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Out-of-pocket health expenditure for poor and non-poor older adults in Colombia: composition and trends

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Abstract

Colombia is a middle income country with a growing older adult population and the only country in Central and South America with Universal Health coverage insurance. The purpose of this article is twofold. First, it describes a simple methodology to estimate Out-of-Pocket (OOP) health spending by line items using the Colombian Living Standard Measurement Survey (LSMS). Second, it describes the composition of such spending and shows recent trends in OOP health expenditures between poor and non-poor older adults using three waves of the same survey. Annual OOP on health spending, as percentage of Gross Domestic Product (GDP), was 2.87, 2.59 and 2.33% for those years respectively. Personal hygiene represents the largest line item, followed by over-the-counter (OTC) drugs, dentistry services and transportation to the point of care. At the per-capita level, OOP spending on health care for older adults is also low, representing 3% of the legal monthly minimum wage for poor older adults and 9% for non-poor older adults. Nonetheless, a look at the composition of the OOP reveals that older adults are at a disadvantage due to the fact that OTC drugs represent the biggest share of their spending, 44% for the poor and 31% for the non-poor.

Introduction

Household out-of-pocket (OOP) health expenditure refers to the direct payments for services from the household's primary income or savings that are not covered or reimbursed by a third party and are deemed necessary for keeping or improving personal health (OECD/WHO/Eurostat, 2011). These payments are made at the time services are used and may include: full price for preventive (i.e. lab test) and curative (i.e. health services or drugs) care, partial payments under a cost-sharing mechanism (i.e. deductibles, copayments, service fees), and transportation costs.

Measuring OOP is important for health systems performance evaluation. At the household level, it shows the direct burden of healthcare costs that households bear, and thus allows researchers to identify whether the system protects families from falling into poverty as a consequence of unexpected healthcare expenses. The literature coined the term 'catastrophic' expenditure (Xu, 2005) when OOP on health exceeds certain threshold (varies between 20 and 40%) as a proportion of non-food expenditure. At the country level, as suggested in the literature (WHO, 2001; Knaul, Wong and Arreola-Ornelas, 2012; Knaul, 2012) OOP should be low, because it is the least equitable and most inefficient means of financing health systems.

A recent study by Fan and Savedoff (2014) found that almost every country exhibits two important health financing trends: health spending per person rises and the share of OOP spending on health services declines. The theoretical literature suggests that in both developing and developed countries, OOP spending on health is driven by microeconomic individual characteristics such as health insurance status, illness, age and sex, among other factors (Wagner *et al.*, 2011). Other studies suggest that a decline in OOP spending on health is explained by political and institutional change, because health insurance did not emerge as a market opportunity but as an initiative in community associations, cooperatives and other non-profit organizations (Savedoff and Smith, 2011). This health financing transition, as coined by Fan and Savedoff (2014), has had significant implications for public health, equity, and growth. Similarly, as suggested by the same authors, more resources devoted to buying more health services have certainly contributed to better population health, but 'it is the composition of spending and how it is spent that affects its efficiency and equity' (Fan and Savedoff, 2014).

Measuring how OOP impacts older adults is of high relevance for equity purposes, as this is a vulnerable population. Colombia is a middle income country in which the share of older adults is growing rapidly. According to population projection estimates by the Departamento Administrativo Nacional de Estadistica (DANE) – Colombia's government statistics agency (DANE, 2011)- in 2020, 8.5% of the population will be older than 65, almost double the share observed in 1985 (4.4%). By gender, in 2020, 9.4% of females and 7.6% of males will be older than 65.

Table 1 Colombia: Percentage of pensioners and income per capita

		Percent of pensioners		Average annual income (USD)		
Age Group	Total	Men	Women	Total	Men	Women
50–54	1.82%	1.62%	2.01%	6,226	8,840	3,782
55–59	4.17%	4.95%	3.46%	5,197	6,706	3,810
60–64	13.40%	9.22%	16.96%	5,543	6,641	4,611
65–69	20.92%	25.80%	16.53%	4,774	6,894	2,864
70–74	25.73%	33.44%	18.55%	4,853	6,620	3,209
75–79	25.35%	34.68%	16.82%	3,768	5,346	2,325
80–84	24.99%	33.89%	18.09%	2,831	4,118	1,833
85+	21.52%	22.61%	20.69%	2,311	2,450	2,204

Source: Colombia LSMS 2011

In addition, according to the 2012 Living Standard Measurement Survey (LSMS) older adults in Colombia are financially insecure. As shown in Table 1, at best 1 in 4 older adults have monthly income coming from a pension, with women less likely to be collecting income from that source. Similarly, older adults have the lowest average annual income per capita, with women earning as low as half of what men earn.

Colombia is the only country in Central and South America to have Universal Health (UH) coverage under a managed competition health care system similar to that of Germany, Israel and the Netherlands. Results from studies evaluating the impact of universal health insurance (UHI) in Colombia show that it has greatly increased access to and use of health services for the poor (Giedion, Díaz *et al*., 2007) and for the non-poor (Giedion, Alfonso *et al*., 2007); has reduced the incidence of catastrophic health spending (Flórez *et al*. 2009, Flórez *et al*., 2012); and has had measurable health gains for the poor (Miller *et al*., 2013).

The purpose of this article is twofold. First, it describes a simple methodology to estimate OOP health expenditure by line items using the Colombian LSMS. Second, it compares recent trends in OOP health expenditures between poor and non-poor older adults using three waves of the same survey.

The Colombian Health Care System[1]

In 1993, the Colombian health system was re-designed from a fragmented system with very low coverage to a system based on managed competition following an innovative model called Structured Pluralism (Londoño and Frenk, 1997). The main features of the health system are fourfold. First, the healthcare system has two major regimes: the Subsidized Regime (SR) and the Contributory Regime (CR). The SR is the UH System for the poor and, to be eligible for this, a means test is applied by local governments. The CR is the UH System for the non-poor, defined as salaried workers and all other people that are not eligible for the SR. Aside from these two, there are special schemes for teachers, the military and employees of public universities. By December 2013, 42.7% of the Colombian population was covered by the CR, 48.1% by the SR, 2.4% by special regimes, and the remainder 6.8% was not covered. The uninsured include individuals that are difficult to reach such as the homeless. For the latter, care is given at emergency rooms and paid for by local governments.

The CR Regime is funded through mandatory contributions from both employees and employers. The SR regime is funded with general taxes. Both CR and SR populations are entitled to the same benefits package defined by law. However the two regimes are administratively separate and have separate regulations due to their different financial schemes.

Second, there is competition among Health Management Organizations (called Entidad Promotora de Salud -EPS) that receive a risk-adjusted, per-capita payment from a national central fund according to the number of people enrolled. In 2014, there were 15 EPS in the CR and 33 EPS in SR. An EPS can insure people in any region of the country but cannot be in both regimes at the same time.

Third, there is competition at the provider level. Each EPS contracts selectively so that providers compete to be included in its network. Nonetheless, competition is not the norm in the country, in 43% of the municipalities the only provider is the public hospital (Guerrero, Prada y Chernichovsky, 2014; Guerrero, 2014); and there is a documented shortage of physicians and specialist due to market failures in the education system (Ruiz and Uprimny, 2012) and incentives to migrate (Astor *et al*., 2005). Lastly, the fourth feature is the availability of a supplemental insurance private market that caters to the rich.

In the past 20 years, the system achieved several of its goals: health-insurance coverage is nearly universal, access in both urban and rural increased notably and OOP expenditures decreased substantially (Glassman *et al*., 2009). Nonetheless, these achievements are not equally spread around the country, even within large cities. Several regions and populations are critically underserved (Cotlear *et al*., 2014).

In addition, there are cost-sharing mechanisms such as copayments and user-fees as a cost-control measure. Although regulated by the government, EPS can abstain from charging them. These payments depend on the regime, and on individual characteristics such as income, whether one is the policy holder or beneficiary, health status and service type (ie, lab test, outpatient visits to specialists, etc).

Data and Methods

Due to its nature, there are both practical and conceptual difficulties to estimate OOP on health spending. The conceptual difficulty relates to which items to include. For instance, the official Ministry of Health figures do not include transportation costs in urban areas. Previous estimates of OOP for Colombia are available (Barón, 2007; Florez *et al*., 2007; Fedesarrollo, 2012) but these lack transparency on which items were included. The practical difficulty relates to the task of identifying reliable sources of information for estimation. For instance, there are no publicly available data on over-the-counter (OTC) drugs sold in pharmacies around the country.

The source of information is the LSMS collected by DANE (DANE, 2011). This is the most complete survey measuring socioeconomic conditions in Colombia, and implements a

[1]1A detailed description of the health system characteristics can be found in Giedion and Villar (2009), Chernichovsky et al. (2012) and Guerrero et al. (2011).

Table 2 Estimation of OOP health expenditure using the LSMS (2008, 2010 and 2011)

	2011 Constant million dollars			Percentage (2011)	
	2008	2010	2011[a]	w/PH	w/o PH
Health care expenditures section					
How much is your mandatory contribution to the healthcare system?	314	326	344		
1. Voluntary private insurance	86	91	87		
1.1 Hospital and surgery insurance	10	9	6		
1.2 Prepaid health plans	64	71	73		
1.3 Supplementary health plans	21	15	9		
1. 4 Other (Home, Ambulance, etc.)	9	7	5		
2. Payment for outpatient visits in the past 30 days (due to illness)	39	30	22	3.4	5.7
3. User fees	13	11	11	1.7	2.7
4. Copayments and other cost-sharing in private health plans	7	5	8	1.2	1.9
5. Outpatient visits	29	23	19	3.0	4.9
6. Dentist visits or dental treatment	70	57	60	9.3	15.5
7. Vaccines	4	6	6	0.9	1.5
8. OTC Drugs	109	101	89	13.8	23.0
9. Clinical laboratory, X-rays, diagnostic tests	22	22	17	2.6	4.4
10. Transportation to the site of care	46	46	46	7.1	11.9
11. Rehabilitation or Therapy	5	5	5	0.8	1.3
12. Alternative medicine therapies	7	8	9	1.4	2.3
13. Lenses, Hearing aid or Orthopedic Devices	16	17	20	3.1	5.2
14. Outpatient surgery or other procedures	15	12	12	1.9	3.2
15. Hospitalization	11	13	11	1.7	2.8
Households main survey					
16. Personal Hygiene (PH)	258	251	258	39.8	
17. Doctor's bag medicines	13	11	10	1.6	2.6
18. Regularly consumed medicines	43	44	43	6.6	11.0
Monthly out-of-pocket health expenditure (Items 2–18)	709	660	647	100.0	
Out-of-pocket health expenditure as a percentage of GDP	**2.87**	**2.59**	**2.33**		
Monthly out-of-pocket health expenditure (2–15, 17,18)	451	409	389		100.0
Out-of-pocket health expenditure as a percentage of GDP	**1,83**	**1,61**	**1,40**		

Source: Departamento Administrativo Nacional de Estadística: www.dane.gov.co.
[a]USD 1 = 1848.17 COL.

clustered, multistage, stratified and probabilistic sample of households: 13 800 for 2008, 14 801 for 2010 and 25 364 for 2011. The Survey is representative at the national level, for urban and rural areas, and by regions. The data collection method is direct interviewing using a Data Capture Device and all respondents must be adults. The survey has 12 chapters split into two questionnaires, the household survey and the adult survey. The household survey asks questions that have to be completed by all of household occupants. The adult survey is completed by the household head.

In 2008, 2010 and 2011, the LSMS included a health chapter to obtain information about the implementation of the UH program for the country on issues concerning the affiliation of the population by regime; the population affected by chronic illnesses; and health expenditures, amongst others.

Table 2 gives the list of all items in which people declared to have paid OOP in the adults' survey. The reference period for questions in this survey is the last 30 days, with the exception of 'Lenses, Hearing aid or Orthopedic Devices' and 'Outpatient surgery or other procedures' for which the reference period is the previous year. For these two questions, spending is divided by 12 to make it reference-consistent with other questions. Additionally, two questions from the main household survey were added: first, 'Payment for outpatient visits in the past 30 days (due to illness)'; and second, 'How much, in total, did you pay for this hospitalization' only if the source used to cover the costs was 'own resources' (other options were: EPS, supplemental health insurance, car accident insurance, the State or the municipality). Survey weights were used to estimate country-level figures.

Excluded from the OOP calculation shown in Table 2 are: (1) mandatory contributions to the health system and (2) expenditure in any kind of voluntary private insurance (ie, private health plans, healthcare policies, ambulance insurance, car accident insurance, and etc). Although the latter are paid OOP, they involve third-party payers. Lastly, items of personal hygiene are included because of its preventive nature. This is worth noticing because, on average for the 3 years, this expenditure represents 38% of OOP health expenditure.

Table 3 Comparison of Mandatory contributions to the Health System and LSMS estimations

	2011 constant million dollars[a]		
	2008	2010	2011
Employee	155	151	156
Independent	55	64	67
Pensioner	82	79	93
None	22	31	27
Total	**314**	**326**	**344**
Total contribution as per LSMS	**7,709**	**7,772**	**8,100**
Total contribution as per Ministry of Finance (FOSYGA)	**7,084**	**7,396**	**7,700**

Source: FOSYGA. DANE: www.dane.gov.co. Authors' calculations
[a]USD 1 = 1848.17 COL.

To estimate annual expenditure we multiplied each figure by twelve. This can be a limitation due to the fact that some expenses are not constant throughout the year such as surgeries and hospitalization.

The survey has two different questions on OTC drugs. The first one, asked directly to each one of the household members, inquires about drugs bought due to sickness episodes in the last month (e.g. antibiotics) (Item 8 in Table 2). The second one, asked only of the household head, inquires about OOP expenses for regularly-bought drugs such as those for chronic conditions (Item 18 in Table 2). Since these questions are asked in different surveys, individual and household, it is not possible to rule out whether there is double counting due to respondent misinterpretation of the questions.

For analytical purposes the 18 items in Table 2 are grouped into six categories: outpatient services, dental treatment, OTC drugs, transportation to the point of care, hospitalization and voluntary medical insurance. Although the latter is not part of OOP as explained before, it is included for comparison purposes.

Lastly, in this article the health system regime to which an individual belongs is used as a proxy for poverty status. The reason is that to be included in the publicly financed health insurance program, namely the SR, a household is subjected to a poverty-targeting index. The index measures different aspects of household well-being such as housing material, access to public utilities, ownership of durable assets, demographic composition, educational attainment, and labor force participation. On each dimension, households are classified according to mutually exclusive, collectively exhaustive categories with varying weights assigned to each category; these weights vary between urban and rural areas. A household's score is then calculated by summing points across components. Households scoring below a certain threshold are considered the most impoverished and thus eligible for free health insurance.

Older adult consumers are defined in this article as those aged 65 and older. All figures are measured in 2011 constant prices after adjusting for the Colombian Consumer Price Index for healthcare goods and services. Figures are shown in constant USD dollars of 2011 using the average exchange rate of 2011 (1 USD$ per 1848.17 COP$).

Results

Table 2 shows the selected items and the estimated OOP spending on health services for 2008, 2010 and 2011 for the country. The table also gives estimations as a percentage of GDP, with and without personal hygiene items. Annual OOP on health services, as percentage of GDP, was 2.87, 2.59 and 2.33% for those years respectively. Personal hygiene represents the largest line item, followed by OTC drugs, dentistry services and transportation. As seen in the same table, personal hygiene items account for 40% of the total OOP in 1 month, and thus it is easy to understand why it is debatable whether to include it. In addition, these calculations show that OOP is also decreasing in real terms.

A common critique to estimations using LSMS is that respondents are subject to recall bias: the ability of individuals to remember precisely an amount. To correct for recall bias it would be necessary to have access to households' actual sales

Table 4 Monthly OOP health expenditure per-capita by poverty status and age groups 2011

	Dollars[b]				Percentage of OOP			Ratio OOP older adults/working age	
	16–64		64+		64+		64+		
OOP Groups	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Poor/Non-Poor	Non-poor	Poor
Outpatient services (2, 3, 4, 5, 14)[a]	3,15	1,04	5,41	2,00	22,8%	23,8%	0,37	1,7	1,9
Dental treatment (6)	2,87	0,40	3,44	0,22	14,5%	2,6%	0,06	1,2	0,6
OTC Drugs (8)	2,24	1,51	7,31	3,66	30,8%	43,7%	0,50	3,3	2,4
Transportation to the site of care (10)	1,32	0,72	4,12	1,51	17,4%	18,1%	0,37	3,1	2,1
Other (7, 11, 12, 13)	1,51	0,52	2,02	0,54	8,5%	6,5%	0,27	1,3	1,0
Hospitalization (15)	0,25	0,18	1,43	0,45	6,0%	5,4%	0,31	5,7	2,4
OOP spending on health	**11,33**	**4,36**	**23,72**	**8,38**	100,0%	100,0%	0,35	2,2	1,9
Voluntary private insurance (1)	4,42	0,07	9,59	0,01				2,1	0,2
Total spending on healthcare	**15.75**	**4.43**	**33.31**	**8.40**					

Source: Departamento Administrativo Nacional de Estadística: www.dane.gov.co. Authors' calculations.
[a]Shows the corresponding items in Table 2.
[b]USD 1 = 1848.17 COL.

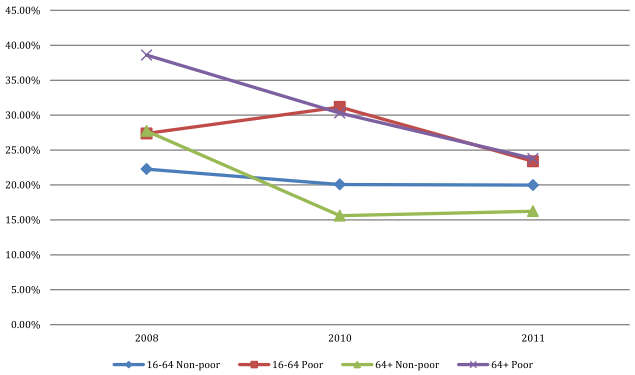

Figure 1 Budget share of Outpatient services by age and poverty level: 2008, 2010, 2011.

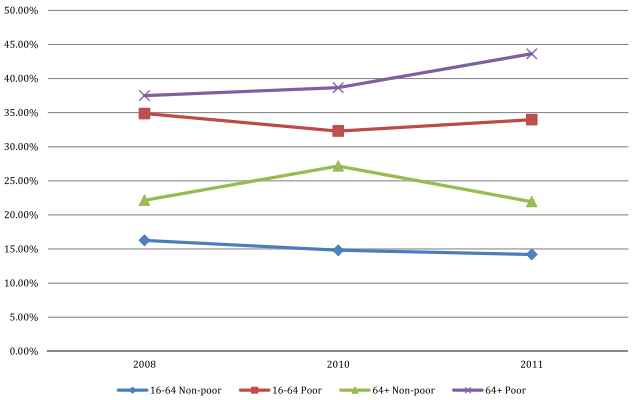

Figure 3 Budget share of OTC Drugs by age and poverty level: 2008, 2010, 2011.

receipts or to compare aggregate figures to aggregate sales data by industry. No such data sources are available in the country to verify data in Table 2. Nonetheless, the Colombia's LSMS provides one question to partially test recall bias against administrative data. In particular, the survey includes a question about the monthly mandatory contribution made to the Health System. The data can be compared to official records available online at the Ministry of Finance website. Table 3 shows that the estimate using survey data is similar to the administrative source. While this result should be interpreted cautiously, because mandatory payments are a monthly fixed amount (i.e. easier to recall), the fact that there is a coincidence between the two sources makes the calculations more reliable.

Table 4 describes monthly OOP health expenditure by groups of goods and health services, by poverty status (where the poor are those in the subsidized scheme) and by age groups. In total, OOP for poor older adults is USD 8.4 and USD 23.7 for non-poor older adults. To put this number in context considerer that for 2011 the legal monthly minimum wage in Colombia was USD290 and the daily minimum wage was USD 9.7. In other words, OOP for poor older adults is worth one daý s work, and represents 3% of the legal monthly minimum wage. For non-poor older adults, OOP is almost three times higher than for poor older adults.

By groups, OTC drugs account for 31% of total OOP for non-poor older adults and for 44% of total OOP for poor adults. Outpatient services are the second largest item, accounting for 23 and 24% for non-poor and poor older adults OOP respectively. The third item by type of services is transportation to the point of care, accounting for 17 and 18% for non-poor and poor older adults OOP respectively. Also shown in Table 4, when compared to the working population older adults have a higher OOP. This fact is not surprising because demand for healthcare services increases with age.

Table 4 also gives the ratio of OOP for the poor to the non-poor older adults by consumption groups. As seen, there is no group in which the poor spent more than the non-poor; on average the pooŕs OOP is about 35% of the non-poor older adults.

The ratio of per capita OOP health expenditure for older adults as compared to the working population was also computed and is presented in Table 4. For the non-poor, the group item with the highest ratio is 'Hospitalization', meaning that in these services older adults spent 5.7 times more money than working adults; in OTC drugs the ratio is 3.3 and in transportation to the point of care is 3.1. The analysis for the poor is similar in terms of consumption groups, but lower in magnitude. Poor older adults spent 2.4 times more money in hospitalizations and in OTC drugs than the poor in working age (18–64). Interestingly, poor adults had lower OOP than working age adults in dental treatment.

As explained above, the health chapter of the LSMS was available for three waves: 2008, 2010 and 2011. Figures 1–6 plot data for these three waves measured as share of total OOP

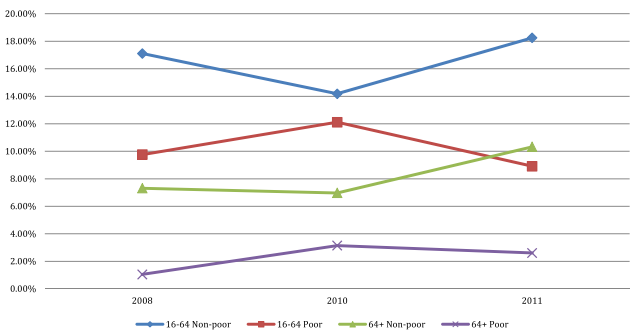

Figure 2 Budget share of Dental treatment by age and poverty level: 2008, 2010, 2011.

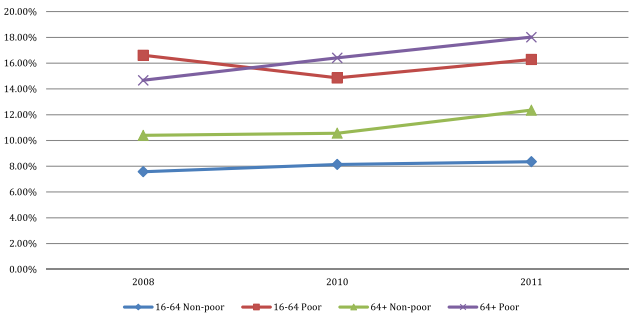

Figure 4 Budget share of Transportation by age and poverty level: 2008, 2010, 2011.

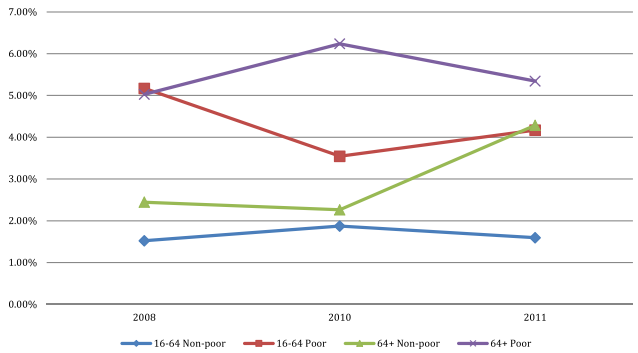

Figure 5 Budget share of Hospitalization by age and poverty level: 2008, 2010, 2011.

(including private insurance), for each group of services, and comparing working adults to older adults by poverty status. Briefly, outpatient services show a downward trend for poor adults. Dental treatment, OTC drugs, and transportation costs on the contrary, show an upward trend for older poor adults. For non-poor older adults outpatient services show a downward trend as well, OTC remains at similar levels, while dentistry, transportation and inpatient services gained share. Private insurance represents 30% of budget share for the non-poor, and basically it is nonexistent for the poor. Interestingly, for the working non-poor population, shares remain somewhat constant, with dental treatment gaining share and private insurance losing it.

Discussion

This article provided estimates of OOP spending on health for Colombia by age groups, by poverty status and by consumption items using three waves of Colombiás LSMS. Annual OOP health expenditure as percentage of GDP for the country was 2.87, 2.59 and 2.33% for 2008, 2010 and 2011 respectively. Such a downward trend is consistent with other countries worldwide (Fan and Savedoff, 2014) and with other studies for Colombia (Ruiz *et al*., 2013), and suggests that the Colombia's UH insurance system has evolved towards becoming better at protecting households from financial hardship due to illness. This is even more relevant when taking into consideration that

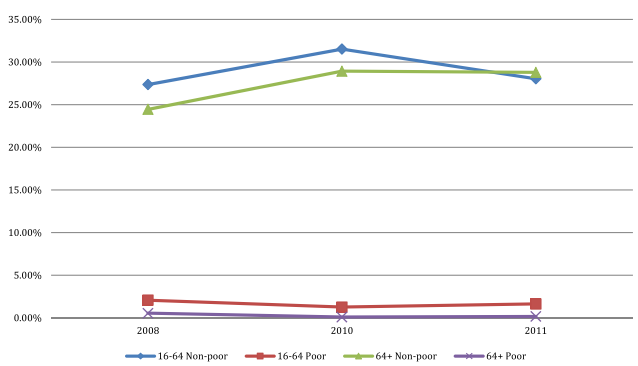

Figure 6 Budget share of Private insurance by age and poverty level: 2008, 2010, 2011.

older adults are characterized by financial insecurity, with one in four receiving a pension and with the lowest income among all age groups.

As expected, because demand for health services increases with age, older adults spent OOP on average twice as much in healthcare goods and services than people in their working age. By consumption groups, the lion share of OOP for older adults is on OTC drugs, accounting for 31% for the non-poor and 44% for the non-poor; followed in relevance by outpatient services and transportation to the point of care. Also, between 2008 and 2011, the share of OTC in total budget for the poor shows an upward trend.

Taken together these results suggest that consumers, and especially the poor, remain more vulnerable that the non-poor to abuse and to catastrophic expenditure, in particular because regulation in the market for drugs remains weak in Colombia. Just as recent as 2012 the Colombian government identified 'unequal access to drugs and low-quality of the care provided' as the central problems regarding its pharmaceutical policy (CONPES, 2012). According to the same document, there are deficiencies in several aspects such as: insufficient monitoring on false or deceptive advertisement; lack of information systems on prices charged to final consumers; scarcity in essential drugs; and, uncertainty about the size of the market for counterfeit medicines; among others (CONPES, 2012).

The second issue that is concerning is the fact that consumers reveal that transportation cost to the point of care is the third largest item in their OOP spending on health care. Transportation costs become effectively an access barrier to healthcare with negative consequences for both the patient and the system. Less access to healthcare may mean lower quality of life, less productivity and a higher burden of disease. Sicker patients are costlier, as they are more likely to visit emergency rooms and to have longer inpatient stays. This article found that non-poor older adults spent 3 times more on transportation costs than working adults and poor older adults 2.1 times more. Along the same lines, the fact that OOP spending on health services for poor older adults is too low may also be a sign of lack of access to healthcare goods and services instead of a sign of higher financial protection.

In sum OOP spending on health care for Colombia is low, accounting for 2.33% of GDP in 2011. At the per-capita level, OOP spending on health care for older adults is also low, representing 3% of the legal monthly minimum wage for poor older adults and 9% for non-poor older adults. Nonetheless, a look at the composition of the OOP reveals that older adults are at a disadvantage due to the fact that OTC drugs represent the biggest share of their spending and this is a market where abuse is more likely to happen due to poor government regulation and market failures.

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