The impoverishing effect of adverse health events: Evidence from the Western Balkans[*]

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Abstract

In this paper, we investigate the extent to which the health systems of the Western Balkans (i.e. of Albania, Bosnia and Herzegovina, Montenegro, Serbia and Kosovo) have succeeded in providing financial protection against adverse health events. We examine disparities in health status, healthcare utilization and out-of-pocket payments for healthcare (including informal payments), and explore the impact of healthcare expenditures on household economic status and poverty. Data are drawn from LSMS surveys and methodologies include (i) generating a descriptive assessment of health and healthcare disparities across socioeconomic groups, (ii) measuring the incidence and intensity of catastrophic healthcare payments, (iii) examining the effect of out-of-pocket payments on poverty headcount and poverty gap measures, and (iv) running sets of country-specific probit regressions to model the relationship between health status, healthcare utilization and poverty. On balance, we find that the impact of health expenditures on household economic wellbeing and poverty is most severe in Albania and Kosovo, while Montenegro's health system seems more effective in providing financial protection.

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1. Introduction

The health sectors of the countries of the Western Balkans are all undergoing major reforms. One of the major challenges is to protect households from incurring too onerous a financial burden in terms of healthcare payments, while assuring sustainable financing systems to provide high quality healthcare.

The financial implications of ill health can be severe and major illness is widely acknowledged to be one of the most sizeable and least predictable shocks to the economic well-being of households. It imposes both a direct cost, in terms of the price of accessing healthcare, and an indirect cost, in terms of the loss of income associated with reduced labor supply and productivity. Since out-of-pocket payments are the most important means of financing health care in most developing countries, large and unpredictable health payments can expose households to considerable financial risk. In the absence of an adequate system of social protection, illness can take a large toll on household well-being: resource-poor households may be compelled to trade the future welfare of all its members against current access to healthcare for one of them, or opt for inappropriate, ineffective care or an insufficient quantity of care, and in so doing, risk a vicious circle of poverty and illness (Gertler and Gruber 2002).

The objective of this paper is to assess the extent to which the current health systems of the countries of the Western Balkans are able to protect households from the impoverishing effects of adverse health events. Recent household surveys from Albania, Bosnia and Herzegovina, Montenegro, Serbia and Kosovo[3] are used to estimate the effect of healthcare expenditures on economic status and poverty, as well as to explore economic inequalities in health status, healthcare utilization and healthcare expenditure.

The evidence of the effects of healthcare expenditure on consumption and poverty in low- and middle-income countries has been growing over the past decade. Gertler and Gruber (2002), for instance, studied the impact of health shocks on households' consumption patterns in Indonesia, providing evidence that illness reduced labor supply and household income. Similarly Wagstaff (2005) finds evidence that health shocks are associated with a reduction in consumption in Vietnam, in particular for uninsured and better-off households. Dercon and Krishnan (2000) show that in Ethiopia the consumption risks associated with health shocks are not borne equally by all household members. In addition, estimates are available for at least six Latin Amerinca countries[4] (Baeza and Packard 2005), China (Lindelow and Wagstaff, 2005), Thailand (Limwattananon 2007), and fourteen Asian countries and territories[5] (Van Doorslaer *et al.* 2007). A recent WHO article, using survey data from 89 countries, finds that 3% of households in low-income countries, 1.8% of households in middle-income countries and 0.6% of households in high-income countries incur catastrophic health expenditures (Xu *et al.* 2007)[6]. To the best of our knowledge, the estimates presented here are the first available for the Western Balkans.

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[3] Kosovo is a province of Serbia, administered by the United Nations, under UNSC resolution 1244. For the purposes of this paper, it is treated as a separate unit of analysis. The Former Yugoslav Republic of Macedonia was excluded from the analysis because its last LSMS-type household survey was conducted in 1996. Since then, only household budget surveys have been completed but they do not contain the type of health expenditure data needed for comparative analysis.

[4] These include Argentina, Chile, Columbia, Ecuador, Honduras and Mexico.

[5] These include, among others, Bangladesh, China, India, Nepal, Vietnam, Sri Lanka, Thailand, Malaysia and Kyrgyz Republic.

[6] They consider catastrophic expenditure as having occurred when a household spends 40% of its capacity to pay (defined as total spending minus estimated food needs) on out-of-pocket health payments.

2. A model of health related behavior and household wellbeing

In this section we model the agent behavior using a simplified utility model that can be traced back to Grossman's (1972) seminal model of demand for health. We assume that an individual's (or a household's) welfare depends on labor supply, *L*, the consumption of purchased goods, *C*, health status, *H*, and is conditioned on other observable characteristics (such as schooling and family background), *Z*, as well as unobserved characteristics including tastes μ.[7]

$$U = U(C, L, H, Z, \mu) \qquad (1)$$

Allocations are constrained by budget and time. Suppose that the individual works for a wage, *w*, and that assets and non-labor income is *I*, the full income constraint is

$$p_c C + p_h H = wL + I \qquad (2)$$

where *Pc* and *Pn* are the prices of non-health and health consumption goods respectively.

If the latter is the only constraint and λ is the marginal utility of income, the first-order condition with respect to health status leads to the standard relationship where the marginal utility of health must equal its cost:

$$\frac{\partial U}{\partial H} = \lambda p_h$$

Accordingly, a person determines his optimal stock of health capital by equating the marginal efficiency of this capital to its user cost in terms of the price of gross investment. One prediction of the model is that each person has a negatively inclined demand curve for health capital which shifts upward in response to increases in the wage rate. Thus, *ceteris paribus* (i.e. for given age, level of education, health taste or inherited health stock etc), those who experience adverse health events are willing to incur out-of-pocket expenditures to improve their health status, and those who are economically better-off demand a larger optimal stock of health.

However, a reverse relationship between health and income may arise. Better health, for example results in higher level of labor supply, increased productivity and higher income. The latter, on turn, may be invested in health by increased spending on the quality and quantity of health-augmenting inputs.
Assuming that an individual's real wage, *w*, is equal to her costlessly observed marginal product, the standard earning function varies with health status, *H*, other individual traits, S, including schooling human capital, family background and local community infrastructure, and unobservable factors, α, such as ability or school quality, and random fluctuations, e_w:

[7] It should be noted that in Grossman model the demand for medical care is a *derived* demand due to the presumed connection between medical care and health inputs (e.g. some purchased goods like foods may be health inputs). Accordingly, estimating the demand for medical care goes through the underlying process producing health and how the consumer of health learns about this complex long-term health production process. These elements are not considered in the theoretical modeling here as they are beyond the scope of the paper, but indeed health status has to be seen as a by product of the health seeking behavior.

$$w = w(H, S, \alpha, e_w) \qquad (3)$$

If we include the wage constraint in the allocation problem (i.e. the individual maximizes (1) subject to (2) and (3)), we see another point emerging from the first-order condition:

$$\frac{\partial U}{\partial H} = \lambda(p_h - \frac{\partial w}{\partial H})$$

At a given health cost, if health status rises wages, then the shadow price of health care declines, inducing a greater demand for health. It has been argued that there are nonlinearities in this link as the shadow price decreases more for people in worse health (Strauss and Thomas 1998). This entails important distributional consequences if the poor are most likely to be below the health threshold level.

By inverting the last equation we obtain a reduced form demand function for health care:

$$H = H(p_c, p_h, Z, S, \mu, \alpha)$$

which implies that the demand for health will depend on its cost, but also on non-health consumption, individual and household characteristics (such as schooling and family background), and unobserved characteristics. The presence of α in both the wage function and the health demand function captures the simultaneity problem that is central to the difficulty in disentangling the causal effects of health on productivity[8]. Therefore, a reduced form estimation cannot provide an unambiguous determination of whether health does influence economic well-being. However, it does provide an indication of the (total) effect of health prices and the health environment on household wellbeing.

Our purpose in this paper is not to tackle the causality issue, but rather to shed some light on the link between health and poverty in the Western Balkans. We do this by taking into account the main socio-demographic variables that affect health care demand. It should be noted that variables like age and education enter the theoretical model through their impact on either the cost of health capital or its marginal productivity. Thus, there are important implications to be tested concerning the effects of socio-demographic characteristics, along with economic ones, on health status and the utilization of health care[9].

3. Data, measurement and methodology

3.1 Data

[8] On the other hand, the extent to which households are able to insure consumption against illness depends on the ability to reduce the incidence and severity of illness shocks. For example, as argued by Gertler and Gruber (2002), households may be more able to effectively insure against frequently-occurring, small health shocks than large rare illnesses.

[9] Indeed, one prediction of Grossman's (1972) model is that if the rate of depreciation of health increases with age, at least after some point in the life cycle, then the quantity of health capital demanded will decline over the life cycle. At the same time, provided the elasticity of the marginal efficiency of health capital is less than unity, expenditure on health care will rise with age.

Data are drawn from recent household surveys, either official Living Standards and Measurement Surveys (LSMS) or surveys that are considered LSMS equivalents. The LSMS surveys are multi-topic household surveys that include data on a wide range of demographic and socio-economic characteristics. The typical health module provides information on (i) health status, (ii) the utilization of health services, (ii) health expenditures, and (iv) insurance status. The depth of the health section varies somewhat across the surveys considered, with the most detailed information available for Albania and the least detailed for Montenegro, but an effort has been made to recode data so that variables are as homogenous as possible across data sets.

Data for Albania are from 2005, for Bosnia and Herzegovina from 2004, for Montenegro from 2004, for Serbia from 2003, and for Kosovo from 2000. Sample size, for the sample on which there were observations for all variables included in the probit analyses, is 15,434 individual in Albania, 2,325 in Bosnia and Herzegovina, 8,205 in Montenegro, 7,871 in Serbia, and 16,013 in Kosovo.

Throughout the analysis, sample weights are used to produce population estimates at the country-level.

Summary statistics for key variables are presented in the Appendix, Table A1.

3.2 Measurement

Health status is a complicated, multi-faceted phenomenon that is measured with substantial error, especially when health status is derived from subjective responses by individuals in a sample survey. The degree of measurement error may also vary systematically by factors such as the age and gender of the respondent and the nature of the illness. In these surveys, health status measures are self-reported, and a distinction is made between the severity of illness, namely chronic and sudden/acute[10].

Information is available in all surveys on the utilization and costs of different types of health services, as well as medicines, although the types of services listed sometimes differs across surveys. Also, information on health insurance is not available for Serbia and Kosovo (which has no social health insurance scheme).

In most places (i.e. in Albania, Serbia and Kosovo), the questionnaires distinguish between formal health payments, transportation costs and informal health expenses. Yet, although specific questions were included in the LSMS on both formal charges for consultations and the value of unofficial 'gifts' (in cash or in kind) made to the medical staff, it is likely that at least some respondents may not know whether the formal charges they paid were 'official' or not. Under-estimation of out-of-pocket payments for drugs and medical supplies is less likely because all LSMS surveys distinguish between payments for drugs covered under a prescription and other drugs.

A last source of heterogeneity across the health modules in the household surveys is the period under analysis. Most questions refer to health-related events in the past 4 weeks, but some refer to the past 12 or 14 months. An effort has been made to homogenize the time span, but imputed figures should be treated with caution because health care utilization due to an acute illness shock may vary over time.

[10] The actual survey questions on health status, health care utilization and health insurance are given in Table A2.

There are many approaches to measuring living standards, including direct approaches (e.g. income, expenditure, or consumption) and proxy measures (e.g. the construction of asset indices). We use total per capita expenditure as the main living standards measure, a decision that is driven by data availability. In order to obtain this measure, households are ranked by real total expenditure (consisting of all types of consumption by the households including food, non-food, utilities and education expenses, as well as the use value of durable goods owned by the household), adjusted for the household size. Quintile measures of living standards, in which households are classified into five equal-sized per capita consumption quintiles, are also used. The concepts "poor" and "non-poor", when used in this paper, will refer to those below and above the National Poverty Lines calculated in local currency (LCU) by the World Bank Poverty Assessment team (and henceforth referred to as the PA poverty line). To facilitate cross-country comparisons, the Appendix (Tables A3 and A4) also reports results using the single international PPP-based poverty lines of $2.15/day in LCU/day/person)[11].

3.3 Methodology

This paper has three main analytical sections. It commences by examining economic disparities in health status and healthcare utilization, using both descriptive statistics and a probit model (Section 4). Then, the magnitude of, and disparities in, out-of-pocket payments for healthcare (including informal payments) are explored, together with the impact of these payments on household economic status and poverty (Section 5). With respect to the latter, two different methodologies are used to assess the impact of health spending on poverty: (i) the incidence and intensity of catastrophic healthcare payments, and (ii) the effect of out-of-pocket payments on poverty headcount and poverty gap measures. Finally, a set of country-specific probit regressions are used to model the relationship between health status, healthcare utilization and poverty (Section 6).

4. Disparities in health status, healthcare utilization and health insurance coverage

There is substantial cross-country variation in self-reported morbidity, including both chronic and acute illness. Table 1 shows that while only 6% of Montenegrans report a chronic health condition, about 14% of Albanians, 22% of Serbians, and 25% of people living in Bosnia and Herzegovina do. For those countries for which data are available, the pattern of acute morbidity reveals a similar ranking, with the lowest incidence of acute illness in Montenegro (7%), followed by Albania (8%) and Serbia (14%).

There is substantial variation in the proportion of the population that sought any type of health care in the four weeks prior to the survey. As few as 9% of the population of Montenegro sought any type of health care in the four weeks prior to the survey, but the figure rises to 14% in Albania, hovers around a fifth of the population in Kosovo and Serbia, and reaches almost a third of the population in Bosnia and Herzegovina[12]. Around 4-5% of people in each country reported being hospitalized in the previous year. Healthcare utilization appears to be higher in countries with a higher incidence of illness, but since morbidity data is self-reported the causality could lie in either direction. Again, rates vary by age and gender, with women more likely to seek medical

[11] This measure is not available for Kosovo.

[12] Part of the reason why the figure for Montenegro may be lower than for other countries is that the survey was conducted only in May, and may be biased downwards by seasonal variations in the incidence of illness. This should be bear in mind throughout the whole analysis.

care than men, but gender differentials in health-seeking behavior disappear once differential morbidity is controlled for.

As many as 95% of Montenegran households are covered by health insurance. The figures are much lower in Bosnia and Herzegovina (60%) and especially in Albania (37%), despite social health insurance schemes.

4.1 Demographic and geographic disparities

Health status varies by age and gender in each country. Not surprisingly, both chronic and acute morbidity increase with age. Women generally report higher levels of chronic disease and acute morbidity than men in the same age group. Yet, male children (under the age of 15 years) in all countries generally have a higher reported incidence of both chronic and acute disease than females in all countries. One explanation for this finding is that male children have intrinsically poorer health status than female children. However, since it is the parent or guardian who reports the health status of individuals below 15 years old, an alternative explanation is that the health status of young males is systematically perceived more 'carefully' than that of female children, which may have consequences for female health into adulthood.

Overall, there are only very small differences in reported chronic illness between people living in rural areas and people living in urban areas, but the incidence of acute illness is higher in rural areas than in urban areas in Albania and Serbia. There are no clear systematic differences in health care utilization between urban and rural areas that hold across countries. Utilization of outpatient health services appears to be greater among the urban population than the rural population. Hospitalization does not vary much across urban and rural area in Albania and Montenegro, but in Bosnia and Herzegovina, hospitalization is greater in rural areas, and in Kosovo, it is greater in urban areas. Health insurance coverage differs significantly between urban and rural regions in both Albania and Bosnia and Herzegovina, but not in Montenegro.

4.2 Economic disparities

In Table 3, the relationship between the economic status of the household, on the one hand, and health status and health seeking behavior, on the other hand, is examined. One cannot generalize about the relationship between economic status and healthcare utilization. While in Serbia and Kosovo, there is not much variation in hospital utilization across consumption quintiles, in Albania and Bosnia and Herzegovina healthcare utilization falls slightly as economic status increases. Utilization of treatment for acute care is more closely related to economic status than utilization of hospital care, and in all countries utilization of outpatient care tends to increases as economic status improves. The extent of variation across quintiles differs from place to place, though: it is very small in Albania, in Serbia and Kosovo, but nearly doubles in Montenegro.

Table 1 Self-reported morbidity and healthcare utilization by age and gender (%)

			Suffers from a chronic illness or disability*	Been ill in last 4 weeks	Sought (outpatient) medical care in last month**	Hospitalized in the last year***	Has health insurance
Albania	*Men*	*0-15*	2.46	11.65	9.77	2.84	36.10
		16-64	12.48	4.22	8.46	2.83	33.36
		65+	55.54	16.65	39.24	9.39	69.80
	Women	*0-15*	1.68	9.87	8.38	2.06	35.87
		16-64	15.95	7.84	14.97	5.60	33.42
		65+	63.72	15.82	43.83	6.81	63.95
	Total		***14.38***	***8.36***	***13.50***	***4.04***	***36.95***
	Obs. (unweighted)		*17,304*	*17,304*	*17,304*	*17,304*	*17,304*
Bosnia and Herzegovina	*Men*	*0-15*	3.41	*na*	15.79	0.00	66.74
		16-64	15.78	*na*	17.76	3.23	56.43
		65+	59.87	*na*	48.16	11.12	*64.32*
	Women	*0-15*	0.00	*na*	12.61	0.00	70.93
		16-64	20.30	*na*	37.46	5.47	60.25
		65+	76.02	*na*	54.95	5.59	*61.73*
	Total		***25.37***	***na***	***30.73***	***4.80***	***59.16***
	Obs. (unweighted)		*9331*	*9331*	*9331*	*9331*	*9331*
Montenegro	*Men*	*0-15*	5.40	4.60	6.03	*Na*	93.85
		16-64	5.50	5.90	7.91	*Na*	95.68
		65+	15.00	18.00	15.73	*Na*	95.26
	Women	*0-15*	4.80	3.40	7.01	*Na*	93.01
		16-64	5.10	6.30	9.05	*Na*	95.50
		65+	23.00	23.00	19.98	*Na*	95.72
	Total		***6.30***	***6.60***	***8.61***	***Na***	***94.95***
	Obs. (unweighted)		*8889*	*8889*	*8889*	*8889*	*8889*
Serbia	*Men*	*0-15*	4.17	11.78	17.37	3.96	*Na*
		16-64	15.83	9.94	12.72	2.68	*Na*
		65+	56.98	23.56	37.43	11.19	*Na*
	Women	*0-15*	2.88	10.26	16.09	2.57	*Na*
		16-64	20.54	15.11	21.61	4.66	*Na*
		65+	66.75	28.64	44.17	8.51	*Na*
	Total		***22.12***	***14.35***	***20.73***	***4.52***	***Na***
	Obs. (unweighted)		*8027*	*8027*	*8027*	*8027*	*8027*
Kosovo	*Men*	*0-15*	*na*	*na*	13.79	3.62	*Na*
		16-64	*na*	*na*	18.33	24.82	*Na*
		65+	*na*	*na*	5.49	4.83	*Na*
	Women	*0-15*	*na*	*na*	15.02	3.13	*Na*
		16-64	*na*	*na*	20.36	21.12	*Na*
		65+	*na*	*na*	5.72	6.01	*Na*
	Total		***na***	***na***	***17.85***	***4.82***	***Na***
	Obs. (unweighted)		*17917*	*17917*	*17917*	*17917*	*17917*

* The precise definition of morbidity concepts differs somewhat across survey instruments. Table A2 in the Appendix lists the actual questions asked in survey.

**Percentages refer to the past 4 weeks for all except Bosnia and Herzegovina where they refer to the past 14 months.

***Percentages refer to the past 12 months for all except Bosnia and Herzegovina where they refer to the past 14 months.

Table 2 Self-reported morbidity and health care utilization by urban-rural location (%)

TABLE 2:	Albania			Bosnia and Herzegovina			Montenegro		Serbia			Kosovo	
	Tirana	*Other urban*	*Rural*	*City*	*Suburban*	*Rural*	*Urban*	*Rural*	*Belgrade*	*Other urban*	*Rural*	*Urban*	*Rural*
Suffers from a chronic illness or disability	14.07	14.46	14.41	30.00	27.00	29.00	6.90	5.30	24.59	20.43	22.48	*na*	*na*
Been ill in last 4 weeks	6.92	8.50	8.58	*na*	*Na*	*na*	6.90	5.90	11.85	14.44	15.46	*na*	*na*
Sought (outpatient) medical care in last month *	14.29	14.05	13.07	37.38	42.01	34.45	8.89	7.95	21.86	20.94	20.00	17.82	17.81
Hospitalized in the last year**	3.48	3.87	4.24	5.47	6.81	6.90	*na*	*na*	4.46	3.97	5.04	5.49	4.21
People with health insurance	57.34	51.02	26.21	68.20	69.66	53.55	95.13	94.60	*na*	*Na*	*na*	*na*	*na*

*Percentages refer to the past 4 weeks for all except Bosnia and Herzegovina where they refers to the past 14 months.
**Percentages refer to the past 12 months for all except Bosnia and Herzegovina where they refers to the past 14 months.

In Albania, Serbia and Montenegro (i.e. the three countries for which acute illness data are available) the incidence of acute illness falls as economic status rises, in general, but in Serbia and Montenegro, the incidence of acute illness rises sharply again in the richest quintile where a very high incidence of illness is reported. This result could be explained by the possibility that those in the richest quintile are more knowledgeable about their health status because they can afford to have their illnesses diagnosed. There is no clear variation in the incidence of chronic illness across quintiles. This may be the direct consequence of the difficulties of access to preventive health services by poor people, leaving them more vulnerable to illness. Yet, factors that influence illness perception and health seeking behavior are complex. One argument proposed in the literature is that the very poor, lacking the resources to access medical care easily, define illness more narrowly than those able to afford treatment (Falkingham, 2004). The poor may also defer health care utilization until their illness is severe.

There is a very strong direct relationship between economic status and health insurance in all countries for which the information is available: a greater percentage of people in the upper quintiles have health insurance than in the lower quintiles.

Table 3 Self-reported morbidity and health care utilization, by economic status (%)

		Quintiles of per capita consumption				
		Poorest	**2**	**3**	**4**	**Richest**
Albania	Suffer chronic illness	13.41	15.39	14.29	15.07	14.30
	Suffer acute illness	8.69	8.69	8.42	7.69	7.65
	Sought medical assistance / outpatient*	11.75	15.24	13.58	14.05	13.86
	Hospitalized in the last year**	4.38	4.47	3.87	3.54	3.34
	People with health insurance	27.77	34.79	43.01	42.37	47.10
Bosnia and Herzegovina	Suffer chronic illness	26.00	24.00	25.00	28.00	26.00
	Sought medical assistance / outpatient*	22.34	26.81	32.46	34.29	39.61
	Hospitalized in the last year**	4.41	4.78	4.55	5.98	4.20
	People with health insurance	47.84	56.87	59.05	62.35	71.72
Montenegro	Suffer chronic illness	5.30	5.10	7.50	5.10	8.50
	Suffer acute illness	8.00	8.00	6.50	4.10	7.20
	Sought medical assistance / outpatient*	7.50	8.12	8.27	5.67	14.30
	People with health insurance	95.22	94.57	93.22	94.10	97.98
Serbia	Suffer chronic illness	21.34	22.76	24.13	20.80	21.55
	Suffer acute illness	15.02	15.11	13.22	12.05	16.37
	Sought medical assistance / outpatient*	18.88	20.48	21.79	20.56	22.07
	Hospitalized in the last year**	4.67	3.94	5.23	4.57	4.17
Kosovo	Sought medical assistance / outpatient*	17.75	16.44	17.42	18.42	19.73
	Hospitalized in the last year**	4.68	4.51	4.26	4.82	5.42

*Percentages refer to the past 4 weeks for all except Bosnia and Herzegovina where they refer to the past 14 months.
**Percentages refer to the past 12 months for all except Bosnia and Herzegovina where they refer to the past 14 months.

An examination of the relationship between economic status and the *type* of health care utilized (Table 4) shows that, with occasional exceptions, the poor systematically use less use of almost every type of health service that those who are better-off. These services include both public and private care, such as public ambulatory care, providers of alternative medicine, inpatient hospital care, private doctors, private nurses and dentists. A noteworthy exception is Montenegro where a greater percentage of the poor than the rich utilize hospital care, but this could be the result of the fact that the hospital care variable for Montenegro also includes outpatient care, for which private doctors are a substitute. With the exception of Montenegro, the consumption of non-prescription medicine is also significantly higher among the non-poor than the poor; for some countries, the magnitude of difference is substantial, e.g. in Serbia where consumption is double. Table A3 in the Appendix shows the distribution of health care utilization by poverty status, using the single international poverty line.

Table 4 Type of health care utilization by poverty status using PA poverty lines (%)

	Albania		Bosnia and Herzegovina		Montenegro		Serbia		Kosovo	
	Non-poor	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**
Public ambulatory	9.53**	8.28**	36.67***	27.96***	70.41	61.6	22.74**	17.03**	15.98**	14.70**
Hospital (outpatient)	3.54	3.58	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Popular doctor/alternative medicine	0.37**	0.16**	2.44***	0.95***	*na*	*na*	1.01	0.58	*na*	*na*
Private doctor	1.39*	0.99*	8.39***	4.34***	3.41	0.54	2.37***	0.48***	2.83	2.88
Private nurse	1.38	1.41	0.67	0.26	1.08	0.00	*na*	*na*	1.00	1.15
Health service abroad	*na*	*na*	*na*	*na*	*na*	*na*	0.13	0.00	*na*	*na*
Other	*na*	*na*	15.49***	10.78***	3.90*	0.00	*na*	*na*	2.75	2.84
Non-prescription medicines	16.32***	12.40***	42.98***	36.49***	0.02**	0.01**	22.48***	10.24***	10.28***	8.52***
Hospital (inpatient)*	3.93	4.37	4.99	3.93	21.20***	37.86***	5.09	3.94	5.1	4.69
Dentist	22.03***	12.44***	28.13***	19.00***	0.02***	0.00***	7.54***	2.72***	*na*	*na*
PA Poverty Line	5145,33 New Lek/pc /per month		2223.146 KM/pc/ per year		90.34 Euro/pc/ per month		4111.31 Dinars/pc/ per month		106.689 DM/pc/per month	

Note: *In Montenegro, the data include outpatient care at hospitals.

* significant at 10%; ** significant at 5%; *** significant at 1%

5. Out-of-pocket expenditures on health care and their effect on poverty

Out-of-pocket expenditures constitute a fairly large share of total health care expenditure in the Western Balkans. The magnitude of out-of-pocket expenditure is driven by factors such as the level of co-payments, the prevalence of informal payments, the use of private providers and coverage by social health insurance. In some countries, and for some population groups, the magnitude of these expenditures is sufficient to have a substantial impoverishing effect on households.

5.1 Geographic and economic disparities in out-of-pocket expenditures

The available data enable one to distinguish between expenditure at different types of health care facilities, such as public, private, inpatient and out-patient, and also between different types of expenditures, namely general health care expenditure (including primarily medicines, along with treatment and laboratory costs), transportation expenditure and informal expenditures (which are unofficial, but typically not voluntary)[13].

The amount paid for health care services varies across types of expenditures and regions (see Table 5). While publicly-provided health care is generally less expensive than private care, health care expenditure at public facilities can be considerable, especially for poor people living in rural or remote regions. On average, people living in rural areas spend more on public healthcare and inpatient hospitalization than people living in urban areas. Moreover, people living outside the city bear significantly higher transportation costs and make larger informal payments.

Several factors may explain the difference in public health expenditure by people in urban areas compared to those in the countryside. Data presented earlier in this paper (see Table 2) showed that in all countries (except Bosnia and Herzegovina), people living in rural areas have higher rates of inpatient utilization. Higher out-of-pocket payments in rural areas could also be explained by the fact that insurance coverage tends to be lower in rural areas, at least for the countries for which data are available. Another possibility is that people in urban areas have lower health expenditure in the public sector because they use private facilities instead – indeed, data show that people in urban areas spend more on private healthcare, on average, than those in rural areas. Structural factors affecting the availability of healthcare and the costs of healthcare inputs may also result in a lower cost of healthcare in urban areas than in rural areas[14].

[13] Distinguishing between formal and informal payments for health services is challenging. Although the LSMS includes specific questions to distinguish between official charges for consultations and the value of unofficial 'gifts' made to the medical staff, it is likely that some respondents could have been unclear whether 'charges' demanded by medical personnel prior the consultation were 'official' (i.e. legally sanctioned) or not (alternatively, people report paying an official fee, which is likely to be in fact unofficial

[14] In Albania for example, at the beginning of the transition, many doctors left rural and remote areas attracted by more lucrative opportunities in the cities, especially Tirana. Moreover, the financing of the whole system is set up so as to pay for the salaries of all doctors, nurses, midwives and paramedics in some regions but not in others; the same holds true for insurance. This results in large variations in healthcare costs across regions (see World Bank 2003).

Table 5 Health care expenditure by region, among those who seek care

	Albania (monthly averages in New Lek)				**Bosnia and Herzegovina*** (monthly averages in KM)				**Montenegro** (monthly averages in Euro)			**Serbia** (monthly averages in Dinars)				**Kosovo** (monthly averages in DEM)		
	Tirana	***Other urban***	***Rural***	***ALL***	***City***	***Sub-urban***	***Rural***	***ALL***	***Urban***	***Rural***	***ALL***	***Bergrado***	***Other urban***	***Rural***	***ALL***	***Urban***	***Rural***	***ALL***
Exp. on public providers	2117.26	2078.43	2438.18	2289.65	5.23	6.61	9.56	6.68	10.90	10.91	10.90	527.23	600.97	742.79	648.05	35.45	30.80	33.67
Exp. on private providers	4201.27	2106.41	1706.20	2025.59	17.20	10.64	12.23	14.76	10.77	6.39	9.80	1694.30	3583.94	2420.24	2738.76	58.77	47.84	55.10
Exp. for health abroad	*Na*	*Na*	*Na*	*Na*	*na*	*Na*	*na*	*na*	*na*	*Na*	*na*	145.83	16.40	62.54	62.59	*na*	*Na*	*na*
TOT exp. for out-patient visits	2507.37	2294.00	2547.52	2467.92	7.72	7.06	11.51	8.61	10.85	9.23	10.50	848.79	930.36	1084.39	975.74	45.07	37.38	42.17
Exp for in-patient visits (hospital)	4630.09	2074.24	2489.24	2598.41	7.65	26.69	11.97	12.82	2.65	7.96	4.37	1003.89	301.80	292.22	435.68	39.03	23.53	33.04
Exp. for medicines w.p	593.30	458.87	418.92	449.88	4.98	3.55	3.09	4.18	5.73	6.10	5.86	432.87	347.33	420.47	392.63	13.11	11.49	12.45
Exp. for dentist	466.50	415.52	276.92	350.18	4.70	3.33	6.55	4.90	19.39	22.38	20.22	2500.40	1583.45	1121.87	1613.74	*na*	*Na*	*na*
By typology:																		
General exp.	1446.66	1179.42	1164.29	1207.35	*na*	*na*	*na*	*na*	11.10	10.98	11.07	1038.30	900.70	876.22	922.86	37.12	28.51	33.81
Informal exp.	62.94	153.09	155.45	141.25	*na*	*na*	*na*	*na*	*na*	*na*	*na*	16.91	39.36	12.63	23.19	0.50	0.82	0.62
Transportation exp.	50.47	41.88	134.65	95.09	*na*	*na*	*na*	*na*	5.62	4.19	5.24	89.20	91.19	247.98	157.15	7.42	6.49	7.07
TOT health exp.	1542.60	1337.46	1388.64	1395.01	9.70	10.08	11.61	10.31	10.85	10.69	10.80	1090.93	967.84	1052.58	1026.53	43.44	34.24	39.90

Note: *These are imputed figures as the Bosnia and Herzegovina questionnaire on health expenses is based on the previous 14 months.

Most of the health expenditure incurred by those who seek care consists of general medical expenses. For poor households, transportation costs and informal payments represent a relatively big share of total health expenditure, and constitute a larger share among the poor than among the rich (except in Montenegro). The share of informal payments in highest in Albania where households at the poorest end of the income distribution pay, on average, 8% of their total health expenditures in the form of informal payments compared to 4% in the richest quintile. In Serbia, the rich pay a greater share of their health expenditure as informal expenses than the poor do, but the share of expenditure that the poor allocate to transportation expenditure is twice that which the rich do. Kosovo is the only place where households pay more or less the same across the income distribution.

Table 6 Health care expenditure on general, informal and transportation expenses, as percentage of total health expenditure, by economic status

		Quintiles of real per capita consumption				
		Poorest	**2**	**3**	**4**	**Richest**
Albania	General expenses	87%	88%	91%	92%	92%
	Informal expenses	8%	6%	5%	5%	4%
	Transportation expenses	6%	7%	4%	3%	2%
Montenegro	General expenses	100%	99%	99%	97%	91%
	Informal expenses	*Na*	*na*	*na*	*na*	*na*
	Transportation expenses	0%	1%	1%	3%	9%
Serbia	General expenses	58%	69%	71%	74%	77%
	Informal expenses	1%	1%	1%	1%	3%
	Transportation expenses	28%	22%	14%	13%	13%
Kosovo	General expenses	81%	80%	81%	80%	82%
	Informal expenses	2%	2%	1%	2%	1%
	Transportation expenses	17%	15%	17%	17%	15%

Total health expenditure can be considerable especially for the poor. In Table 7, we present health expenditure as a percentage of total gross expenditure, by per capita consumption quintile[15]. On average, households belonging to the bottom fifth of the consumption distribution spend less in level but more in percentage terms on total health care (including transportation costs and informal payments) than households in the richest quintiles. In Albania the poorest spend about half of what the richest spend for health care, but these expenses represent twice the share of total expenditure. In Kosovo, as well, the highest burden of health expenditure is borne by the poorest quintile of the population: the poor spend about the same as the rich for health care, but this expense represents 13 percent of their total consumption against 4 percent for the richest. By contrast, in Bosnia and Herzegovina, Serbia and Montenegro, the poor spend much less than the rich for health care and the share of total household expenditure devoted to healthcare is more similar across quintiles.

[15] There are methodological issues concerning the construction of both the consumption aggregate and per capita monthly health expenditure. The former is given in the datasets but the methodology to construct the figure may differ across countries; the latter is constructed by the aggregation of individual responses at household level and thereafter adjusted for the value for the household size. Total gross consumption is the sum of the two.

Table 7 Health-care expenditure as % of gross expenditure* (among those who seek care), by quintile

	Albania						Bosnia and Herzegovina					
	Poorest	**2**	**3**	**4**	**Richest**	**TOT**	**Poorest**	**2**	**3**	**4**	**Richest**	**TOT**
General official exp	7%	6%	6%	5%	4%	5%	*na*	*na*	*na*	*na*	*na*	*na*
Informal exp.	1%	1%	1%	0%	0%	0%	*na*	*na*	*na*	*na*	*na*	*na*
Transport exp.	1%	0%	0%	0%	0%	0%	*na*	*na*	*na*	*na*	*na*	*Na*
TOT health exp.	8%	7%	7%	5%	4%	6%	2.3%	1.6%	1.6%	1.5%	1.2%	1.7%
Health exp (monthly, pc)	449.68	665.99	737.28	748.23	939.80	709.58	4.16	3.95	5.07	6.49	7.71	5.1992
Tot gross exp. (monthly, pc)	4708.04	7182.29	9354.40	12171.27	20008.06	10755.93	157.99	231.65	301.82	398.29	643.05	315.9
Tot net exp. (excluding health), pc	4258.37	6516.30	8617.12	11423.04	19068.27	10046.36	153.83	227.71	296.75	391.80	635.35	310.7

	Montenegro						Serbia					
Continued:	**Poorest**	**2**	**3**	**4**	**Richest**	**TOT**	**Poorest**	**2**	**3**	**4**	**Richest**	**TOT**
General official exp	0.8%	0.8%	1.2%	1.2%	1.1%	1.0%	3.8%	3.9%	4.3%	2.8%	3.3%	3.6%
Informal exp.	*na*	*na*	*na*	*na*	*na*	*na*	0.03%	0.01%	0.02%	0.02%	0.07%	0.03%
Transport exp.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.62%	0.57%	0.36%	0.28%	0.18%	0.41%
TOT health exp.	0.8%	0.8%	1.2%	1.2%	1.1%	1.1%	4.4%	4.4%	4.6%	3.1%	3.6%	4.1%
Health exp (monthly, pc)	0.74	1.08	2.16	3.73	4.72	2.81	216.99	350.19	483.55	372.16	703.26	417.33
Tot gross exp. (monthly, pc)	84.81	131.33	174.34	229.35	398.28	225.69	3912.35	6134.71	8190.05	10508.48	17548.36	9022.11
Tot net exp. (excluding health), pc	84.07	130.24	172.17	225.62	393.56	222.87	3695.35	5784.52	7706.50	10136.33	16845.10	8604.78

	Kosovo					
Continued:	**Poorest**	**2**	**3**	**4**	**Richest**	**TOT**
General official exp	11%	8%	6%	5%	3%	7%
Informal exp.	0%	0%	0%	0%	0%	0%
Transport exp.	2%	1%	1%	1%	0%	1%
TOT health exp.	13%	9%	7%	6%	4%	8%
Health exp (monthly, pc)	12.14	10.14	10.7	10.09	11.21	10.88
Tot gross exp. (monthly, pc)	63.47	92.59	120.42	157.77	272.66	141.71
Tot net exp. (excluding health), pc	51.34	82.46	109.71	147.69	261.45	130.83

*Total per capita health expenditure was added to total per capita household expenditure to obtain gross expenditure figures. However, the consumption quintile distribution does not include health expenditure

5.2 Catastrophic health care payments

Illness can induce a sizable and unpredictable shock to a household's living standards (Wagstaff and van Doorslaer 2003). In order to explore the financial impact of healthcare expenditures on households, we examine the extent of catastrophic expenditure on healthcare. This involves measuring the extent to which health costs incurred exceed or fall short of different threshold levels, i.e. the degree of 'catastrophe' experience by a household, and the impact on poverty measures[16].

Table 8 presents the incidence (*headcount*) and the intensity (*gap*) of catastrophic out-of-pocket payments. The *headcount* is the percentage of individuals whose health care costs, expressed as a proportion of income, exceed a given discretionary fraction of their income, *z*; the *mean gap* is the average amount by which payments as a proportion of income exceed the threshold *z*. The incidence and intensity of the occurrence, though, are related through the mean positive gap (MPG) which is defined as the gap over the headcount[17]. The sensitivity of the analyses to different threshold levels is tested.

Table 8 Catastrophic impact of out-of-pocket payment – at various threshold levels

	Out-of-pocket health expenditure	**Threshold level z**			
	(as % of tot expenditure per capita)	**5%**	**10%**	**15%**	**25%**
Albania	Headcount	36.55%	20.79%	12.58%	5.12%
	Mean gap	3.58%	2.19%	1.36%	0.52%
	Mean positive gap	9.79%	10.53%	10.81%	10.16%
Bosnia and Herzegovina	Headcount	7.83%	3.10%	1.29%	0.35%
	Mean gap	0.47%	0.21%	0.12%	0.04%
	Mean positive gap	6.00%	6.77%	9.30%	11.43%
Montenegro	Headcount	5.84%	1.14%	0.70%	0.15%
	Mean gap	0.23%	0.12%	0.07%	0.04%
	Mean positive gap	3.94%	10.53%	10.00%	26.67%
Serbia	Headcount	23.83%	12.22%	7.64%	3.52%
	Mean gap	2.28%	1.44%	0.97%	0.46%
	Mean positive gap	9.58%	11.76%	12.67%	13.12%
Kosovo	Headcount	44.73%	26.32%	15.35%	6.73%
	Mean gap	4.59%	2.87%	1.86%	0.83%
	Mean positive gap	10.26%	10.90%	12.08%	12.29%

The table shows that in Albania, for instance, as much as 5% of the sample recorded out-of-pocket payments (as proportion of income) that exceeded 25% of their pre-payment income, with an average degree of 0.5%. Decreasing the threshold level to 10% raises the proportion of the population with catastrophic payments to almost 21%, while the mean gap rises to 2%. As expected, both the incidence

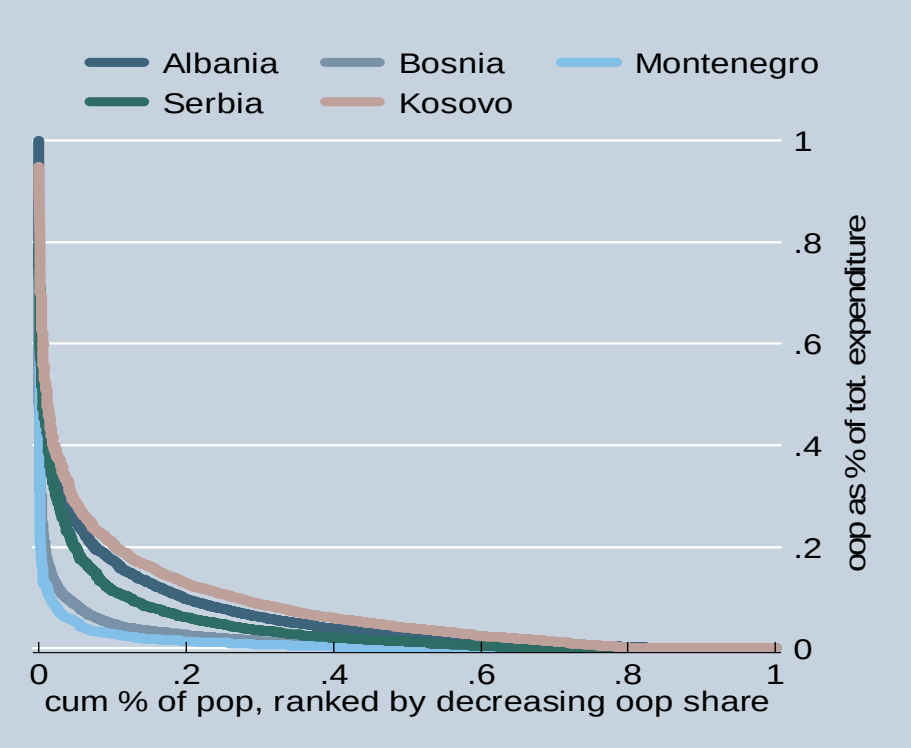
[16] To do so, we follow the methodology outlined in the World Bank's *Quantitative Techniques for Health Equity Analysis—Technical Note # 18* and *Quantitative Techniques for Health Equity Analysis—Technical Note # 19*

[17] The headcount, *H*, only captures the incidence of any catastrophes occurring, while the gap, *G*, also captures the intensity of the occurrence. They are related through the *mean positive gap* which is defined as $MPG = \frac{G}{H}$. Because this implies $G = H * MPG$, it means that the overall 'mean catastrophic gap' equals the fraction with catastrophic payments times the mean positive gap.

and intensity are larger when catastrophe is defined at a lower threshold. As thresholds increase, the MPG increases in all countries. It is therefore clear that most of the increase in the MPG is due to a modest decline in the mean gap relative to the headcount as the threshold is raised. The 'catastrophic' effect of health costs manifests itself more as an increase in poverty incidence than a deepening of poverty among those who are already poor.

The variation in catastrophic health payments across Balkan countries is also illustrated graphically in Figure 1 which shows, for each country, the share of health expenses or out-of-pocket payments (OOP) by cumulative percentage of population, ranked by decreasing payment fraction.

Figure 1: Catastrophic payments as share of total expenditure



The horizontal axis in Figure 1 shows the cumulative share of the sample, ordered by the health expenditure ratio, beginning with individuals with the smallest ratio, while the vertical axis shows the *oop* as a proportion of total expenditure (and represents any possible threshold level). The incidence and intensity is larger in Kosovo and Albania, followed by Serbia, then Bosnia and Herzegovina and Montenegro, where the impact is the smallest. Indeed, if the threshold is set at 10% of the pre-payment income, for instance, the Figure 1 (and Table 8) show that in Kosovo the headcount of people spending more than the threshold for health care is around 26% of the sample, in Albania around 21%, in Serbia 12%, in Bosnia and Herzegovina 3% and in Montenegro around 1% of the population. Moreover, the area under the payment share curve, but above any threshold level, is the intensity or mean catastrophic gap, which is largest in Kosovo and Albania and smallest in Bosnia and Herzegovina and Montenegro for any threshold level[18].

Yet, even in countries with fairly low average catastrophic expenditure shares, the distribution of those expenditures can be quite uneven within the country, with segments of the population devoting large shares of their consumption expenditure to health care. For example, while Montenegro seems to bear the least burden of out-of-pocket payments and many people seem to incur little or no expenditure, a few sick individuals have very high expenditure on health care. This can be seen in Table 9 where, for

[18] See World Bank *Quantitative Techniques for Health Equity Analysis—Technical Note # 18.*

all distributions of out-of-pocket health payments as a share of total expenditure, the mean substantially exceed the median and the coefficients of variation are large, in particular in Montenegro.

Table 9 Out-of-pocket payments for health care (as % of total expenditure)

	Mean	Median	Coeff. of variation*
Albania	6%	3%	1.44
Bosnia and Herzegovina	2%	0%	2.16
Kosovo	8%	4%	1.33
Montenegro	1%	0%	2.84
Serbia	4%	1%	1.96

*Coefficient of variation is equal to the standard deviation divided by the mean

5.3 Effect of out-of-pocket payments on poverty measures

In Table 10, we use another approach to assess the poverty impact of health care payments. It consists of comparing the poverty measures before and after health care spending is taken into consideration. Given data availability, we use the PA Poverty Lines, calculated in local currency (LCU), by the World Bank Poverty Assessment team as national poverty lines. A comparison of poverty headcounts and poverty gaps before and after health care spending provides a sense of the impoverishing effect of health expenditure, in terms of the additional number of people classified as poor or the deepening poverty among the poor[19].

Table 10 shows that health payments increase the number of poor Albanian households from 13% to 16% of the total population, i.e. poverty headcount increases by 20 percent. The relative impact on the measured poverty gap is even larger (34 percent). Looking at differences across countries, overall the impact of health expenditure on poverty headcount is not negligible: health payments increase the incidence of poverty by 15% in Kosovo, 13% in Serbia, 10% in Bosnia and Herzegovina and 6% in Montenegro. Also the after-health-payment poverty gap increases by 28% in Kosovo, 20% in Serbia, 11% in Bosnia and Herzegovina and 1% in Montenegro. Where the poverty gap after accounting for out-of-pocket payments is typically larger than adjustments to the poverty headcount (e.g. in Albania, Bosnia and Herzegovina and Serbia), then health care payments not only raise the prevalence of poverty but also its intensity. For purposes of comparison, Table A4 in the Appendix provides estimates using the single international poverty line.

The magnitude of these results should be treated with some caution because of potential bias. If poor people are less likely to seek care, the after-healthcare-payment headcount may be downward biased; on the other hand, if rich people are more likely to be insured, the measure will be upward biased.

While no causal relationship can be inferred from above results, it is undeniable that taking into account health care payments notably raises the incidence and intensity of poverty in the Western Balkans. The greatest differences are found in Albania and Kosovo, followed by Serbia. Montenegro is notable for the degree of financial protection its healthcare system appears to provide.

[19] See World Bank *Quantitative Techniques for Health Equity Analysis—Technical Note # 19.*

Table 10 Poverty impact of out-of-pocket payments (using PA poverty line)

		Albania	Bosnia and Herzegovina*	Montenegro	Serbia	Kosovo
	Poverty headcount					
1	Pre-payment headcount	13.40%	17.75%	7.20%	9.37%	40.86%
2	Post-payment headcount	16.20%	19.48%	7.60%	10.61%	47.12%
3	Poverty impact- percentage point change (2-1)	2.80%	1.73%	0.40%	1.24%	6.26%
4	Percentage change	20.90%	9.75%	5.59%	13.23%	15.32%
	Poverty gaps					
5	Pre-payment poverty gap	138.33	83.16	1.33	76.75	12.40
6	Post-payment poverty gap	185.14	92.03	1.36	91.85	15.82
7	Poverty impact (5-6)	46.81	8.87	0.03	15.10	3.42
8	Percentage change	34%	11%	1%	20%	28%

*Poverty is measured on annual basis (instead of monthly

6. Probit models of the health-poverty nexus

In this section we carry out a set of country-specific regressions that shed light on the relationship between health and poverty outcomes while controlling for the main socio-demographic characteristics[20].

In Table 11, we estimate a probit model of the likelihood of being poor as a function of the individual health status, medical care utilization and health insurance, controlling for other factors such as demographic characteristics, education, ethnicity, and region. The coefficients in the tables that follow report the marginal effect of an infinitesimal change (or discrete change in the case of dummy variables) in each independent variable on the outcome probability. Including both health shocks and health use in the regression provides an estimate of both the *direct* effect (cost) of health demand and the *indirect* effect (in terms of forgone earnings) of illness shocks[21].

Results show that the likelihood of poverty is, in general, higher among those who have experienced ill health. In both Albania and Bosnia and Herzegovina, the probability of poverty is higher among those who have experienced a chronic illness, and in Montenegro and Serbia the probability of poverty is higher among those who have experienced acute illness than among those who have not. Also, everywhere (except Kosovo where an effect could not be detected), health care utilization and health insurance is negatively associated with poverty. This may suggest that having health insurance protects households from poverty. However, the signs on these variables could be explained by the fact that poor people are more likely to be ill, less likely to seek health care and less likely to be insured. In other words, there is a reverse causality between poverty and health-related variables that does not allow us to draw inferential conclusions about the direction of causality of the nexus.

[20] The mean values of main socio-economic control variables are shown in the Appendix, Table A1.

[21] Of course, including both variables does hold its own potential bias, but it is reassuring that excluding health status does not lead to different results for the remaining health variables of interest.

Table 11: Probit regression modelling poverty impact of health status and utilization (marginal effects reported)

	Albania	Bosnia	Montenegro	Serbia	Kosovo
Chronic illness	0.032	0.07	-0.011	-0.004	
	(2.67)***	(3.52)***	(0.62)	(0.43)	
Acute illness	0.016		0.139	0.041	
	(1.25)		(5.98)***	(3.79)***	
Health use	-0.045	-0.046	0	-0.054	-0.006
	(5.94)***	(2.60)***	(2.94)***	(6.84)***	(0.69)
Health insurance	-0.022	-0.074	0.088		
	(2.87)***	(3.31)***	(5.74)***		
Age	0.005	-0.001	0.003	0.003	-0.002
	(6.90)***	(0.65)	(2.52)**	(3.93)***	(2.72)***
Age squared	0	0	0	0	0
	(6.78)***	(0.4)	(2.57)**	(3.21)***	(2.59)***
Sex (female)	0.007	-0.01	0.014	-0.001	0.009
	(1.04)	(0.66)	(1.83)*	(0.1)	(1.12)
N. of infants in the hh (0-5)	0.081		0.097	-0.016	0.027
	(18.32)***		(1.27)	(2.68)***	(7.97)***
N. of children the hh (6-18)	0.067	0.034	0.099	0.025	0.028
	(24.42)***	(2.38)**	(1.3)	(6.99)***	(12.36)***
N. of adults in the hh (15-64)	0.025	0.041	0.078	0.013	-0.011
	(11.65)***	(7.10)***	(1.02)	(4.71)***	(5.06)***
N of elderly hh members (65+)	0.017	0.072	0.075	0.043	0.034
	(3.24)***	(10.48)***	(0.99)	(9.76)***	(5.41)***
Education level (A):					
Primary edu.level	-0.078		0.015	-0.025	0.048
	(6.24)***		(1.02)	(2.37)**	(1.19)
Secondary edu.level	-0.147		-0.022	-0.085	0.049
	(11.24)***		(1.34)	(6.78)***	(1.19)
Vocational edu.level	-0.168		0.006	-0.06	0.06
	(12.42)***		(0.3)	(2.96)***	(1.36)
University and higher edu.level	-0.191		-0.078	-0.089	0.054
	(10.97)***		(4.64)***	(7.09)***	(1.24)
Ethnicity (B):					
Roma	0.454		0.469		0.467
	(8.16)***		(16.33)***		(12.03)***
Croat					0
					(0.00)
Serb			0		0.146
			(0.02)		(9.23)***
Moslem/B			0.064		0.052
			(3.93)***		(1.78)*
Macedonian	-0.175				
	(3.66)***				
Vllahe	0.485				
	(5.14)***				
Turk					-0.182
					(4.35)***
Albanian			0.01		
			(0.23)		
Other	0.107		-0.1		-0.036
	(1.4)		(2.10)**		(0.19)
No answer			0.091		
			(5.15)***		
Region (C):					
Other urban	0.097	-0.036		0.095	
	(6.72)***	(1.81)*		(7.54)***	
Rural area	0.136	0.066	0.011	0.104	0.032
	(11.35)***	(4.02)***	(1.4)	(8.50)***	(3.71)***
Observations	15434	2325	8205	7871	15697

Absolute value of z statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

(A) None education is omitted in each country regression.

(B) Albanian ethnicity is omitted in Albania; Montenegran in Montenegro; Albanian in Kosovo.

(C) Tirana is omitted in Albania; city is omitted in Bosnia; Belgrado is omitted in Serbia; urban is omitted in Montenegro and Kosovo.

To further explore the reverse causation between health and poverty, we estimate a model of the health-seeking behavior of people living in the Western Balkans, as a function of certain health-related variables and a set of socio-economic characteristics. Table 12 presents the results of a probit model of health care utilization for the whole population of each Balkan country, and for sub-populations of different ages so as to capture age-specific variation in health-related variables.

Not surprisingly, we find that health seeking behavior is positively associated with ill health, i.e. those who have experience ill health are more likely to have sought care. Having health insurance also significantly increase the person's probability to seek care (at least for those countries for which insurance data are available).

Economic status, as measured by consumption quintiles, is positively and significantly associated with the probability of seeking care, and in some cases (such as Albania) the coefficients increase across the expenditure quintiles. In other words, a marginal increase in consumption raises the probability of using health care over the whole expenditure distribution, but the effect is larger for higher expenditure quintiles. This effect does not hold across all age categories, though. Specifically, it appears that the lack of economic resources may hamper the care-seeking behavior for children or the elderly more than for adults (see, for example the model for Montenegro). Kosovo is the only case where we fail to find a significant effect of economic status on health care utilization. Differences in health-seeking behavior may also reflect the variation in the availability of health providers across regions. People living in rural (remote) and sub-urban regions are less likely to seek care than those in the main urban centers. On the other hand, the probability of health care utilization increases with the level of education, since the latter may affect both the perception of one's health status (i.e. one's diagnostic ability) and the ability to access health facilities. Interesting results are also obtained with respect to the ethnicity variable, as some ethnic groups seem significantly more or less likely to seek care than others. In Albania, for example, elderly Roma are significantly less likely to seek medical assistance than the elderly population of other ethnicities. Finally, controlling for all factors, even health status and education, females are more likely to seek care than males.

Table 12: Probit regression modelling health seeking behaviour (marginal effects reported)

	Albania				Bosnia			
	TOT	**Children (0-15)**	**Adults (16-64)**	**Elderly (65+)**	**TOT**	**Children (0-15)**	**Adults (16-64)**	**Elderly (65+)**
Quantiles 2 of pc consumption	0.054	0.081	0.03	0.105	0.041	0.104	0.071	-0.149
	(4.42)***	(4.15)***	(1.90)*	(2.71)***	(1.45)	(0.94)	(2.22)**	(2.28)**
Quantiles 3 of pc consumption	0.058	0.079	0.048	0.014	0.077	-0.13	0.105	-0.071
	(4.56)***	(3.78)***	(2.96)***	(0.35)	(2.82)***	(0.75)	(3.36)***	(1.24)
Quantiles 4 of pc consumption	0.071	0.093	0.068	-0.005	0.061	-0.603	0.086	-0.062
	(4.92)***	(3.71)***	(3.75)***	(0.1)	(2.10)**	(1.35)	(2.61)***	(0.99)
Quantiles 5 of pc consumption	0.098	0.133	0.095	-0.052	0.136	-0.069	0.174	-0.063
	(6.03)***	(4.53)***	(4.76)***	(0.97)	(4.84)***	(0.35)	(5.43)***	(0.97)
Chronic illness	0.437	0.523	0.417	0.439	0.243		0.24	0.239
	(30.38)***	(9.64)***	(24.73)***	(15.29)***	(11.49)***		(9.49)***	(6.35)***
Acute illness	0.441	0.583	0.326	0.279				
	(27.89)***	(23.53)***	(14.01)***	(7.47)***				
Age	0.009	-0.026	0.004	0.05	-0.001		-0.003	-0.007
	(8.15)***	(3.45)***	(1.79)*	(1.37)	(0.57)		(0.57)	(0.12)
Age squared	0	0.002	0	0	0		0	0
	(6.56)***	(4.43)***	(1.49)	(1.43)	(0.13)		(0.24)	(0.1)
Sex (female)	0.085	0.051	0.114	-0.052	0.164	0.289	0.175	0.11
	(9.91)***	(3.65)***	(10.58)***	(1.70)*	(9.03)***	(1.68)*	(8.27)***	(3.36)***
N. of infants in the hh (0-5)	-0.016	-0.03	-0.004	-0.079				
	(2.59)***	(2.59)***	(0.53)	(3.91)***				
N. of children the hh (6-18)	-0.02	-0.023	-0.014	0.001	-0.005	-0.027	-0.007	0.111
	(5.33)***	(3.33)***	(2.92)***	(0.1)	(0.3)	(0.19)	(0.33)	(1.95)*
N. of adults in the hh (15-64)	-0.019	-0.005	(0.032)	-0.007	-0.009	0.005	0.003	-0.051
	(6.41)***	(0.97)	(8.09)***	(0.66)	(1.14)	(0.07)	(0.32)	(4.29)***
N of elderly hh members (65+)	-0.022	0.001	-0.037	-0.064	0.014	-0.221	0.026	-0.018
	(3.17)***	(0.11)	(4.01)***	(2.38)**	(1.45)	(2.00)**	(2.29)**	(0.93)
Education level (A):								
Primary edu.level	0.082	0.085	0.182	0.089				
	(4.73)***	(3.09)***	(3.75)***	(2.51)**				
Secondary edu.level	0.095	0.123	0.179	-0.031				
	(4.33)***	(1.54)	(3.55)***	(0.34)				
Vocational edu.level	0.114	0.287	0.206	0.128				
	(4.71)***	(1.70)*	(4.06)***	(1.99)**				
University and higher edu.level	0.169		0.258	0.077				
	(6.01)***		(4.95)***	(0.82)				
Health insurance	0.065	0.068	0.061	0.054	0.102		0.097	0.095
	(6.74)***	(4.44)***	(4.91)***	(1.70)*	(3.64)***		(3.09)***	(1.44)
Ethnicity (B):								
Roma	-0.122	-0.079	-0.083					
	(2.27)**	(1.07)	(1.14)					
Greek	0.328	0.221	0.367	0.273				
	(7.63)***	(3.00)***	(6.48)***	(3.48)***				
Macedonian	-0.031	-0.117	0.081	-0.298				
	(0.42)	(1.01)	(0.85)	(1.12)				
Vllahe	-0.079	-0.168	-0.067	0.159				
	(0.81)	(1.12)	(0.5)	(0.73)				
Croatian								
Yugoslav								
Serb								
Moslem								
Turk								
Other	-0.178	0.22	-0.312	-0.26				
	(1.88)*	(1.12)	(2.61)***	(0.87)				
No answer								
Other urban	-0.059	-0.017	-0.062	-0.183	0.024	0.049	0.025	0.023
	(4.02)***	(0.71)	(3.41)***	(3.50)***	(1.00)	(0.63)	(0.87)	(0.64)
Rural area	-0.023	-0.043	-0.001	-0.111	0.011	0.11	0.012	-0.015
	(1.61)	(1.81)*	(0.07)	(2.34)**	(0.55)	(1.26)	(0.49)	(0.43)
Observations	15535	4397	9732	1405	2325	28	1813	482

Table 12: Probit regression modelling health seeking behaviour (marginal effects reported)- cont.

	Montenegro				Serbia			
	TOT	**Children (0-15)**	**Adults (16-64)**	**Elderly (65+)**	**TOT**	**Children (0-15)**	**Adults (16-64)**	**Elderly (65+)**
Quantiles 2 of pc consumption	0.015	0.045	0.009	-0.017	0.026	0.057	0.02	0.013
	(1.57)	(3.14)***	(0.72)	(0.44)	(1.36)	(1.24)	(0.82)	(0.33)
Quantiles 3 of pc consumption	0.037	0.048	0.038	-0.04	0.121	0.158	0.106	0.104
	(3.67)***	(3.13)***	(2.75)***	(1.08)	(6.08)***	(3.34)***	(4.24)***	(2.60)***
Quantiles 4 of pc consumption	0.014	0.003	0.011	0.019	0.114	0.148	0.099	0.1
	(1.38)	(0.19)	(0.85)	(0.45)	(5.58)***	(2.99)***	(3.94)***	(2.30)**
Quantiles 5 of pc consumption	0.102	0.148	0.096	-0.038	0.164	0.246	0.139	0.097
	(7.93)***	(5.77)***	(5.70)***	(0.95)	(7.61)***	(4.67)***	(5.31)***	(1.92)*
Chronic illness	0.135	0.05	0.224	-0.005	0.425	0.47	0.42	0.416
	(10.18)***	(2.52)**	(10.96)***	(0.2)	(25.18)***	(5.57)***	(19.91)***	(15.05)***
Acute illness	0.499	0.51	0.472	0.561	0.428	0.619	0.413	0.288
	(26.21)***	(13.59)***	(18.38)***	(12.38)***	(23.71)***	(12.41)***	(17.81)***	(9.33)***
Age	0.001	-0.012	-0.001	0.029	-0.006	-0.028	-0.004	0
	(0.79)	(3.08)***	(0.99)	(0.8)	(4.03)***	(1.96)**	(1.17)	(0)
Age squared	0	0.001	0	0	0	0.001	0	0
	(0.29)	(2.34)**	(1.62)	(0.69)	(4.23)***	(1.54)	(1.38)	(0.02)
Sex (female)	0.009	0.008	0.006	-0.031	0.102	0.041	0.131	0.095
	(1.68)*	(1.11)	(0.87)	(1.19)	(8.56)***	(1.45)	(9.12)***	(3.15)***
N. of infants in the hh (0-5)	-0.018	-0.01	-0.012	-0.353	-0.008	-0.055	-0.011	0.045
	(1.02)	(0.12)	(0.7)	(2.35)**	(0.78)	(2.09)**	(0.81)	(1.41)
N. of children the hh (6-18)	-0.02	-0.003	-0.015	-0.415	-0.023	-0.027	-0.014	-0.04
	(1.15)	(0.04)	(0.85)	(2.79)***	(3.17)***	(1.38)	(1.64)	(2.11)**
N. of adults in the hh (15-64)	-0.023	-0.008	-0.019	-0.385	-0.006	-0.009	0.005	-0.02
	(1.34)	(0.1)	(1.06)	(2.57)**	(1.2)	(0.61)	(0.71)	(1.96)**
N of elderly hh members (65+)	-0.025	-0.009	-0.026	-0.369	-0.02	0	-0.028	-0.028
	(1.48)	(0.11)	(1.45)	(2.45)**	(2.23)**	(0.01)	(2.42)**	(1.12)
Education level (A):								
Primary edu.level	0.027	0.017	0.026	-0.04	0.014	-0.024	0.065	0.067
	(2.32)**	(1.31)	(0.84)	(1.34)	(0.63)	(0.6)	(1.04)	(1.85)*
Secondary edu.level	0.015	-0.008	-0.01	0.118	0.043		0.091	0.131
	(1.26)	(0.36)	(0.38)	(2.82)***	(1.64)		(1.47)	(2.64)***
Vocational edu.level	0.043	-0.03	0.006	0.279	-0.002		0.022	0.101
	(2.90)***	(0.63)	(0.22)	(4.94)***	(0.05)		(0.27)	(1.14)
University and higher edu.level	0.001		-0.016	-0.023	0.036		0.064	0.247
	(0.05)		(0.64)	(0.56)	(1.07)		(0.95)	(4.02)***
Health insurance	0.039	0.026	0.016	0.062				
	(4.21)***	(2.03)**	(1.03)	(2.04)**				
Ethnicity (B):								
Roma	0.093	0.08	0.083	-0.087				
	(4.71)***	(3.45)***	(1.93)*	(2.74)***				
Greek								
Macedonian								
Vllahe								
Croatian	0.102		0.036	0.194				
	(3.85)***		(1.21)	(2.68)***				
Yugoslav	-0.002		0.004					
	(0.05)		(0.1)					
Serb	-0.01	-0.01	-0.01	-0.067				
	(1.67)*	(1.14)	(1.38)	(3.02)***				
Moslem	-0.006	-0.016	-0.005	0.165				
	(0.58)	(1.18)	(0.36)	(2.14)**				
Turk								
Other								
No answer	-0.006	0.034	-0.013	-0.081				
	(0.57)	(1.97)**	(0.91)	(2.59)***				
Other urban					0.001	-0.007	-0.01	0.094
					-0.08	(0.17)	(0.5)	(2.33)**
Rural area	0.003	-0.001	0.009	-0.06	-0.068	-0.042	-0.085	0.038
	(0.59)	(0.15)	(1.29)	(2.65)***	(3.98)***	(1.04)	(4.16)***	(0.92)
Observations	8271	2362	4927	972	7871	1191	5083	1597

Table 12: Probit regression modelling health seeking behaviour (marginal effects reported)- cont.

			Kosovo	
	TOT	**Children (0-15)**	**Adults (16-64)**	**Elderly (65+)**
Quantiles 2 of pc consumption	-0.005	-0.016	-0.004	0.046
	(0.49)	(1.04)	(0.26)	(1.00)
Quantiles 3 of pc consumption	-0.001	0	-0.017	0.101
	(0.11)	(0.02)	(1.14)	(2.16)**
Quantiles 4 of pc consumption	-0.011	-0.016	-0.022	0.07
	(0.98)	(0.94)	(1.44)	(1.43)
Quantiles 5 of pc consumption	0.012	-0.007	0.007	0.078
	(1.00)	(0.36)	(0.43)	(1.41)
Chronic illness				
Acute illness				
Age	0.005	0.003	0.014	-0.096
	(8.94)***	(0.59)	(6.53)***	(2.76)***
Age squared	0	0	0	0.001
	(4.14)***	(0.82)	(4.46)***	(2.62)***
Sex (female)	-0.012	0.01	-0.016	-0.037
	(1.68)*	(0.87)	(1.71)*	(1.17)
N. of infants in the hh (0-5)	0.005	-0.01	0.003	0.011
	(1.56)	(2.07)**	(0.69)	(0.7)
N. of children the hh (6-18)	-0.004	-0.003	-0.004	-0.022
	(2.28)**	(0.8)	(1.49)	(2.23)**
N. of adults in the hh (15-64)	-0.006	0.008	-0.013	0.008
	(3.55)***	(2.79)***	(5.25)***	(0.93)
N of elderly hh members (65+)	-0.007	0.008	-0.022	0.148
	(1.18)	(0.96)	(2.79)***	(5.13)***
Education level (A):				
Primary edu.level	0.02	-0.036	0.108	0.975
	(0.54)	(0.85)	(1.76)*	(1.39)
Secondary edu.level	0.021	-0.042	0.118	0.981
	(0.57)	(1.02)	(1.80)*	(1.43)
Vocational edu.level	0.085	-0.025	0.187	0.802
	(2.03)**	(0.51)	(2.61)***	(1.5)
University and higher edu.level	0.027	-0.063	0.12	0.806
	(0.66)	(1.37)	(1.72)*	(1.48)
Health insurance				
Ethnicity (B):				
Roma	-0.01	-0.017	0.009	-0.069
	(0.35)	(0.44)	(0.22)	(0.4)
Greek				
Macedonian				
Vllahe				
Croatian	0.259	0.55	0.201	0.317
	(3.31)***	(2.47)**	(2.19)**	(1.41)
Yugoslav	0.073			
	(0.22)			
Serb	-0.006	-0.011	-0.005	-0.033
	(0.47)	(0.4)	(0.3)	(0.73)
Moslem	-0.024	-0.053	-0.028	0.022
	(0.98)	(1.11)	(0.85)	(0.29)
Turk	-0.06	-0.023	-0.09	-0.108
	(1.65)*	(0.44)	(1.79)*	(0.74)
Other	0.267		0.265	
	(1.56)		(1.51)	
No answer				
Other urban				
Rural area	0.001	0.01	0.001	-0.025
	(0.18)	(0.86)	(0.07)	(0.79)
Observations	15697	5235	9425	1034

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

6. Conclusions and implications for policy

In this paper we used data from household surveys to examine the relationship between health, health care utilization, out-of-pocket payments and poverty in Albania, Bosnia and Herzegovina, Montenegro, Serbia and Kosovo. Most of these governments have either initiated or are contemplating reforms of the heath sector. From a policy perspective, a key concern is the effect of household expenditures on poverty, and the extent to which such payments act as a barrier to health care utilization.

Our descriptive and inferential analyses have shown that there are significant differences in health-care utilization rates across socio-economic groups and that these differences are related to both geographical location and economic status. Private out-of-pocket health care payments are burdensome and appear to discourage health care seeking behavior, especially among the poor. The data suggest that the health care payments made by the poor are made up primarily of official payments (for inpatient and outpatient care) and, then, by transportation costs (which are particularly high in Serbia and Kosovo) and informal payments. Informal payments are higher in rural or remote regions, where they probably compensate for lower salaries or inefficient local public expenditure.

Private out-of-pocket expenditure on health care appears to increase the incidence of poverty and push poor households into deeper poverty. Our findings show that the financial impact of out-of-pocket payments appears to be greatest in Albania and Kosovo. In Albania, where more than 60 percent of health care costs are paid out-of-pocket by households and only one third comes from public spending, we find that after accounting for out-of-pocket payments to finance health care, the headcount poverty ratio increases by 27% and the poverty gap by 36%. The same is true for Serbia, where despite the fact that health insurance is compulsory, the poverty impact of health payments is far from negligible: health-related expenses increase the incidence of poverty by 17% and while the burden of health care expenditure seems to be fairly similar across the income distribution, high transportation costs may have a significant impact on health seeking behaviour. In Kosovo, where the health system is tax-funded, we find that healthcare expenses represent 13 percent of the total consumption of the poor compared to 4 percent among the richest. Health care utilization is fairly high, households pay more or less the same for health care across the income distribution and, unlike in other places, in Kosovo the results from the regression analysis show that economic status is not significant in shaping health care demand. This could be the result of relative equity in access to health care and relative inequality in the *ex-ante* or pre-payment income distribution (as can be observed from the net expenditure distribution by quintiles)[22]. Finally, Bosnia and Herzegovina and, especially, Montenegro seem more able to provide households with financial protection against illness. However, in Montenegro the incidence of illness and is low, as are health care utilization rates. Therefore, while on the one hand the health system seems to offers greater financial protection, this result may be affected by a smaller demand for health care.

As countries in the sub-region continue the process of health system reform, one area that will have to receive attention is how to protect vulnerable groups from the impoverishing effects of health care expenditure. The reform process will necessarily be different for every country. Some areas that could be considered include revisiting the the user fee structure – both its design and implementation – to consider different exemption criteria, the progressivity of co-payment schedules and the interaction between formal and informal payments; examining the constraints on the expansion of health insurance to uncovered groups, such as agricultural workers and the informally employed; ensuring a more equitable geographic distribution of healthcare facilities or subsidizing transport for the rural poor so as to reduce the high transportation costs; and exploring the potential role of private sector providers and insurers in expanding access to care. Protecting households from the impoverishing effects of adverse health events is a key objective of health systems in all countries and to achieve it

[22] It is worth bearing in mind that the data used for Kosovo in this paper were collected in 2000 during a period of great political volatility before the Ministry of Health was established (February 2002).

within the constraint of ensuring financial sustainability will require more efficient use of available public and private resources.

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APPENDIX

Table A1 Summary statistics for individual and household characteristics

	Albania	Bosnia and Herzegovina	Kosovo	Monetenegro	Serbia
Age	30.82	42.30	27.32	27.86	38.32
No. of infants in the hh (0-5)	0.53	0.00	1.23	1.06	0.32
No. of children the hh (6-18)	1.48	0.26	2.29	2.09	0.81
No. of adults in the hh (15-64)	3.28	3.04	4.37	5.18	2.92
No. of elderly hh members (65+)	0.45	1.26	0.44	0.67	0.60
Female	50%	50.30%	50.73%	49.60%	50.89%
Region of living:					
Capital city	11.84%	52.47%	37.58%	64.97%	19.72%
Other urban	28.21%	15.85%			37.46%
Rural	59.95%	31.68%	62.42%	35.03%	42.83%
Education level:					
None	15.74%	11.60%	1.07%	21.94%	14.83%
Primary	55.88%	15.49%	59.65%	19.10%	36.11%
Secondary	13.62%	57.02%	29.06%	28.14%	38.77%
Vocational	9.86%	1.05%	4.89%	13.16%	1.86%
Higher	4.89%	13.22%	5.34%	17.67%	8.43%
Ethnicity:					
Albanian	97.43%		88.12%		
Greek	1.08%				
Bosnian		35.80%			
Serbian		38.51%	6.97%	29.98%	
Croatian		22.84%		1.48%	
Muslim			1.92%	6.60%	
Roma			1.68%	4.86%	
Montenegran				49.64%	
Turk			1.00%		

Table A2 Variations in the definition of concepts across the LSMS surveys

	Albania (2005)	Bosnia and Herzegovina (2004)	Montenegro (2004)	Serbia (2003)	Kosovo (2000)
Chronic illness	Do you suffer from a chronic illness or disability that has lasted more than 3 months (including severe depression)?	Do you have any chronic diseases?	Do you have chronic diseases?	Has doctor told you about having chronic disease?	*na*
Illness shock	During the last 4 weeks have you had any (sudden) illness or injury? (such as flu, diarrhea, a fracture, etc..)	*na*	Did you have any acute symptom, diseases or injury in the last 30 days?	Did you have any acute symptom, diseases or injury in last month?	*na*
Medical assistance (outpatient)	During the past 4 weeks, did you visit any … (list of medical services)?	During the last 14 months how many times did you visit (list of medical services)?	During the last 30 days have you consulted with health practitioner or visited a health facility? (list of first visit- and second visit-providers)	Have you visited…(list of *public and private* medical services) …during last month?	During the past 4 weeks, did you visit any… (list of medical services) to obtain health care?
Hospitalization (inpatient)	During the past 12 months, have you stayed in a hospital or maternity, hospital or a private clinic in Albania or abroad?	During the past 14 months, did you stay in hospital or spa?	*na*	Did you stay in hospital in the last 12 months?	During the past 12 months, have you stayed at a public hospital (inc. humanitarian and military overnight)?
Insurance /license	Do you have a health license?	Do you have health insurance?	Are you covered by health insurance either directly or through another member of your household?	*na*	*na*

Table A3 Type of health care utilization by poverty status using international poverty lines (%)

	Albania		Bosnia and Herzegovina		Montenegro		Serbia	
	Non-poor	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**
Public ambulatory	9.56***	7.92***	35.08	0.00***	70.19	64.51	22.21	18.48
Hospital (outpatient)	3.52	3.64	na	na	*na*	*na*	*na*	*Na*
Popular doctor/alternative medicine	0.36*	0.17*	2.16	0.00***	*na*	*na*	0.99	0.21
Private doctor	1.36	1.02	7.48	0	3.39	0.58	2.23***	0.00***
Private nurse	1.38	1.39	0.59	0.00***	1.08	0.00	*na*	*Na*
Health service abroad	*Na*	*Na*	na	na	*na*	*na*	0.12	0.00
Other	*Na*	*Na*	14.62	0.00***	3.88	0.00	*na*	*Na*
Non-prescription medicines	16.04***	12.59***	41.78	0.00***	0.02**	0.01**	21.59***	7.66***
Hospital (inpatient)*	3.96	4.34	4.79	0.00***	21.46**	34.91**	5.03	3.04
Dentist	21.66***	11.73***	26.44	0.00***	0.02***	0.00***	7.20***	1.64***
Have health insurance	39.36***	28.00***	59.28***	0.00***	94.86***	98.72***	*na*	*Na*
International poverty line	4785.45 New Lek/pc /per month		863.225 KM/pc/ per year		82.13 euro/pc/ per month		3124.115 Dinars/ad. equiv/ per month	

Note: *In Montenegro, the data include outpatient care at hospitals.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A4 Poverty impact of out-of-pocket payments (using international poverty lines)

		Albania	Bosnia and Herzegovina*	Montenegro	Serbia
	Poverty headcount				
1	Pre-payment headcount	10.30%	0.15%	5.00%	3.16%
2	Post-payment headcount	13.10%	0.20%	5.08%	3.87%
3	Poverty impact- percentage point change (2-1)	2.80%	0.05%	0.08%	0.71%
4	Percentage change	27.18%	33.33%	1.60%	22.47%
	Poverty gaps				
5	Pre-payment poverty gap	96.53	0.27	0.82	16.98
6	Post-payment poverty gap	132.29	0.36	0.84	21.58
7	Poverty impact (5-6)	35.76	0.09	0.02	4.60
8	Percentage change	37%	33%	2%	27%

*Poverty is measured on annual basis (instead of monthly).