancing efficiency in the healthcare sector. However, it can be argued that the separation of financing from service provision in the countries studied was implemented by a process of "autonomization" (i.e., privatization or corporatization) of healthcare providers, considered key to healthcare reform during its early years. Healthcare providers were granted managerial, financial, and legal autonomy, and the MoH was no longer responsible for service provision. In the context of extremely scarce healthcare resources, the ministries could have retained the functions of pooling healthcare funds and purchasing health services, especially because the infrastructure of MoH systems in all three countries (availability of regional and local offices) allowed for undertaking these functions countrywide, instead of creating separate institutional funds in the form of parallel healthcare administration structures responsible for pooling/purchasing functions. Although subsequently in the late 1990s/early 2000s, the health funds were legally merged back into the ministries (except for Georgia, where the USIF is still an independent juridical person of public law "under the State Control of the MoLHSA"), these structural changes were not followed by adequate downsizing of human and material resources. Thus, the system remained inefficient even in those countries where the institutional merger of the funds with the ministries took place. Thus, the "twofold separation" of financing from service provision occurred in the countries studied, where the ministries are supposed to define the needs, policies, and regulations for purchasing health services; while the health funds pool the healthcare resources and pay the providers. The question arises whether running a separate

administrative system for the sole purpose of pooling and purchasing is a reasonable policy option for these countries.

Further, the "purchaser-provider split" in these countries fails to make use of one of its advantages, that is, the advantage of market-derived incentives/competition in publicly operated healthcare systems. In Armenia and Lithuania, all providers are contracted universally. In Georgia, "selective contracting" is formally in place. However, due to ineffective and corrupt selection mechanisms and poor monitoring and regulation systems, competition does not, by and large, enhance either quality of care or cost-containment. The "tenders" for selecting the providers are conducted purely for formal purposes, and in reality almost all providers get the contracts with the funding agency.

While there is a growing consensus that financing and provision should be in different hands, would two costly parties on the financing side (i.e., MoH and the health funds) with ineffective coordination and much overlapping between them, lead to enhanced efficiency? It can be hypothesized that abolishing the funds (not merely merging them with the ministries while retaining all administrative expenditures) would yield substantial savings for the healthcare system, which ultimately could be directed to increasing the budget for service provision. The research has explored the potential of such savings: if the Sickness Fund were abolished in Lithuania, 14 percent of total administrative cost for the healthcare system (5.2 million USD) would be saved, which corresponds to 0.7 percent of the total healthcare budget. The same structural change in Armenia would save 15 percent of total administrative cost. The highest savings from abolishing the fund as a separate administrative entity would be achieved in Georgia, where the savings would equal 56 percent of total healthcare administration cost and 2.7 percent of total healthcare spending. Obviously, these savings could be re-allocated to complement the scarce financial resources available for service provision, which would contribute to enhancing equity and improving quality of care.

4.4 Summary

This chapter presented findings from the health systems analyses for Armenia, Georgia, and Lithuania, aimed at identifying causes of inequity in the healthcare systems in these countries. While studies often look for the reasons underlying inequity in health services financing and provision, this study has also paid particular attention to health system administration. As the analyses revealed, inequity in healthcare systems in the countries studied results not only from the scarce availability of resources for healthcare, but also from inefficient spending and allocation of available resources, both in service provision and administration.

As discussed earlier in the report, in certain circumstances equity and efficiency in healthcare can be viewed as opposing forces. Policy measures aimed at increasing the

efficiency of funding through various cost-control mechanisms can sometimes lead to reduced equity as a result of reducing accessibility, affordability, or the quality of healthcare services. The opposite is also possible: an equitable and equal system, in which the entire population is entitled to a wide range of free services, requires not only availability of more resources, but also more generous spending of funds; thus, efficiency could be low in such systems.

However, as the case-study analyses reveal, in certain circumstances equity and efficiency are not incompatible. This has been shown to be true in two scenarios: (a) when healthcare administration costs are high, relevant policy reforms can yield substantial savings and can offer an opportunity to increase efficiency (through reducing administrative costs) as well as equity in the healthcare system (through increasing resource allocation for service provision at the expense of lowering administrative cost); b) when healthcare planning (including the infrastructure, technologies, and human resources) is in excessive supply nationwide, and/or is distributed unequally throughout the country, specific targeted policies can be implemented in order to balance supply with demand, ultimately increasing both efficiency and equity in the healthcare system.

The analysis shows that, in terms of monetary expenditure in healthcare system administration, the countries studied (except Lithuania) are experiencing sharp deficits, which is not surprising given the very low levels of total health expenditure in these countries. Extremely low financing ultimately has a negative effect on the implementation of many important administrative and managerial healthcare functions; thus, it can be considered an indirect contributor to the existing inequities in the healthcare system.

At the same time, considerable inefficiencies are noted in the allocation of non-monetary resources for healthcare administration, as well as for service delivery (e.g., staff and infrastructure) in all three countries. The supply of these resources far exceeds demand. Not only are these resources over-supplied nationwide, but they are unequally distributed within the countries, which further increases the inefficiency of their use.

Problems exist with not only excessive supply of non-monetary resources for service provision and administration, but also with existing institutional arrangements. Two-fold separation of financing and provision functions, which keeps health finding agencies separate, parallel administrative systems within the healthcare sectors (by separating them from the MoH), significantly increases overall administrative costs; thus, taking away resources that could be used to ensure more adequate funding for service provision. Also, universal contracting of providers for publicly funded service provision increases the total fixed cost for service provision, taking away resources that could be used for more adequate funding of the direct costs incurred by service provision.

These inefficiencies ultimately lead to the inadequate funding of public service provision programs. The findings reveal that monetary resources for inpatient health services delivery are largely insufficient in all three countries. There is a particularly urgent need for increased public expenditures for health service provision in Georgia

and Armenia. Inpatient health services in all three countries are under-priced, and the reimbursed resources do not cover all the costs incurred by the providers. About 35 percent of inpatient treatment costs are covered by OPP in Armenia and Georgia, and about 20 percent in Lithuania (with direct payments for outpatient care and pharmaceuticals, the OPP share of the total healthcare expenditure is even higher). Given the significant difference between actual and desired salary levels for medical personnel, there are considerable financial incentives for medical staff to charge patients informal fees, which further increases the amount of direct OPP. This ultimately leads to disparity in affordability of and accessibility to healthcare services between different socioeconomic groups, which in turn contributes to disparity between their healthcare status. This means inequity not only in the healthcare system, but in health outcomes.

5. CONCLUSIONS: SUMMARY OF FINDINGS AND IMPLICATIONS FOR FURTHER REFORMS

5.1 Region-wide Inequity in Health and Healthcare:

One of the major findings of the study is that by the early 2000s inequity remained an unresolved issue for healthcare systems throughout CEE/CIS despite healthcare reforms implemented in most countries in the 1990s. A brief summary of the selected findings, describing the scale and profile of inequity is provided below:

- A positive correlation was found between income and health status in both high-income and low-income countries (Figure 4). This finding suggests that inequity exists in health status between different socioeconomic groups of the region's population.
- Socioeconomic status affects the health-seeking behavior of the region's population (Figure 5): 61 percent of those from the lowest income decile do not seek care when ill because they cannot afford it, compared with 33 percent from the highest income decile. This finding indicates that health-seeking behavior, based on socioeconomic status, might be one of the reasons contributing to the lower utilization of health services, especially by low-income groups. Thus, this finding indicates income inequity in accessibility of health services.
- It was revealed that accessibility of health services is determined not only by healthcare needs, but also by thee socioeconomic conditions of the consumers (Figure 6): 54 percent of those patients from the lowest income decile who are not eligible for publicly funded pre-paid healthcare services do not get any care (are refused to receive care) because they cannot afford to pay for it (even when they seek care); the figure is 22 percent for the highest income decile. This finding indicates income inequity in affordability of health services.
- It was also found that every fifth patient from the lowest income category who needs care gets it with delays even when (s)he can financially afford it (Figure 11). This finding suggests that income inequity also exists in quality of care.

The study also investigated the scale and prevalence of equity resulting from the reforms of the 1990s, and the ways the economic environments within which the health reforms were located affected equity. These findings are summarized in the following section.

5.2 The Impact of Health Reforms and the Economic Environment on Equity in Healthcare Finance

Evidence from Armenia and Georgia can be provided as an example justifying the importance of the design of healthcare reform on equity (i.e. how different types of reforms, implemented within rather similar economic environment, impact equity). By the early to mid-1990s, these two countries were in almost identical political, economic, social, and demographic conditions. Both countries launched healthcare reforms in 1995. The reform designs in the two countries were similar in many aspects, including the emphasis on increasing the overall efficiency of the system through downsizing the providers' sector, introducing market elements to the public healthcare system and changing the providers reimbursement mechanisms. One important difference in the design of health reforms was the introduction of an additional source of public revenue to the health system in the form of the mandatory social health insurance in Georgia, while this policy option was not implemented in Armenia. When comparing equity in OPP healthcare finance systems in these two countries during the pre-reform and post-reform periods, it was revealed that the Georgian system achieved improved progressivity (the Kakwani Index changed from -.32 in the 1990s to -.23 in the 2000s), while the Armenian system did not (from -0.28 to -0.58). At the same the two countries' indicators in other areas remained comparable in the early 2000s. This finding leads to the conclusion that different types of health reforms result in different outcomes in terms of equity.

The study also suggests that the economic environments within which health reforms were implemented have also affected equity. The impact of economic factors can be seen when comparing the equity indicators from Lithuania and Georgia—the two countries that followed quite similar healthcare reforms in the mid 1990s and which had similar economic conditions prior to reforms. Analysis shows that successful implementation of a social health insurance reform in Lithuania and its consequently higher level of public expenditure on health as a share of total health expenditure—one of the most important factors in achieving a more equitable healthcare finance system—was largely attributable to the fact that Lithuania managed to reverse the economic downturn of the early 1990s relatively quickly, achieving rapid economic growth by the and of the decade. Reduced unemployment and higher salaries (also meaning higher revenues for the social insurance fund) led to higher budgetary revenues, which in turn meant higher budgetary allocations for the health sector. On the other hand, in Georgia, where such economic progress has not taken place, the healthcare finance system, although designed in a similar mode as that in Lithuania, proved unsuccessful in terms of achieving equity. Public expenditure on health as a share of total health expenditure remained lower, despite the fact that additional public revenue sources were introduced. Thus, the bulk of health expenditure was paid out of pocket at the point of service—contributing to inequity.

However, a different trend can be seen when analyzing equity in terms of the impact of out-of-pocket health expenditures on poverty. As Table 16 below indicates, the Catastrophic Medical Expenditure analysis (CME) shows that Lithuania has the highest prevalence of CME during the post-reform period among the three countries, despite the fact that, as was described above, in terms of the OPP equity, Lithuania has achieved significant improvements compared to Georgia and Armenia. Not only has Lithuania shown the highest CME prevalence, but the indicator remained unchanged between the pre-reform and post-reform periods, while CME prevalence was reduced in both Armenia and Georgia. On the other hand, in Armenia, which had performed poorer in terms of OPP progressivity compared to the two other countries studied, the CME prevalence reduction was the most remarkable among the three and achieved the lowest level in the early 2000s.

Table 16

CME Incidence in Armenia, Georgia, and Lithuania (1990s and 2000s)

Country and Year		Percentage of Households with CME
Armenia	1990s	6.804
	2000s	16.172
	Total	11.770
Georgia	1990s	23.005
	2000s	19.112
	Total	21.079
Lithuanuia	1990s	33.254
	2000s	33.177
	Total	33.215

Source: National departments of statistics in Armenia, Georgia, and Lithuania.

Based on the above findings, and assuming that the countries studied are representative of the array economic conditions and health reforms in CEE/CIS countries with, it may be concluded that by the early 2000s, different types of inequity in healthcare financing occurred, at various degrees, in all types of the reformed health financing systems in the CEE/CIS region.

5.3 Main Causes of Inequities in Healthcare

As mentioned above, after measuring and analyzing the scale and profile of different types of inequities in healthcare, the causes of these inequities were sought.

5.3.1 Lack of Pre-Paid Funding

Empirical health system analysis revealed that one of the major causes leading to inequity in healthcare, regardless of the type of reforms implemented, was the lack of public, pre-paid funding for healthcare services. It was estimated that in Armenia and Georgia, public funds for health are budgeted to cover only 64 percent and 65 percent respectively of all costs incurred by inpatient healthcare providers, while in Lithuania the budget covers 81 percent. The remaining part must be covered by formal co-payments made as direct OPP at the point of service. However, there is a difference between the limited public budget and its actual execution, especially in Armenia and Georgia, where care providers do not receive full reimbursement from public funding sources. Therefore, the difference is often covered by informal payments, also made in the form of OPP at the point of service. In addition, informal gratuities paid to care providers remain a traditional form of payment, which increase the total level of the direct OPP even further. The data analysis collected at four medical facilities in each country revealed that medical personnel have a strong incentive to charge both formal and informal payments and to receive gratuities, because their salary levels are low. In Georgia, for example, some doctors' official salary level is below the officially established poverty line. We also estimated that in Lithuania and Armenia, doctors' salary levels are 15 percent and 14 percent, respectively, of the "desired" level, as indicated in interviews with doctors.

5.3.2 Inefficiency of Service Provision and Health Sector Management

The research also showed that inefficient allocation of non-monetary resources for healthcare provision is another cause contributing to inequity. Despite some attempts to downsize the supply of healthcare infrastructure and human resources, they are still excessive in all three countries. This is especially true regarding hospital beds and number medical personnel relative to population size and healthcare needs. Georgia and Armenia utilize only 30 percent and 40 percent of their hospital-bed supplies respectively. It was estimated that Georgia has 3.8 physicians per each patient-occupied bed and Lithuania has 1.7. The existing financial and contractual arrangements (e.g., "flat-salarying" of personnel and universal contracting of facilities) coupled with an excessive supply of resources, lead to disconnection between the inputs and outputs.

As a result, much funding is consumed without producing adequate results, either quantitatively or qualitatively.

In addition to being oversupplied, healthcare resources are also unequally distributed between urban and rural areas, thereby further increasing the excessive supply of resources in cities, while reducing them to inadequate levels in some rural areas. Lithuania has twice as many inpatient facilities in the capital city per 100,000 individuals than in the rest of the country, while in Georgia this ratio is 1.2. In Armenia, 4.5 times more hospital beds per 1,000 individuals are located in the capital city than in the rest of the country. Therefore, the unequal geographic distribution of resources for service provision can be considered an additional contributing factor to inequity in healthcare.

Inefficiency is also noted with respect to planning administrative/managerial healthcare resources, which in turn contribute to inequity in healthcare by taking unnecessary resources from service provision to system administration. Under a very tight administrative budget, the twofold separation of the health financing system from service provision, whereby health-funding agencies represent a separate, parallel administrative system within the healthcare sector separate from the MoH, contributes to the significant increase in overall administrative costs.

5.4 Implications for Further Health Reforms in the CEE/CIS Region

Based on the underlying causes of inequity in healthcare revealed by this research, it can be concluded that two main objectives of regional health reforms aimed at reducing the existing inequities should be: (i) to increase the amount of pre-paid sources of financing for healthcare services, and (ii) to refine the rationing and prioritizing of resource allocation in the healthcare sector. While in-depth analysis of all the policy options available for CEE/CIS countries is beyond the scope of this study, a brief discussion about the implications for further regional health reforms is provided, and some policy options that could potentially contribute to enhancing equity are listed. These policy options are identified based on the assessment of developments in health reform, the present status of the healthcare finance systems in the countries studied, as well as on the empirical analysis of underlying causes of inequity. Since the three countries operate three different types of healthcare finance systems currently prevalent region-wide, it may be assumed that some of the policy options relevant to the countries studied could also, to certain extent, be generalized. However, it must be emphasized that each country requires a unique approach in terms of policy design and implementation, based on a variety of political, social, economic, demographic, and other factors. The list of policy options are summarized in Table 17, followed by their brief descriptions:

Table 17
Policy Options for Enhancing Equity in Healthcare in CEE/CIS

Policy Options for Increasing Pre-Paid Revenue Sources for Healthcare	Policy Options for Refining the Rationing and Prioritization of Resource Allocation
• Introducing social health insurance • Increasing social health insurance premiums (in countries where social health insurance has been introduced) • Developing voluntary (private) health insurance system • Increasing tax collection rate by improving administrative means • Taxing the self-employed	• Reducing administrative cost of the system through abolishing health funds as separate organizational entities (shifting the functions to health ministries) • Enlarging risk/financial pools • Introducing selective contracting of providers • Downsizing provider sector • Improving cost-containment mechanisms through improving provider reimbursement methods • Reorienting healthcare system from curative care to disease prevention and health promotion

- Introducing social health insurance and/or increasing social health insurance premiums:

  For those countries that have not yet introduced social insurance, this step could be a possible policy choice. The introduction of social health insurance could increase the total public budget for the health sector in Armenia by 25 percent to 30 percent during the first two to three years, as happened in Georgia when social health insurance was introduced there, and where the level of economic development was comparable to that of Armenia. It is important to ensure that budgetary allocations for the health sector are not reduced parallel to the introduction of social health insurance.

  Furthermore, other countries in the region where social insurance has already been introduced might consider increasing the level of mandatory social health insurance contributions. Thus, for example, social health insurance contributions in Russia, Kazakhstan, and the Kyrgyz Republic are as low as 3.6 percent, 3 percent, and 2 percent, respectively, while this indicator reaches 13.5 percent in the Czech Republic, 14 percent in Slovakia, and 18 percent in Croatia.

- Voluntary health insurance:

  An additional increase in pre-paid health sector revenues (from private sources) could come from the development of a voluntary health insurance system. As was outlined in the respective sections of this report a high proportion of the total health expenditure in many CEE/CIS countries is paid out of pocket at the point of service. The introduction of voluntary health insurance would help by re-channeling a significant portion of OPP in pre-paid schemes. This would help to prevent unexpected expenditures in large amounts and would contribute to the reduction of Catastrophic Medical Expenditures (CME) and Impoverishing Medical Expenditures (IME). The development of private health insurance would not only increase total revenues to the health sector, but would also reduce the number of public funding consumers, since their coverage will be supplemented by private insurance. As a result, the amount of funding spent per publicly subsidized patient would be increased, which consequently would contribute to improving not only the quality of care, but also equity in affordability of health services.

- Taxing the self-employed:

  Increasing revenues to the health sector could be also achieved by effectively taxing the self-employed sector, which presently represents the majority of the informal sector in many countries of the CEE/CIS region. Lithuania, unlike Armenia and Georgia, seems to be succeeding in this direction. It would be worthwhile for countries where the tax collection rate among the self-employed is particularly low to consider the Lithuanian experience. Such successful experience of taxing the self-employed sector also exists in other CEE countries (e.g. Poland, Slovenia).

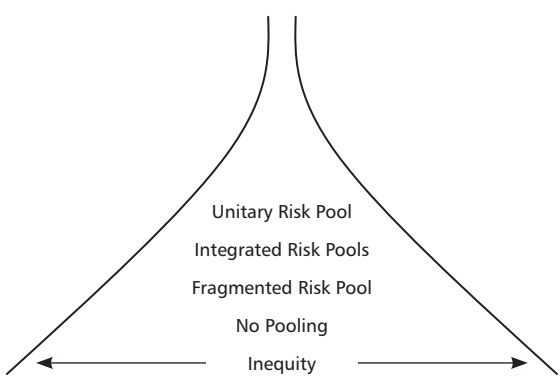
- Reducing administrative costs by abolishing health funds:

  The existence of a parallel administrative system in the form of health funds increases administrative costs. It is advisable to abolish health funds as separate organizational entities and transfer their functions to the MoH. Research estimates that this policy would reduce administrative costs in Lithuania by 14 percent, by 15 percent in Armenia, and as much as 56 percent in Georgia. This policy would not only increase the efficiency of the administrative system, but would also contribute to more effective management and planning. Currently, health funds are responsible for implementing programs designed by the MoH, with nominal participation on the part of the funds.

- Enlarging risk/financial pools:

  Overly fragmented risk (and financial) pools represent another factor contributing to the low efficiency of health finance systems. A large number of smaller risk pools, such as municipal health funds, as well as separate (sectoral or employment-based) healthcare systems for the railway, interior, defense, and other sectors, exhibit higher levels of variation in spending needs than a system with a small number of large risk pools. Furthermore, the level of uncertainty in predicting such needs will increase as the risk pool gets smaller, because of the increased importance of random fluctuations in the population at risk (Smith and Witter 2004). Therefore, the existence of smaller, fragmented risk pools in the selected countries makes it clear that such pooling is ineffective as well as inefficient. Risk-sharing arrangements between the pools are not successful due to the lack of technical capacity level of healthcare administrators, and also due to the political context (i.e., regions not willing to collaborate through sharing funds and risks). In addition, no effective mechanisms are in place to equally redistribute funds by cross-subsidizing poorer regions with additional allocations from richer regions. Similar evidence of the inefficiency of fragmented pooling is described in other regions of the world as well, both in developed and in developing countries (Smith and Witter 2004). Therefore shifting from fragmented pooling to either unitary or integrated pooling systems could be an advisable policy option. Smith and Witter (2004) describe four different models of pooling, their implications on health system performance, and practical issues related to their design and implementation.[6] The authors provide evidence that the unitary pooling system is the most equity-oriented, while the greatest inequity is produced by the "no pooling" system (based on individual OPP payments) (Figure 22).

Figure 22
The Pooling Pyramid[7]



However, they also argue that the unitary pooling system, although being the most equity-oriented, possesses its own potential problems: unless systems of provider reimbursement are chosen carefully, there may be an incentive for supplier-induced demand leading to inefficiency. Also, in the unitary pooling system it is important to ensure that all providers offer a uniform level of care in line with the chosen package. As the supplier-induced demand may lead to variations in the package received, in addition to being inefficient, this pooling system may also cause equity problems. The introduction of certain payment mechanisms can reduce the incentive to induce supply by providers, such as shifting away from fee-for-service to block contracts. This may partly explain why some unitary pooling systems, such as those in the former USSR, have often been associated with fixed payment systems such as salaries. However, this mechanism leads to their other difficulties, such as supplier-*suppressed* demand and reducing quality standards.

The above authors describe the integrated pooling system as a "safer" way of pooling in terms of ensuring equity. Under this arrangement fragmented risk pools exist, but financial transfers are arranged between them, so that some or all the variation caused by pure fragmentation is eliminated. The operation of a system of transfers between risk pools might take the form of central collection of revenues, and disbursement to risk pools on the basis of estimated spending need. In some countries revenues are collected by the risk pools themselves, and the funds are then transferred from low-needs pools to the high-needs pools, without the intervention of a central intermediary. Estonia for example, set up a decentralized health insurance fund with local collection powers in the first wave of health reforms in 1994. However, it was found to be hard to equalize between wealthier and less well-off regions, and therefore later reforms established a central health fund for revenue collection, from which per capita allocations of funds are made to local sickness funds.

- Selective contracting of providers:

  The health sector's efficiency can be dramatically increased by introducing selective contracting of care providers in countries where it does not exist and by improving it in the countries where it has been introduced but is not functioning properly. Currently, universal contracting in Armenia and Lithuania, as well as selective contracting in Georgia, result in an increase in the total fixed cost of service delivery. As estimated by this study, between 30 percent and 35 percent of total inpatient costs are fixed costs (i.e., those that are not directly related to service provision). Therefore, a shallow distribution of expenditure among too many providers through universal contracting results in an increase in the total fixed cost. Consequently, the resources spent directly on service provision are proportionally reduced, which eventually affects not only the quality of care, but also equity. However, introducing selective contracting incurs significant political

costs for the government. For this reason, this policy decision was so unpopular in some countries (e.g., Georgia) that the government did not resist the pressure imposed by the medical community and had to "soften" the policy. This meant having selective contracting as a formal policy on paper, but practicing universal contracting in reality. Therefore, it is important not only to introduce the policy, but also to design a proper plan for its smooth implementation. One such option is to involve the medical profession in developing providers' selection criteria, as well as in decision making about which providers to select for government contracts. In this case, the policy is not viewed as "imposed by the government." By assuming part ownership over the process, the medical community is more collaborative in implementing it.

In almost all countries of the region, professional associations (i.e., of doctors, dentists, nurses) have been created by the medical community with the aim of controlling matters such as licensing, medical audits, and guidelines for good practice. However, only a few governments have granted these associations the right to be actively involved in these processes (Shakarishvili 2005). Inevitably, this results in poor collaboration between the governments and medical community, which leads to general dissatisfaction with healthcare reforms.

- Downsizing the provider sector:

  The same is true for downsizing the provider sector, which could be another effective measure for increasing the sector's efficiency. Research has demonstrated that many countries in the region suffer from excessive infrastructure and personnel. Downsizing, understandably, has been the most painful and politically difficult component of the reforms. The ministries of health could have lightened the burden of implementing this reform by sharing the political costs for developing licensing and accreditation standards for healthcare facilities and personnel with the medical profession, and by involving the medical community in carrying out the facilities assessment and testing the professional competence of healthcare professionals. Despite the fact that the medical communities in many countries express interest in being involved in the reform processes, the level of their involvement generally has been low (Shakarishvili 2005). In addition to downsizing existing excessive supply of human resources, it is also important to reduce the number of entrants to medical schools. Among the three countries studied, this is especially a problem for Georgia, where currently about 40 private medical schools operate with a total annual intake of about 7,000 students. This imposes an enormous problem for the healthcare sector, not only because of a glut in the job market, but also due to the resulting low professional quality of medical graduates trained in these schools. Since all academic institutions of higher education, including medical schools, are regulated by the Ministry of

Education, addressing the problem of human resources requires not only active collaboration between the MoH and the medical community, but effective cooperation between various governmental agencies.

- Improving providers' reimbursement methods:
  An effective measure for increasing the efficiency of the system is to improve cost-containment mechanisms through modernizing providers' reimbursement methods. As the evidence from Armenia, Georgia, and Lithuania shows, the current method of fee-for-service financing, which is used for reimbursing inpatient facilities costs, motivates medical professionals to provide more care then is objectively needed (i.e., based on the clinical condition of a patient) because all diagnostic and treatment procedures are reimbursed separately. This results in over-performing the services and over-charging the funding sources. Shifting to global budget financing for inpatient care and to adjusted per capita financing for outpatient care would contribute to making clinical decisions financially neutral and would eventually reduce the overall cost of care.

- Enhancing prevention and health promotion:
  Despite some efforts to reorient the healthcare system from curative care to disease prevention and health promotion, the case-study analyses showed that a high share of the total health expenditure is spent on hospital care. As evidence from Lithuania shows primary care gets only about 15 percent of total public expenditure on health, while the evidence from Georgia indicates that public health services, including disease prevention, gets only 14.1 percent. Shifting the focus from curative to preventive care would mean not only fulfilling the main function of the healthcare system (i.e., to preserve the healthy status of the population, not only treat disease), but would also result in significant savings in health expenditure. It would also result in improving the overall health status of the population, which would eventually contribute to the economic growth. Thus, there would be not only a double effect on healthcare, but also a strong positive effect on the overall national development.

- Re-costing the benefit package:
  An important step for reducing direct OPP is to re-cost the services covered by the basic benefit package provided to the population either free or on a subsidized basis. Although this policy would not increase public revenue, it would increase the flow of public funds to individual providers. Public funders under-price hospital services in Armenia and Georgia by over 35 percent and in Lithuania by about 20 percent. Therefore providers are reimbursed for only a fraction of all costs that they incur. Patients must then pay the remainder. It

> is important to estimate the real cost of services and to reimburse the full cost, thus exempting providers from the necessity of charging informal fees and removing the incentive for them to do so. This step would also decrease formal co-payments in the form of OPP at the point of service.

All of the above policy options are based on technical assessments of healthcare systems and on needs as identified in our analysis. It must be emphasized, however, that the actual planning and implementation of reform policies are driven not only by research information, but (often primarily) by the political environment where the reforms are affected. A simple political framework for reforms is outlined by Walt and Gilson (1994), looking at the interaction between the context in which reform strategies are introduced, the process by which they are formulated/implemented, the content of the reforms, and the main parties involved. It is these structural forces which, as argued by Wilfsord (1994) "normally tie change to predetermined paths, but occasionally a strong conjuncture of events may provide a window of opportunity to override the legacy of history and strike out on a new trajectory." Walt (1996) provides a more detailed discussion about the role of politics in healthcare policy-making. The author explores the political system as a whole, starting with a systems approach, which stresses the demands made on the political system from political parties, pressure groups, research, individuals, and media. The analysis attempts to assess the interaction of all the different parts of the political system that affect health policy and explores the interface of policy-making and policy-makers through concentrating on institutions that make up the government, as well as on a vast array of different interest groups outside government, which want to put their point of view, or change the government's view, on particular policies. One of the main conclusions of this analysis is that:

> reform implementation cannot be seen as part of a linear or sequential policy process, in which political dialogue (needs assessment for policies and policy planning) takes place at policy formulation stage, and implementation is undertaken by administrators or managers. Experience suggests that often there is a major separation between policy formulation and implementation, with little focus on the realities of putting policy into practice (Walt 1996).

Weissert and Weissert provide an example of how a politically driven healthcare policy-making process evolves in the US:

> Struck either by the madness of what public spending for healthcare is doing to the domestic discretionary budget or by compassion, a presidential candidate will often feel compelled to push for a major health reform. Briefly, the public's interest quickens. Healthcare policy becomes salient. Reform is in the wind and reporters scramble to understand the issue. Interest groups with much to lose and little to gain by disrupting the status quo resist. The debate lasts until

> reality sets in—in a climate of skepticism over government's ability to fulfill its promises, the public becomes confused over whom to believe and withdraws its support. Reform zeal abates (Weissert and Weissert 1996).

Although this particular example refers to President Clinton's unsuccessful attempt to reform the US healthcare system in the early 1990s, it could also be used as an illustrative description of why many CEE/CIS governments have been facing challenges during the implementation of health reform policies: one of the undoubted achievements of the post-soviet transition in the region has been the application of a pluralistic approach to policy-making. Smith (1977) describes the pluralistic approach to policy-making as a process in which "the decision-making power is diffused throughout society: that no one group holds total power over others." Although as Walt (1996) argues, even in pluralistic policy-making the ultimate decision-making responsibility is upon the government, the decision-making process itself is influenced by all stakeholders. This has certainly been true in many CEE/CIS countries since the early 1990s. Therefore some governments in the region have not succeeded in implementing many technically-driven policy options, as they were not able to overcome the political barriers associated with bringing the policy ideas into actions.

Analysis of the post-soviet healthcare systems in the context of equity, after over ten years of health reforms, shows that intensive efforts aimed at reducing inequity in healthcare have resulted in limited achievements, and countries must intensify reforms in order to achieve notable success. It is clear that the implementation of many policy options suggested here would require a strong political will and efforts on the part of government, as they are likely to be perceived as unpopular by some powerful interest groups such as medical professionals and even by the general population. Such "high-risk" policies include further downsizing of the provision sector, selective contracting of providers, and increasing public revenues through increasing the level of existing taxes or through introducing new taxes. Therefore, an intensive social dialogue that explains the need and the importance of each policy decision should be an integral part of the reform process. Ministries of Health, as the driving forces behind reforms, can opt to share ownership of the reform process and consequently the political costs of the reform implementation with other governmental agencies (including local governments) and with other stakeholders, especially with the medical profession. This would take away the political pressure from the MoH and more equally redistribute the responsibility among all stakeholders.

All interest groups that are likely to be directly or indirectly affected by each specific policy should be understand what benefits would result from these policies. The current status of the healthcare system can be presented in terms of describing the deteriorated status of healthcare infrastructure and poor quality of care leading to poor health outcomes. The existing problems should be linked with chronic deficiencies in healthcare

budget and it should be clearly stated how the situation would be improved by additional sources and by improved rationing and prioritizing as results of the implementation of these reform policies.

Thus, in conclusion it can be stated, as Saltman put it, "while there is still a long way to go, a glance back at how healthcare has changed in CEE/CIS region during the last decade confirms how much more can be accomplished in the coming years" (1997). This statement could not more accurately describe the current situation now, especially within the equity context.

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ENDNOTES

[1] Throughout the report the group of countries termed "CEE/CIS" includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, the Kyrgyz Republic, Latvia, Lithuania, the Republic of Macedonia, Moldova, Poland, Romania, Russia, Serbia-Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

[2] See Preker (1993), Saltman (1997), Belli (2001), Bobak (2002), Fuenzalida (2002), McKee (2002), and Mossialos (2002).

[3] For example: Mastilica and Božikov *(*1999*),* Orosz (2000), Markota (2001), Sari (2001), Skolnikov (2001), Balabanova (2002), Ziglio (2003).

[4] Gaps in the graphs could be attributable to data collection errors.

[5] "Poverty lines" in the chart correspond to the measures used in the official country statistics for assessment of poverty rates.

- In Georgia and Armenia, an absolute poverty line is used that corresponds to the official subsistence minimum (minimum food consumption basket).
- In Lithuania, a relative poverty line (50% of the average consumption expenditure) is used because the officially set minimum subsistence level (MSL) is considered too low.

[6] These are: no risk pool—individuals are responsible for meeting their healthcare costs when they arise; unitary risk pools—revenues generated from all sources (general taxation, social insurance, user charges are placed in a single central pool); fragmented pools—more than one risk pool exists in the country (geographic, employment-based, or competing insurance funds); integrated risk pools—financial transfers are arranged between fragmented pools.

[7] Adopted from Smith and Witter (2004).

Index of Terms

How have health and economic reforms implemented in Central and Eastern European countries in the 1990s—in what was the first decade of the post-Soviet transition—affected one of the most important aspects of any healthcare system—equity in its financing?

This study seeks an answer in the analysis of out-of-pocket payments (OPP) for health services on poverty. Statistical analysis of equity in healthcare at the aggregate regional level is used to identify the regional trends and patterns. This analysis is based on household health survey data collected in 15 countries of the region in the early 2000s.

The study goes on to provide more detailed statistical measurements of equity in healthcare financing, focused on out-of-pocket payments, in three selected countries—Armenia, Georgia, and Lithuania. These analyses measure the progressivity of healthcare financing systems as well as the impact of out-of-pocket health expenditures on households' poverty levels. Six alternative and complementary statistical methods are used, including the Kakwani Index, the Impoverishing Medical Expenditure Index, Catastrophic Medical Expenditure Index, and others. These measurements are performed twice in each country, based on the data collected in the early 1990s and early 2000s. Thus, the analysis allows for not only cross-country comparisons, but also for cross-time comparisons within each country to compare the pre-reform and post-reform status of equity in health financing.

The study also provides comparative health systems assessment in the selected countries, which is aimed at "diagnosing" the underlying causes of inequities and answers the question—how equity differs in three different types of the reformed post-Soviet healthcare financing systems.

And finally, the report suggests what implications the findings may have on further health reforms aimed at enhancing equity in health care in CEE/CIS countries.

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