Public Health Services and Health Care Utilization in Viet Nam

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Abstract[2]

The main objectives of this paper are to review policies on health services and to provide an assessment of public health facilities and the access of people to health care services in Vietnam. Medical facilities and staffs in public establishments have been increasing. Health insurance has been expanded rapidly in the recent years. It is very encouraging that the poor and ethnic minority are more likely to be enrolled in health insurance than other people. In addition, we find that health insurance helps the insured increase health care utilization and reduce out-of-pocket spending. The density of medical staffs is also positively correlated with outpatient health care utilization. However, the quality of health care services and the access to health care services remain limited in poor, remote and mountainous areas.

JEL Classifications: H15; I11; I18.
Keywords: Health policy, health insurance, health care, Vietnam.

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1. Introduction

Over the past decade, Vietnam has witnessed high economic growth and remarkable improvement in living standard. Economic reforms initiated in the late 1980s significantly changed the economy of Vietnam from severe crisis in the 1980s to high growth with an average annual rate of Gross Domestic Product (GDP) per capita of around 7 percent during the 1990s and 2000s. According to Vietnam Household Living Standard Surveys (VHLSS), the poverty incidence decreased from 58 percent in 1993 to 29 percent in 2002, and continued to decrease to 14 percent in 2006.[3] The incidence of food poverty or ultra poverty decreased from 25 percent to 7 percent during the 1993-2008 period.

Health of people has been increasingly improved. Vietnam have achieved better health indicators than countries with a similar development level, and Vietnam continues to improve at rates that equal or surpass those in most neighboring countries (Adams, 2005). Life expectancy is around 72. For Vietnamese women, the fife expectancy is 75 and around 10 years longer than would be expected given the country's level of development (WHO, 2003). The maternal mortality ratio was reduced from 130/100,000 live births in 1990 to 75/100,000 live births (WHO, 2009). The fraction of children with low weight at birth decreased from 7.3% in 2000 to 5.1% in 2005. The percentage of children under year olds with malnutrition was reduced from 33.8% in 2001 to 25.2% in 2005 (World Bank, 2007).

People tend to use more health care services in Vietnam. According to VHLSSs, per capita expenditure on health increased from 504 thousand VND to 604 thousand VND during the period 2004-2008 (at constant prices). During this period, the percentage of people above 5 years old having health insurance increased from 39% to 53%. The percentage of people insured by voluntary health insurance grew from 1% to 6%.

Improvements in health care are partly resulted from dramatic changes in the health care system. Since the economic reform in the late 1980s, the health system includes both public and private sectors. However, the public sectors have played a key role in providing health care services, especially in policy, prevention, research and training. The number of public hospitals increased from 835 in 2000 to 974 in 2008. The number of doctors in public health establishments increased from 39200 to 57300 during the period 2000-2008.

[3] The poverty line is equivalent to the expenditure level that allows for nutritional needs with food consumption securing 2100 calories per day per person and some essential non-food consumption such as clothing and housing. This poverty line is estimated by General Statistics Office of Vietnam and World Bank in Vietnam.

Vietnam has implemented a number of health programmes to improve the access of people to health care services. For example, the national health support program for the poor have provided free health insurance and free health card for around 21% of the people above 5 years old. The National Strategy for People's Health Care 2001–2010 has been set and implemented with objectives to improve health statuses of the people.

Access to health care services is a key element to improve health of people. Information on health care systems and people's access to health care system is very useful for policy makers as well as researchers to design health policies. The main objectives of this paper are to review policies on health services and to provide an assessment of the delivery of public health services and the health care utilization of people in Vietnam. In addition, the paper also identifies the key healthcare challenges that people face and propose several policy implications for health care.

The paper is structured into 5 sections. Section 2 introduces data sets used in this study. Section 3 presents the assessment of provision of health care services and people's access to health care service. Section 4 presents some regressions which analyze factors correlated with health insurance and the use of health care services. Finally section 5 concludes.

2. Data sets

The study uses data from the two recent Vietnam Household Living Standard Surveys (VHLSS) in 2004 and 2008. These surveys were conducted by the General Statistics Office of Vietnam (GSO) with technical support from the World Bank (WB). The 2004 and 2008 VHLSSs covered 9188 and 9189 households, respectively. The samples are representative for the national, rural and urban, and regional levels.[4]

The surveys contain information on welfare of household and community. Information on households includes basic demography, employment and labor force participation, education, health, income, expenditure, housing, fixed assets and durable goods, participation of households in poverty alleviation programs, and especially information on credit, international remittances, private transfers, pensions and social allowances that households had received during the 12 months before the interview. Especially, the surveys contained data on household health including enrollment in health insurance, health care utilization and health care spending.

[4] There are also VHLSSs in 2002 and 2006. However, the 2002 VHLSS provides less information on heath than VHLSSs in 2004, 2006 and 2008. We do not use the 2006 VHLSS, since it was conducted between 2004 and 2008 and the analysis of VHLSS 2004 and 2008 are sufficient to provide the trend in health pattern between 2004 and 2008.

Information on commune characteristics was collected from 2280 rural communes. This data can be linked with the household data. Commune data includes demography, general economic conditions and aid programs, non-farm employment, agriculture production, local infrastructure and transportation, education, health and health facilities, and social problems.

In addition, data on public health facilities such as the number of health stations and medical staffs are used. These data are available from Statistical Yearbooks which are published by General Statistics Office of Vietnam.

3. Health care pattern in Vietnam

3.1. Provision of health care services

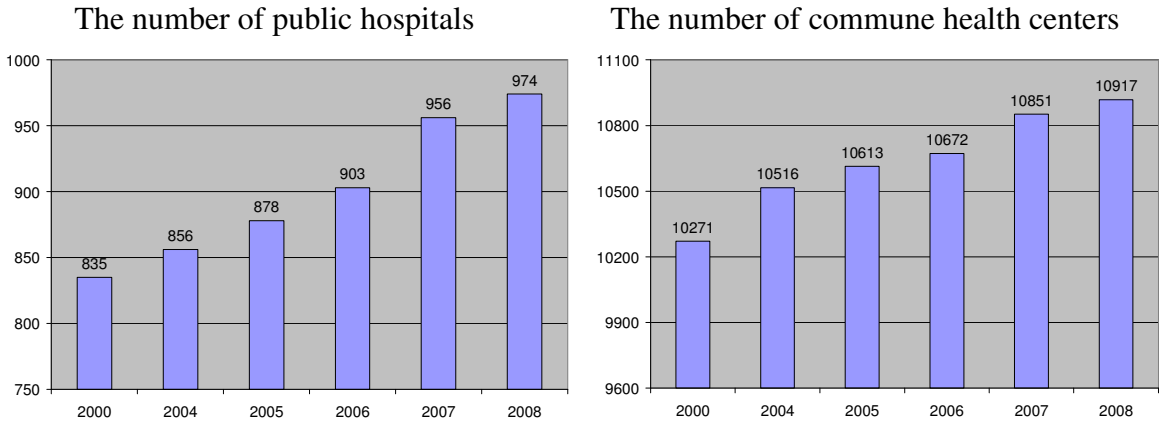
The health financing system in Vietnam includes subsidized state health services and services based on payments from users. The Government has increased state budget spending on health care for policy people, the poor, farmers, ethnic minorities, and people living in disadvantaged regions. Two major public financial sources for health care in Viet Nam are the budget which is allocated directly to service providers, through the MoH and Provincial Health and Finance Departments, and the flow from the social health insurance fund. In addition, households' out-of-pocket payments on health care is also a big source of health financing. Other financial flows can be ODA, private health insurance, other private expenditure. In recent years, social mobilization of health activities has been stimulated by the Government to mobilize all available resources in the society. Social mobilization is the promotion and facilitation of the extensive involvement of the people and entire society in the development of health.

The health services in Vietnam are provided by both public and private health providers, in which the public one plays a key role in health care, especially in policy, prevention, research and training (MOH, 2008). The private sector has grown steadily during the past ten years, but mainly provides outpatient health service and is still much smaller than the public sector.[5] Vietnam has been developing the grassroots health network. Health network at grassroots level decentralizes 3 levels at the hamlets/villages level, the commune/ward/town level, and district level. Until 2008, health staffs were

[5] In 2004, there were 77 private hospitals in the country, accounting for 6.86 % of the total number of hospitals nationwide, with 5412 beds, accounting for 3.4% of the total number of hospital beds nationwide (MOH, 2008).

available in 100% of communes and wards, including doctors in 65.1% of communes, a midwife or obstetric/pediatric doctor's assistant in 93.3% of communes, and health workers in 86.8% of villages (MOH, 2008).

Figure 1: Public health establishments



Source: Statistical Yearbooks, GSO

The number of public health establishments has been increased overtime (Figure 1). During the period 2000-2008, the number of public hospitals increased from 835 to 974, around 17%. During this period, the number of commune health centers (also called commune medical station) increased from 10271 to 10917. The number of patient beds in public medical establishments also rose from 192 to 218.8 thousand. The number of doctors and nurses in public medical hospitals and stations increased remarkably. Figure 4 shows that the number of doctors and nurses rose by around 46% and 41% during the period 2000-2008, respectively. The growth rate of medical staffs is much higher than the growth rate of population. As a result, there is a high increase in the number of doctors and nurses per 100,000 people between 2000 and 2008.

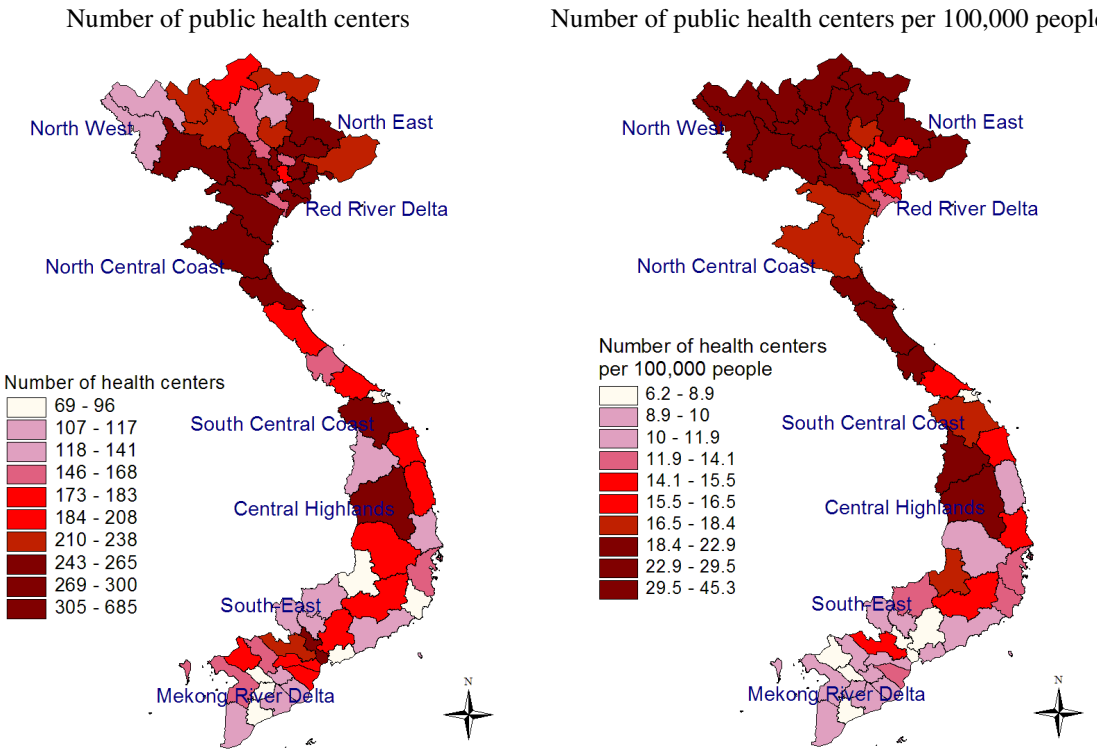
There is a variation in the number of public health establishments and medical staffs across regions (Table 1). Although the number of public health establishments and medical staffs is higher in regions with high population such as Red River Delta and Mekong River Delta, the number of public health establishments and medical staffs per 100,000 people is higher in poor regions with low population such as North East and North West. This reflects pressure on provision of health care service in regions with high population density. Similar trends are also found at the provincial level (Figures 2, 3 and 4).

Table 1: Public health establishments and medical staffs in 2008

Regions	The number of public health establishments and medical staffs				The number of public health establishments and medical staffs per 100,000 people			
	Com. centers	Hospital	Doctors	Nurses	Com. centers	Hospital	Doctors	Nurses
Red River Delta	2546	170	9764	23621	13.7	0.92	52.6	127.4
North East	2434	155	6160	17495	25.2	1.61	63.8	181.3
North West	736	46	1329	6263	27.6	1.73	49.9	235.0
North Central Coast	2043	108	4912	15871	18.9	1.00	45.5	147.0
South Central Coast	1023	88	3930	10741	14.1	1.21	54.2	148.1
Central Highlands	823	67	2402	7330	16.4	1.34	48.0	146.5
South East	1259	127	8288	20349	8.6	0.87	56.8	139.4
Mekong River Delta	1806	154	7886	23241	10.2	0.87	44.6	131.3
All Vietnam	12670	915	44671	124911	14.7	1.06	51.8	144.9

Source: Statistical Yearbooks, GSO

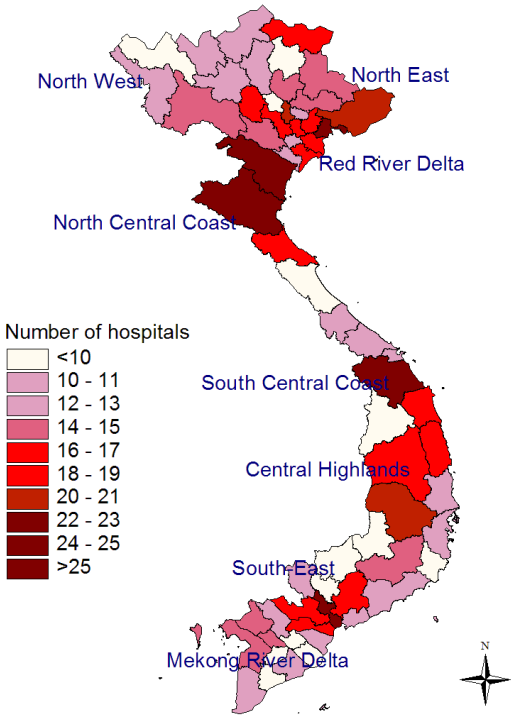
Figure 2: The number of public health establishments in 2008



Source: Statistical Yearbooks, GSO

Figure 3: The number of hospitals of provinces in 2008

Number of public hospitals



Number of public hospitals per 100,000 people

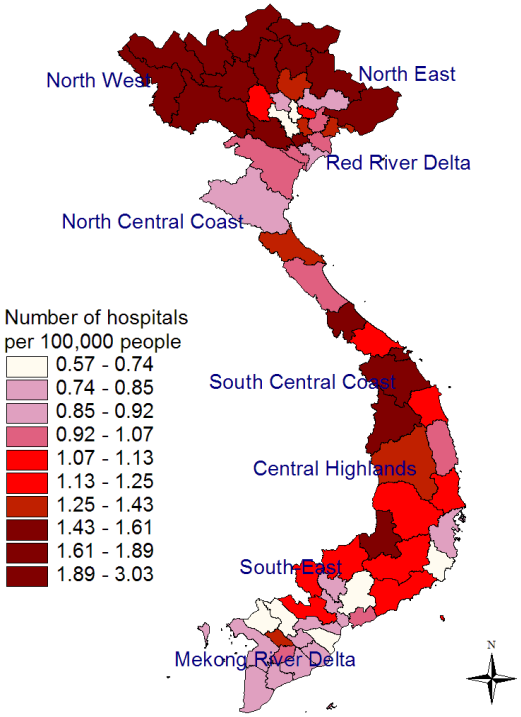
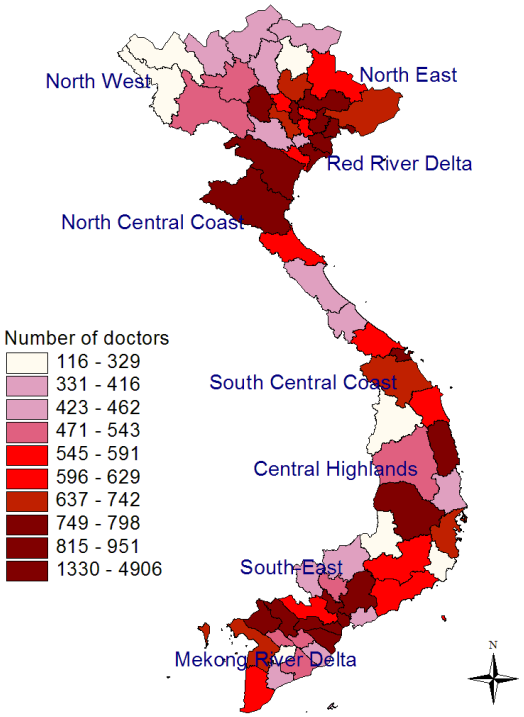
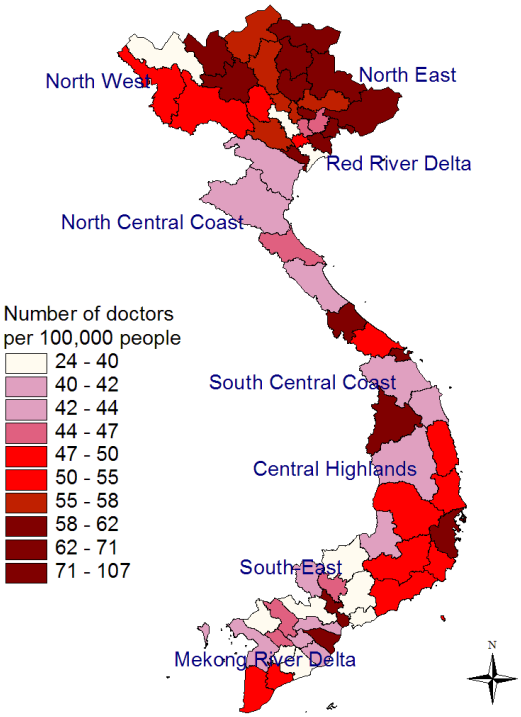


Figure 4: The number of doctors in public health centers of provinces in 2008

Number of doctors



Number of doctors per 100,000 people



Source: Statistical Yearbooks, GSO

Although the commune health centers are available in most the communes, health service quality are very limited at this level (MOH, 2008). For better treatment, people have to go to district and provincial hospitals. As a result, there is a problem of overcrowding faced in provincial and central hospitals (MOH, 2008). The access to district and province hospitals is more difficult for mountainous regions such as North East and North West. Few communes have district and province hospitals (Table 2). For communes without a hospital, people have to travel a long distance to get the nearest hospital. Table 3 shows that the average distance from commune centers to the closest district hospital in the rural areas is 13.3 km, 22.5 km and 15.6 km for North East, North West and Central Highlands, respectively. Distance to the provincial hospital is much longer.

Table 2: Percentage of rural communes having different health centers in 2008

Regions	Commune centers	Regional Polyclinic	District hospitals	Provincial hospitals	Other provinces
Red River Delta	100.0	4.8	1.7	0.6	3.4
North East	98.9	12.3	2.0	1.1	4.0
North West	100.0	16.9	5.9	0.8	0.0
North Central Coast	100.0	7.4	2.1	1.1	5.3
South Central Coast	98.4	9.8	4.7	1.0	3.6
Central Highlands	97.1	10.9	2.9	0.0	2.2
South East	98.5	10.7	4.9	0.5	5.4
Mekong River Delta	98.0	9.0	3.1	2.2	5.1
All Vietnam	99.0	9.2	2.9	1.1	4.0

Source: VHLSS 2008

Table 3: Average distance from rural communes to nearest health centers (km) in 2008

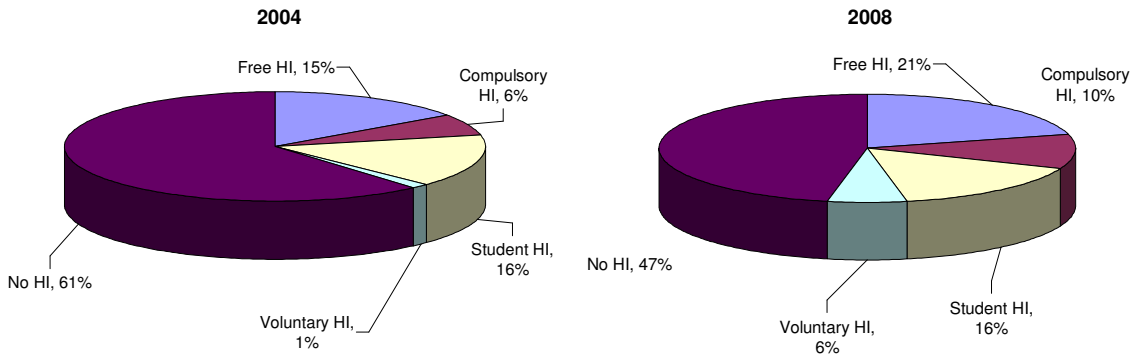
Regions	Commune centers	Regional Polyclinic	District hospitals	Provincial hospitals	Other provinces
Red River Delta	-	5.7	7.5	24.5	48.4
North East	9.9	10.9	13.3	49.9	51.7
North West	-	11.1	22.5	66.8	154.6
North Central Coast	-	7.3	11.7	44.8	56.5
South Central Coast	5.0	8.0	10.5	32.7	37.3
Central Highlands	7.8	15.8	15.6	52.9	86.6
South East	7.0	8.6	12.1	39.3	34.2
Mekong River Delta	2.1	6.9	11.7	35.0	29.0
All Vietnam	5.4	8.3	11.8	39.3	52.1

Source: VHLSS 2008

One of the successful health policies is the increase in the health insurance coverage. Positive impacts of health insurance on health utilization in Vietnam are found in several empirical studies. Wagstaff and Pradhan (2005) measured impact of all types of health insurance using Vietnam Living Standard Surveys 1993 and 1998. They found that health insurance increased the probability of using health care services and the number of hospital visits. Health insurance also helped reduction of annual out-of-pocket health expenditures. Sepehri et al. (2004) also used the same data sets to measure impact of health insurance on health care spending. They found that health insurance reduced the out-of-pocket expenditures by around 36 to 45 percent. Jowett et al. (2003) measured impact of health insurance using a small household survey in 1999. The findings were that health insurance decreased the average out-of-pocket expenditures by approximately 200 percent. The impact of free health insurance for the poor was assessed in Bales et al. (2007) and Wagstaff (2007) using data from VHLSSs 2002 and 2004. Wagstaff (2007) found a positive impact of the health insurance on health care utilization, while Bales at el. (2007) showed that health insurance helped the insured reduce the inpatient treatment expenses.

Figure 5 shows that during the period 2004-2008, the percentage of people above 5 years old having health insurance increased from 39% to 53%. The percentage of people insured by voluntary health insurance grew from 1% to 6%. In recent years, the Government has increased State budget spending on the health care for policy people such as those with merits to the nation, the poor, ethnic minority people, and people living in disadvantaged regions (MOH, 2008). The percentage of people who are provided free health insurance and healthcare cards increased from 15% in 2004 to 21% in 2008.

Figure 5: Distribution of people above 5 years old by health insurance



Source: VHLSSs 2004 and 2008

Tables 4 examine the health insurance coverage in 2008 by different groups and areas. It is very encouraging that the health insurance coverage increased for all the people groups as well as all the regions. In addition, the health insurance coverage is much higher for ethnic minorities than Kinh and Hoa. In 2008, the fraction of insured people is 49% and 76% for Kinh/Hoa and ethnic minorities, respectively. The poor are more likely to have health insurance than the non-poor. The main health insurance type for the poor and ethnic minorities are free health insurance. Rural people and people living in poor and mountain regions tends to have a higher fraction of the insured people. There is no gender difference in access to health insurance.

Table 4: Distribution of people above 5 years old by health insurance in 2008

	Free HI	Compulsory HI	Student HI	Voluntary HI	No HI	Total
All Vietnam	20.8	10.3	15.9	6.1	47.0	100
Age group						
Below 15	23.3	0.4	56.7	0.9	18.7	100
16-60	18.0	12.5	9.1	6.1	54.4	100
Above 60	35.4	10.3	0.0	13.6	40.8	100
Gender						
Male	20.9	11.1	16.6	4.9	46.6	100
Female	20.7	9.5	15.2	7.1	47.5	100
Ethnicity						
Kinh and Hoa	14.1	11.1	17.6	6.7	50.5	100
Ethnic minorities	65.6	4.6	4.1	1.9	23.8	100
Poverty						
Non-Poor	14.6	11.7	17.5	6.7	49.6	100
Poor	59.4	1.5	6.0	2.1	31.0	100
Urbanity						
Urban	9.5	20.3	19.3	7.0	44.0	100
Rural	25.1	6.4	14.6	5.7	48.2	100
Region						
Red River Delta	11.4	14.4	18.7	4.8	50.6	100
North East	38.5	12.0	11.4	4.1	34.0	100
North West	72.2	6.4	4.3	1.7	15.5	100
North Central Coast	30.3	7.1	18.0	5.6	39.1	100
South Central Coast	18.4	8.5	22.5	8.4	42.2	100
Central Highlands	36.1	8.9	13.6	3.0	38.5	100
South East	9.2	14.5	17.4	8.0	50.9	100
Mekong River Delta	13.4	4.9	12.4	7.7	61.6	100

Source: VHLSSs 2004 and 2008

3.2. Health care utilization

The access to health care services is reflected by health care visits. Table 5 presents the percentage of people using outpatient services in health centers and Table 6 presents average annual outpatient contacts. The pattern of using outpatient health care services is rather stable during the period 2004-2008. As expected, old people are more likely to use the health services. In 2008, 54.7% of people above 69 years old visited medical establishments for outpatient health. The corresponding figure for children under 15 years old and people between 15 and 61 is 33.1% and 27.9%, respectively. Female tend to visit the health centers for outpatient care than male.

Table 5: Percentage of people using outpatient services in health centers

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	31.10	10.09	9.93	14.32	31.76	10.06	13.18	13.44
Age group								
Below 15	29.49	11.57	7.22	13.49	33.09	13.82	10.66	13.08
16-60	28.49	8.38	9.89	13.15	27.87	7.68	12.12	12.24
Above 60	53.61	17.61	17.89	24.73	54.65	17.33	25.96	22.24
Gender								
Male	27.42	8.45	8.53	12.92	28.36	8.53	11.99	11.78
Female	34.71	11.70	11.29	15.70	35.02	11.52	14.32	15.04
Ethnicity								
Kinh and Hoa	32.04	9.45	10.49	15.60	32.68	8.97	14.32	14.61
Ethnic minorities	24.65	14.52	6.03	5.47	25.76	17.15	5.74	5.78
Poverty								
Non-Poor	32.39	9.25	11.30	15.47	32.50	9.10	14.24	14.37
Poor	25.78	13.57	4.26	9.60	27.38	15.72	6.90	7.94
Urbanity								
Urban	34.58	5.32	14.83	17.84	31.83	4.10	17.87	14.13
Rural	29.90	11.75	8.22	13.10	31.73	12.33	11.38	13.18
Region								
Red River Delta	29.20	11.37	10.50	10.38	27.27	7.90	13.55	10.06
North East	21.28	10.57	7.71	4.20	24.77	12.90	9.64	5.32
North West	23.57	13.62	7.41	3.46	21.87	12.78	6.92	4.24
North Central Coast	21.36	8.86	7.18	6.87	24.63	10.89	9.99	6.79
South Central Coast	32.11	7.79	8.77	18.81	31.49	8.80	13.73	14.08
Central Highlands	36.85	11.91	9.86	18.76	35.65	12.57	11.85	17.14
South East	37.52	6.42	13.88	20.81	33.13	5.43	17.98	14.05
Mekong River Delta	38.69	12.00	10.06	22.14	44.31	13.45	13.92	25.30

Source: VHLSSs 2004 and 2008

People in disadvantaged groups remain have lower utilization rates than other people. The poor, ethnic minorities, and people living in mountainous regions have lower fractions of using outpatient health care services than other people. It might be because these people tend to stay in areas with low-quality health facilities, thus they are less

likely to visit the health stations. In addition, they have a lower number of not-working days and in-bed days.

Table 6: Average annual outpatient contacts (treatment) in health centers

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	1.055	0.256	0.265	0.535	1.177	0.296	0.380	0.502
Age group								
Below 15	0.893	0.278	0.167	0.449	1.030	0.349	0.254	0.427
16-60	0.896	0.200	0.261	0.435	0.966	0.212	0.343	0.412
Above 60	2.606	0.570	0.570	1.466	2.916	0.731	0.911	1.274
Gender								
Male	0.898	0.218	0.223	0.457	0.980	0.247	0.328	0.405
Female	1.210	0.293	0.305	0.611	1.367	0.342	0.429	0.595
Ethnicity								
Kinh and Hoa	1.125	0.254	0.283	0.589	1.255	0.279	0.421	0.555
Ethnic minorities	0.573	0.269	0.142	0.162	0.666	0.401	0.109	0.156
Poverty								
Non-Poor	1.151	0.245	0.308	0.598	1.246	0.279	0.416	0.551
Poor	0.660	0.297	0.088	0.274	0.771	0.396	0.163	0.212
Urbanity								
Urban	1.327	0.153	0.453	0.720	1.308	0.149	0.606	0.553
Rural	0.961	0.291	0.199	0.471	1.127	0.351	0.293	0.482
Region								
Red River Delta	0.766	0.247	0.237	0.283	0.784	0.200	0.302	0.282
North East	0.416	0.183	0.153	0.080	0.622	0.295	0.206	0.121
North West	0.419	0.222	0.130	0.067	0.467	0.268	0.122	0.077
North Central Coast	0.495	0.188	0.140	0.166	0.572	0.238	0.199	0.135
South Central Coast	0.956	0.205	0.203	0.548	0.957	0.208	0.340	0.409
Central Highlands	1.044	0.247	0.270	0.528	1.092	0.300	0.299	0.494
South East	1.675	0.210	0.496	0.970	1.456	0.179	0.698	0.579
Mekong River Delta	1.713	0.408	0.299	1.007	2.287	0.571	0.492	1.225

Source: VHLSSs 2004 and 2008

Out-of-pocket expenses per outpatient contact are examined in Table 7. The out-of-pocket expenses, which are collected in VHLSSs, include all expenses related to each health care visit including treatment fees, drugs, and spending on bonus, tip for doctors, cost for travel, meal, accommodation. Overall, the poor, rural people, ethnic minorities, and people living in mountainous regions have much lower out-of-pocket spending per outpatient health care contact than the non-poor, urban people, Kinh/Hoa and people in rich regions. There might be three possible explanations for this. Firstly, poor and ethnic minority people are more likely to have health insurance, and health insurance can help them reduce out-of-pocket health spending. Secondly, health care services in rural and remote areas where the poor and ethnic minorities are mainly located can have lower

quality and lower cost than health care in urban and rich regions. Thirdly, with limited budget, the poor tend to consume less on health care services.

Table 7: Average out-of-pocket spending per outpatient contact (thousand VND; in price Jan 2008)

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	189.1	81.6	362.3	149.9	227.0	70.1	394.5	201.9
Age group								
Below 15	96.7	47.9	210.0	78.3	107.8	39.9	198.8	104.8
16-60	220.4	89.7	409.0	166.0	260.3	67.0	409.5	238.3
Above 60	219.3	118.1	360.1	202.2	278.6	134.0	531.2	198.9
Gender								
Male	196.2	78.5	386.5	151.2	241.3	58.5	405.4	209.2
Female	183.6	83.8	344.4	148.8	215.9	78.3	385.6	196.5
Ethnicity								
Kinh and Hoa	199.5	89.2	375.1	151.5	239.8	78.0	401.4	201.9
Ethnic minorities	95.5	47.2	207.6	118.7	120.9	42.9	281.4	202.4
Poverty								
Non-Poor	209.3	93.1	378.7	158.1	246.6	77.8	412.6	210.5
Poor	84.2	49.1	182.0	95.1	89.6	43.7	172.9	110.0
Urbanity								
Urban	249.5	135.6	377.2	176.5	294.5	67.0	378.7	264.0
Rural	164.8	73.1	352.9	137.3	201.1	70.4	403.9	176.5
Region								
Red River Delta	217.6	96.5	399.5	181.2	266.2	79.2	383.0	263.5
North East	200.8	72.2	306.2	340.8	196.6	53.5	340.9	309.7
North West	148.1	58.5	311.6	204.6	180.3	51.6	344.5	435.7
North Central Coast	256.3	112.6	470.2	215.4	247.4	69.6	447.8	289.2
South Central Coast	190.2	60.3	370.7	173.6	232.2	50.7	332.1	232.5
Central Highlands	163.9	49.3	276.6	179.0	223.9	38.5	378.6	254.1
South East	221.9	110.8	386.1	146.3	321.4	200.9	481.5	264.4
Mekong River Delta	125.5	63.4	297.6	88.7	147.9	46.7	344.9	95.5

Source: VHLSSs 2004 and 2008

The pattern of inpatient health care utilization is examined in Tables from 8 to 10. The percentage of people using inpatient health care services in 2004 and 2008 was 6.9% and 6.6%, respectively. Most of people used public services provided by hospitals, and only a few people using private services. As expected, old people have much higher rates of inpatient utilization than children and young people. Female are more likely to use the inpatient health care service than male. Unlike outpatient care, the difference in inpatient utilization rates between the poor and the non-poor, the urban and rural people, Kinh/Hoa and ethnic minorities and among regions is quite small.

Table 84: Percentage of people using inpatient services in health centers

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	6.88	1.09	5.63	0.26	6.61	0.90	5.65	0.22
Age group								
Below 15	4.17	0.68	3.39	0.15	5.02	1.05	3.98	0.08
16-60	6.65	1.12	5.38	0.23	5.95	0.78	5.06	0.25
Above 60	16.11	2.03	13.65	0.76	14.70	1.35	13.38	0.36
Gender								
Male	6.24	0.83	5.25	0.23	5.97	0.71	5.18	0.24
Female	7.49	1.34	5.99	0.28	7.23	1.09	6.10	0.20
Ethnicity								
Kinh and Hoa	6.88	0.96	5.75	0.27	6.54	0.74	5.68	0.24
Ethnic minorities	6.82	1.98	4.79	0.16	7.13	1.98	5.45	0.10
Poverty								
Non-Poor	7.10	0.88	6.05	0.27	6.72	0.74	5.86	0.26
Poor	5.93	1.95	3.89	0.21	5.98	1.85	4.37	0.00
Urbanity								
Urban	6.76	0.43	6.10	0.26	5.97	0.25	5.59	0.22
Rural	6.92	1.31	5.46	0.25	6.86	1.15	5.67	0.22
Region								
Red River Delta	7.03	1.11	5.95	0.08	6.52	0.74	5.65	0.17
North East	6.82	1.50	5.23	0.17	7.73	1.55	6.33	0.11
North West	6.98	2.14	4.82	0.13	8.42	1.80	6.76	0.20
North Central Coast	8.07	1.65	6.35	0.21	6.94	1.11	5.77	0.24
South Central Coast	7.79	0.81	6.64	0.38	7.93	0.86	7.07	0.24
Central Highlands	7.14	0.61	5.83	0.76	6.47	0.72	5.28	0.78
South East	5.89	0.39	5.24	0.30	5.27	0.19	4.94	0.28
Mekong River Delta	6.29	1.11	5.00	0.31	6.20	1.10	5.11	0.10

Source: VHLSSs 2004 and 2008

Table 9: Average annual inpatient contacts (treatment) in health centers

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	0.094	0.013	0.077	0.004	0.092	0.012	0.077	0.003
Age group								
Below 15	0.056	0.009	0.046	0.002	0.070	0.016	0.053	0.001
16-60	0.087	0.012	0.071	0.003	0.082	0.010	0.069	0.003
Above 60	0.252	0.030	0.209	0.014	0.217	0.020	0.191	0.006
Gender								
Male	0.085	0.010	0.072	0.003	0.083	0.010	0.070	0.003
Female	0.103	0.016	0.083	0.005	0.101	0.014	0.085	0.002
Ethnicity								
Kinh and Hoa	0.094	0.012	0.078	0.004	0.092	0.011	0.079	0.003
Ethnic minorities	0.096	0.022	0.072	0.002	0.093	0.022	0.070	0.001
Poverty								

	2004				2008			
	All health centers	Commune centers	Hospitals	Private	All health centers	Commune centers	Hospitals	Private
All Vietnam	0.094	0.013	0.077	0.004	0.092	0.012	0.077	0.003
Non-Poor	0.099	0.011	0.084	0.004	0.095	0.011	0.081	0.003
Poor	0.073	0.021	0.050	0.002	0.080	0.021	0.059	0.000
Urbanity								
Urban	0.091	0.006	0.082	0.004	0.087	0.004	0.079	0.004
Rural	0.095	0.016	0.076	0.004	0.095	0.015	0.077	0.002
Region								
Red River Delta	0.092	0.013	0.078	0.001	0.087	0.009	0.076	0.003
North East	0.084	0.016	0.066	0.002	0.102	0.018	0.083	0.001
North West	0.116	0.022	0.093	0.001	0.111	0.018	0.091	0.002
North Central Coast	0.104	0.019	0.082	0.003	0.092	0.014	0.075	0.002
South Central Coast	0.109	0.009	0.095	0.005	0.112	0.012	0.097	0.003
Central Highlands	0.097	0.006	0.081	0.009	0.087	0.009	0.068	0.010
South East	0.078	0.005	0.069	0.004	0.078	0.003	0.072	0.003
Mekong River Delta	0.098	0.016	0.075	0.006	0.095	0.020	0.074	0.001

Source: VHLSSs 2004 and 2008

Similar to outpatient care, average out-of-pocket spending per inpatient contact is higher for the urban people, the poor, Kinh and Hoa, and people living in delta and rich people. The gap in out-of-pocket spending per inpatient contact is very large between the poor and non-poor as well as Kinh/Hoa and ethnic minorities. In 2008, out-of-pocket spending per inpatient contact was 539.4 and 2470.7 thousand VND for the poor and the non-poor, respectively. For Kinh/Hoa and ethnic minorities, each inpatient health care treatment cost around 2415.4 and 1037.4 thousand VND in 2008, respectively.

Table 105: Average out-of-pocket spending per inpatient contact
(thousand VND; in price Jan 2008)

	2004				2008			
	All health centers	Commune center	Hospital	Private	All health centers	Commune center	Hospital	Private
All Vietnam	1909.0	391.3	2210.8	1268.6	2218.0	339.5	2390.7	5182.0
Age group								
Below 15	1061.2	360.9	1220.4	409.3	1140.8	187.0	1343.1	2753.1
16-60	2060.8	407.2	2419.0	1262.1	2427.1	411.1	2570.3	5591.8
Above 60	2103.9	360.4	2348.0	1773.8	2494.8	333.7	2650.0	4608.4
Gender								
Male	2136.3	423.8	2420.9	1310.2	2503.7	386.2	2619.0	6464.6
Female	1723.5	371.6	2030.5	1235.8	1991.8	310.2	2204.9	3751.7
Ethnicity								
Kinh and Hoa	2082.7	447.0	2367.6	1358.7	2415.4	376.7	2556.6	5386.3
Ethnic minorities	695.5	205.6	909.2	238.4	1037.4	249.2	1262.4	2149.3
Poverty								
Non-Poor	2206.3	479.8	2468.9	1453.4	2470.7	399.3	2608.4	5182.0
Poor	438.7	226.4	552.7	296.2	539.4	197.6	666.3	
Urbanity								

	2004				2008			
	All health centers	Commune center	Hospital	Private	All health centers	Commune center	Hospital	Private
All Vietnam	1909.0	391.3	2210.8	1268.6	2218.0	339.5	2390.7	5182.0
Urban	2729.5	619.2	2909.2	1729.3	2813.4	304.4	2854.1	6055.8
Rural	1630.2	365.1	1939.7	1104.4	2020.3	342.5	2216.2	4854.9
Region								
Red River Delta	1945.7	327.0	2242.4	238.9	2380.1	338.5	2613.0	3074.7
North East	1230.0	206.8	1535.7	510.5	1613.1	298.7	1878.1	2854.7
North West	1143.6	297.4	1539.4	265.1	1119.9	356.0	1185.8	4399.0
North Central Coast	1321.4	282.6	1583.2	1470.2	2259.4	367.0	2303.8	9440.9
South Central Coast	1655.7	362.6	1748.5	2700.0	1599.1	260.3	1692.1	2853.7
Central Highlands	1336.1	968.7	1442.4	727.0	2320.6	317.4	2328.6	5358.2
South East	3231.3	641.3	3487.8	2003.5	3521.7	841.8	3405.8	7300.5
Mekong River Delta	2215.0	576.0	2615.4	866.7	2050.0	311.4	2409.4	1153.6

Source: VHLSSs 2004 and 2008

Table 11 presents the total per capita expenditure on health cares which include not only expenses of health care services but also expenses for self-treatment and drugs without description, payment for health insurance and other payment on health at the household level. For the whole country, per capita expenditure on health increases from 504 thousand VND in 2004 to 604 thousand VND in 2008. Health expenditure accounts for 6.5% and 6.8% of the total expenditure in 2004 and 2008, respectively. The proportion of households who have the share of health expenditure in total living expenditure above 20% increased slightly from 7.5% in 2004 to 8.1% in 2008.

Table 11: Per capita out-of-pocket expenditure on health care
(thousand VND; in price Jan 2008)

	2004			2008		
	Expenditure on health	Share of health exp. in living expenditure (%)	% households having the share larger than 20%	Expenditure on health	Share of health exp. in living expenditure (%)	% households having the share larger than 20%
All Vietnam	503.8	6.5	7.5	603.5	6.8	8.1
Ethnicity						
Kinh and Hoa	540.1	6.7	7.9	650.8	7.1	8.6
Ethnic minorities	194.7	4.4	4.3	225.7	4.7	4.1
Poverty						
Non-Poor	582.3	6.8	8.3	668.0	7.0	8.6
Poor	121.9	5.1	3.9	144.5	5.4	4.2
Urbanity						
Urban	760.9	5.9	5.9	866.1	6.5	7.2
Rural	411.0	6.7	8.1	501.4	6.9	8.5
Region						
Red River Delta	462.6	6.3	7.5	588.1	6.7	7.9

	2004			2008		
	Expenditure on health	Share of health exp. in living expenditure (%)	% households having the share larger than 20%	Expenditure on health	Share of health exp. in living expenditure (%)	% households having the share larger than 20%
North East	271.8	4.5	5.0	424.0	5.8	7.1
North West	298.7	5.2	5.0	350.5	5.4	6.3
North Central Coast	374.3	6.7	7.6	462.7	6.8	8.5
South Central Coast	469.7	6.5	6.6	504.0	6.5	6.9
Central Highlands	419.1	7.2	9.0	606.9	6.9	7.8
South East	881.6	6.7	7.4	891.9	7.1	8.3
Mekong River Delta	534.7	7.6	9.3	653.9	7.5	9.2

Source: VHLSSs 2004 and 2008

3.3. Assessment of public health services

As presented above, positive effects of health insurance have been found in several quantitative studies. The 2008 VHLSS contains information on how household assess the quality of public health services. Table 12 presents the distribution of households by their assessment of satisfaction with local public health services. The percentage of households who have high and very high satisfaction with local public health is 37.8% and 3.5%. Nearly half of the households have middle satisfaction with the health services. However, there are around 1.2% and 9.3% of households feeling very lowly and lowly satisfied with the local health services, respectively. There is not a large difference in the satisfaction level across different people groups as well as different regions.

Table 12: Distribution of households by satisfaction with local public health services (%)

	Level of satisfaction					
	Very low	Low	Middle	High	Very high	Total
All Vietnam	1.2	9.3	48.2	37.9	3.5	100
Ethnicity						
Kinh and Hoa	1.2	9.6	48.3	37.5	3.4	100
Ethnic minorities	1.3	7.2	47.2	40.4	3.9	100
Poverty						
Non-Poor	1.1	9.7	48.0	37.9	3.3	100
Poor	1.5	6.4	49.6	37.8	4.8	100
Urbanity						
Urban	0.9	13.4	49.3	33.7	2.8	100
Rural	1.3	8.0	47.8	39.2	3.7	100
Region						
Red River Delta	1.6	10.4	56.5	30.3	1.3	100
North East	1.1	7.0	53.4	36.6	1.9	100
North West	1.0	6.6	49.1	36.8	6.5	100
North Central Coast	1.3	11.3	54.5	31.3	1.6	100

	Level of satisfaction					
	Very low	Low	Middle	High	Very high	Total
All Vietnam	1.2	9.3	48.2	37.9	3.5	100
South Central Coast	1.1	11.9	43.9	39.6	3.4	100
Central Highlands	1.1	14.0	45.9	37.1	2.0	100
South East	0.4	10.6	48.5	37.6	2.9	100
Mekong River Delta	1.3	4.7	32.1	53.0	9.0	100

Source: VHLSS 2008

Table 13 examines households' opinion on the improvement in health care service over the two years 2006-2008. Most of people think health care services were unchanged (23.8%) and just improved a little (68.5%). It is reasonable since the quality of health care services cannot be improved in the short period. The assessment opinion is rather similar across different people groups.

Table 136: Distribution of households by opinions on health care services during the period 2006-2008 (%)

	Assessment					
	Deteriorated a lot	Deteriorated a little	No change	Improved a little	Improved a lot	Total
All Vietnam	0.5	1.8	23.8	68.5	5.3	100
Ethnicity						
Kinh and Hoa	0.5	1.8	24.2	68.2	5.2	100
Ethnic minorities	0.8	1.7	20.6	70.8	6.2	100
Poverty						
Non-Poor	0.5	1.9	24.4	68.2	5.0	100
Poor	1.0	1.1	19.5	70.5	8.0	100
Urbanity						
Urban	0.2	3.0	30.8	61.8	4.3	100
Rural	0.7	1.3	21.3	71.0	5.7	100
Region						
Red River Delta	1.0	2.8	28.4	64.5	3.3	100
North East	0.3	2.9	20.3	72.4	4.1	100
North West	0.8	2.6	14.8	74.6	7.1	100
North Central Coast	0.6	0.8	27.0	67.0	4.6	100
South Central Coast	0.2	0.9	22.9	70.9	5.0	100
Central Highlands	0.7	2.6	26.5	67.7	2.5	100
South East	0.4	1.2	28.8	65.6	4.0	100
Mekong River Delta	0.2	0.9	14.8	73.0	11.1	100

Source: VHLSS 2008

4. Determinants of health utilization and out-of-pocket expenditures

The previous section showed that the poor and ethnic minority people tend to have lower health care utilization, especially outpatient health care than the non-poor and Kinh/Hoa. Increased health insurance and heath care utilizations are important for people health. This section investigates characteristics associated with health insurance enrollment and the use of health care service using regression methods.

Table 14 presents the multinomial logit regression of health insurance enrollment for people above 5 years old. There are four popular types of health insurance: (i) Free health insurance and card, (ii) Compulsory health insurance, (ii) Student health insurance, and (iv) Voluntary health insurance. The base outcome is 'no health insurance'. Independent variables include (i) individual characteristics which are age, gender, ethnicity, education, (ii) household variables including household size and per capita income, (iii) regional and urban dummy variables.

The fraction of people insured by free health insurance is higher for men than for women. As expected, disadvantaged groups including old people, ethnic minorities and people living in rural and mountains regions, low income people are more likely to have free health insurance than young people, Kinh and Hoa, and people in delta and rich region.

For compulsory health insurance, women are more likely to be insured than men. It is very interesting that ethnic minorities have to more compulsory health insurance than Kinh and Hoa people given the observed control variables. Age and education are strongly corrected with compulsory health insurance. People with high age and high education have higher probability of being enrolled in compulsory health insurance.

Kinh and Hoa students, urban students and those living in households with high income and small household size are more likely to have student health insurance. Finally, for voluntary health insurance, age and education are positively correlated with enrollment.

Table 14: Multinomial logit regression of health insurance in 2008

Explanatory variables	Coef.	Std. Err.	z	P>z
Free health insurance and card				
Male (yes = 1)	0.1288	0.0269	4.78	0.000
Age	0.0062	0.0013	4.90	0.000
Ethnic minorities (yes = 1)	1.4723	0.1305	11.28	0.000
Urban areas (yes =1)	-0.1814	0.0903	-2.01	0.044
Red River Delta	(Omitted)			
North East	0.7900	0.1268	6.23	0.000
North West	1.6610	0.2722	6.10	0.000
North Central Coast	0.8988	0.1196	7.51	0.000

Explanatory variables	Coef.	Std. Err.	z	P>z
South Central Coast	0.3698	0.1297	2.85	0.004
Central Highlands	0.8454	0.1595	5.30	0.000
South East	-0.1141	0.1416	-0.81	0.420
Mekong River Delta	-0.3544	0.1107	-3.20	0.001
No education degree	(Omitted)			
Primary school degree	-0.5624	0.0521	-10.80	0.000
Lower secondary school degree	-0.7899	0.0628	-12.59	0.000
Upper secondary school degree	-0.8989	0.0942	-9.54	0.000
Technical degree	-0.5235	0.1094	-4.79	0.000
Post secondary degree	0.2261	0.2072	1.09	0.275
Per capita income (million VND)	-0.0938	0.0093	-10.10	0.000
Household size	-0.0932	0.0208	-4.47	0.000
_cons	-0.0254	0.1635	-0.16	0.876
Compulsory health insurance				
Male (yes = 1)	-0.1078	0.0509	-2.12	0.034
Age	0.0211	0.0021	10.29	0.000
Ethnic minorities (yes = 1)	0.5487	0.2225	2.47	0.014
Urban areas (yes =1)	0.4167	0.0807	5.17	0.000
Red River Delta	(Omitted)			
North East	0.3367	0.1202	2.80	0.005
North West	0.3072	0.2458	1.25	0.211
North Central Coast	-0.1989	0.1169	-1.70	0.089
South Central Coast	-0.0104	0.1159	-0.09	0.929
Central Highlands	0.4162	0.2402	1.73	0.083
South East	0.2827	0.1280	2.21	0.027
Mekong River Delta	-0.4467	0.1129	-3.96	0.000
No education degree	(Omitted)			
Primary school degree	0.6920	0.1828	3.78	0.000
Lower secondary school degree	1.3110	0.1810	7.25	0.000
Upper secondary school degree	2.1409	0.1931	11.08	0.000
Technical degree	3.5442	0.1850	19.16	0.000
Post secondary degree	4.9112	0.2053	23.92	0.000
Per capita income (million VND)	0.0026	0.0046	0.57	0.566
Household size	-0.0119	0.0243	-0.49	0.623
_cons	-4.4867	0.2687	-16.70	0.000
Student health insurance				
Male (yes = 1)	-0.0211	0.0456	-0.46	0.644
Age	-0.3954	0.0088	-44.86	0.000
Ethnic minorities (yes = 1)	-1.1579	0.1435	-8.07	0.000
Urban areas (yes =1)	0.5929	0.0804	7.38	0.000
Red River Delta	(Omitted)			
North East	-0.0681	0.1167	-0.58	0.560
North West	-0.2250	0.2924	-0.77	0.442
North Central Coast	0.1019	0.1210	0.84	0.399
South Central Coast	0.4681	0.1125	4.16	0.000
Central Highlands	-0.5043	0.1536	-3.28	0.001
South East	-0.2321	0.1187	-1.95	0.051
Mekong River Delta	-0.5217	0.0957	-5.45	0.000
No education degree	(Omitted)			
Primary school degree	1.6399	0.0760	21.59	0.000

Explanatory variables	Coef.	Std. Err.	z	P>z
Lower secondary school degree	2.5211	0.1004	25.11	0.000
Upper secondary school degree	3.7837	0.1278	29.61	0.000
Technical degree	1.4076	0.2870	4.90	0.000
Post secondary degree	3.5270	0.3231	10.92	0.000
Per capita income (million VND)	0.0139	0.0055	2.50	0.012
Household size	-0.0826	0.0205	-4.03	0.000
_cons	4.4269	0.1596	27.73	0.000
Voluntary health insurance				
Male (yes = 1)	-0.3214	0.0417	-7.71	0.000
Age	0.0300	0.0019	15.89	0.000
Ethnic minorities (yes = 1)	-0.2032	0.3507	-0.58	0.562
Urban areas (yes =1)	0.0359	0.0938	0.38	0.702
Red River Delta	(Omitted)			
North East	0.4504	0.1612	2.79	0.005
North West	0.5700	0.3333	1.71	0.087
North Central Coast	0.5009	0.1927	2.60	0.009
South Central Coast	0.8922	0.1457	6.12	0.000
Central Highlands	0.1709	0.2035	0.84	0.401
South East	0.6117	0.1443	4.24	0.000
Mekong River Delta	0.5045	0.1196	4.22	0.000
No education degree	(Omitted)			
Primary school degree	0.0369	0.0853	0.43	0.665
Lower secondary school degree	0.2251	0.0966	2.33	0.020
Upper secondary school degree	0.4819	0.1228	3.93	0.000
Technical degree	0.6252	0.1289	4.85	0.000
Post secondary degree	0.9353	0.1999	4.68	0.000
Per capita income (million VND)	0.0071	0.0041	1.71	0.087
Household size	0.0096	0.0262	0.37	0.713
_cons	-3.9509	0.1976	-20.00	0.000
Pseudo R2	0.331			
Number of observation	35154			

Source: VHLSS 2008

Table 15 investigates correlation between individual and household characteristics with health care utilization and out-of-pocket spending. We use Poisson regression for the dependent variable which is the number of health care contacts, while OLS regression is applied for the dependent of out-of-pocket spending per health care contact. The table shows that all enrollment in all health insurance types are positively correlated with health care contacts, both outpatient and inpatient. Health insurances help the insured reduce out-of-pocket spending. All the estimates of health insurance are statistically significant. Although there can be self-selection biases in estimating causal effects of health insurance, especially for student and voluntary health insurance, the results are very encouraging.

Other public health variables also have interesting estimates are the number of doctors and nurses per 100,000 people at the provincial level. People who live in

provinces with high density of medical staffs are more likely to have health care outpatient contacts. However, the number of medical stations and hospitals are not strongly correlated with health care utilizations.

Individual characteristics including age, gender and ethnicity have expected sizes. Children below 6 years old, old people and female are more likely visit health care satiations than young and male people. Ethnic minorities are less likely to have health care contacts than Kinh and Hoa people. This might be because the access to health care services, especially high quality services in hospitals are quite limited for ethnic minorities.

Table 15: Regression of annual health care contacts and out-of-pocket spending per contact in 2008

Explanatory variables	Health care contacts (Poisson regression)		Out-of-pocket exp. per contact (OLS regression)	
	Outpatient	Inpatient	Outpatient	Inpatient
Having free health insurance and card	0.5676***	0.7861***	-141.928***	-1,213.02***
	[0.0525]	[0.0773]	[32.693]	[276.32]
Having compulsory health insurance	0.4266***	0.7440***	-198.468***	-1,265.874*
	[0.0891]	[0.1120]	[56.328]	[757.056]
Having student health insurance	0.2855***	0.3648***	-147.436***	-816.063**
	[0.0664]	[0.1308]	[28.080]	[379.570]
Having voluntary health insurance	0.6092***	1.1345***	-63.67	-575.868
	[0.0684]	[0.1447]	[43.357]	[407.648]
Number of public health establishments (excluding hospitals) per 100,000 people in the province	-0.0036	0.0031	-0.474	-24.407
	[0.0077]	[0.0103]	[3.439]	[39.706]
Number of public hospitals per 100,000 people in the province	-0.2127	-0.053	54.906	835.262**
	[0.1190]	[0.1219]	[79.416]	[422.859]
Number of doctors per 100,000 people in the province	0.0041**	-0.0022	-2.830**	10.378
	[0.0019]	[0.0029]	[1.278]	[13.832]
Number of nurses per 100,000 people in the province	0.0031***	0.0003	-0.359	-3.632
	[0.0010]	[0.0013]	[0.264]	[5.596]
Age below 6 (yes = 1)	1.4158***	1.4569***	-131.611***	-1,450.7***
	[0.0772]	[0.1563]	[34.188]	[414.73]
Male (yes = 1)	-0.2421***	-0.1283**	31.456*	674.989***
	[0.0278]	[0.0523]	[17.655]	[229.410]
Age	0.0225***	0.0207***	1.198**	13.684**
	[0.0011]	[0.0017]	[0.582]	[6.610]
Ethnic minorities (yes = 1)	-0.3833***	-0.2270**	-37.108	-574.712**
	[0.0712]	[0.1091]	[25.692]	[255.638]
Urban areas (yes =1)	0.0195	-0.0824	45.588	89.463
	[0.0519]	[0.0857]	[31.904]	[274.226]
Red River Delta	(Omitted)			
North East	-0.1362	0.1819	2.932	-499.61
	[0.0915]	[0.1184]	[26.425]	[415.451]
North West	-0.3110**	0.2671	13.039	-6.286
	[0.1382]	[0.1972]	[38.693]	[370.759]

Explanatory variables	Health care contacts (Poisson regression)		Out-of-pocket exp. per contact (OLS regression)	
	Outpatient	Inpatient	Outpatient	Inpatient
North Central Coast	-0.3270***	-0.053	0.479	303.256
	[0.0924]	[0.1058]	[34.950]	[426.226]
South Central Coast	0.2286***	0.2646**	-9.725	-788.941***
	[0.0867]	[0.1083]	[37.296]	[283.592]
Central Highlands	0.6437***	0.1373	-15.215	56.986
	[0.0933]	[0.1270]	[42.916]	[422.631]
South East	0.6193***	0.0085	25.176	684.469
	[0.0801]	[0.1360]	[62.454]	[462.057]
Mekong River Delta	1.1166***	0.1374	-150.523***	-248.919
	[0.0683]	[0.1023]	[29.454]	[306.845]
No education degree	(Omitted)			
Primary school degree	-0.0827*	-0.0748	16.065	-19.502
	[0.0494]	[0.0952]	[32.600]	[239.874]
Lower secondary school degree	-0.1366**	0.0535	20.855	423.234
	[0.0562]	[0.1021]	[32.368]	[353.460]
Upper secondary school degree	-0.4089***	-0.1962	62.111	771.003
	[0.0741]	[0.1357]	[42.710]	[484.458]
Technical degree	-0.2002**	-0.0682	127.600**	640.865
	[0.0860]	[0.1303]	[57.769]	[581.584]
Post secondary degree	-0.3470***	-0.0419	108.548	136.904
	[0.1180]	[0.1808]	[72.761]	[715.278]
Per capita income (million VND)	0.0011	-0.0037	5.633	54.004***
	[0.0009]	[0.0034]	[3.692]	[17.520]
Household size	-0.0768***	-0.0076	-3.842	121.066
	[0.0124]	[0.0222]	[4.022]	[77.401]
Constant	-1.3008***	-3.4646***	360.888***	346.722
	[0.1437]	[0.2194]	[79.823]	[851.511]
R-squared			0.019	0.061
Number of observations	38253	38253	12086	2584

Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Source: VHLSS 2008

5. Conclusions

During the past two decades, Vietnam has achieved remarkable successes in economic growth and household welfare improvements. Increases in per capita income of people go along with reduction in poverty and improvements in health. In the health sector, the government has implemented a large number of policies such as the National Strategy for People's Health Care 2001–2010, the program on health support for the poor and ethnic

minorities. As a result, Vietnam has obtained a large number of achievements in health care.

Vietnam have achieved better health indicators than countries with a similar development level, and Vietnam continues to improve at rates that equal or surpass those in most neighboring countries (Adams, 2005). Life expectancy is around 72. The maternal mortality ratio was reduced from 130/100,000 live births in 1990 to 75.0/100,000 live births (WHO, 2009). The under-five mortality rate also fell from 55.4% in 1990 to 25.9% by 2007 (WHO, 2009). The fraction of children with low weight at birth decreased from 7.3% in 2000 to 5.1% in 2005. The percentage of children under year olds with malnutrition was reduced from 33.8% in 2001 to 25.2% in 2005 (World Bank, 2007).

Health care facilities, both private and public, increased remarkably over time. The private sector has grown steadily during the past ten years. In 2004, there were 77 private hospitals in the country, accounting for 6.86 % of the total number of hospitals nationwide, with 5412 beds, accounting for 3.4% of the total number of hospital beds nationwide (MOH, 2008). The number of public hospitals, medical stations and medical staffs has been increased. The grassroots health network is strengthened. Until 2008, health staffs were available in 100% of communes and wards, including doctors in 65.1% of communes, a midwife or obstetric/pediatric doctor's assistant in 93.3% of communes, and health workers in 86.8% of villages (MOH, 2008).

Health insurance is expanded remarkably. The percentage of people above 5 years old having health insurance increased from 39% in 2004 to 53% in 2008. The percentage of people who are provided free health insurance and healthcare cards increased from 15% in 2004 to 21% in 2008.

The regressions analysis shows that health insurance is positively correlated with health care contacts, both outpatient and inpatient. In addition, health insurances help the insured reduce out-of-pocket spending. The number of doctors and nurses per 100,000 people at the provincial level also have positive impact of health care utilization. People who live in provinces with high density of medical staffs are more likely to have health care outpatient contacts.

However, there are still a number of challenges to health care in Vietnam. Access to health care services, especially health care services provided by hospitals remains limited for the poor, the ethnic minorities and those living in mountainous regions. The access to district and province hospitals is more difficult for mountainous regions such as North East and North West. There is a long distance from rural commune to a nearest district hospital in mountainous regions. The average distance from commune centers to the closest district hospital in the rural areas is 13.3 km, 22.5 km and 15.6 km for North

East, North West and Central Highlands, respectively. Distance to the provincial hospital is even much longer. When people need high quality health care services, they have to go to cities. As a result, hospitals in cities are often overwhelmed.

The number of health care contacts especially outpatient health care is low for the poor and ethnic minorities. Although the poor and ethnic minorities report a smaller number of not-working days and in-bed days due to sickness than the non-poor and Kinh/Hoa, the low health care contact would be resulted from limited access to health care services.

The health system is slow to renew and has not adapted itself to the development of a socialist-oriented market economy and changes in disease patterns (MOH, 2009). Pharmaceutical production and supply capacity remains weak. The price of pharmaceuticals remains very high for a developing country (MOH, 2009). The pace for revising or amending health policies that are no longer appropriate has been slow. The health management information systems are not internally consistent, and as a result there are often many overlaps (MOH, 2008).

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