

ECONOMÍA

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DOCUMENTOS
DE
TRABAJO

No. 14 / Marzo 2007

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*(Documento de Trabajo, citar con autorización de los
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Health insurance as a strategy for access: Streamlined facts of the Colombian Health Care Reform*

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Abstract:

The Colombian reform to the health system (Law 100 of 1993) established, as strategy to facilitate the access, the universality of a health insurance that is acquired by means of the quotation in the contributive regime or by means of the gratuitous affiliation to the subsidized regime, in order to cover all the population with a unique plan of benefits that includes services in all levels of complexity. In this paper we intend to cover the main streamlined facts of the reform as far as coverage and access of the insurance, by means of logit models, the determinants of the enrollment and the access are considered, using data from the Living Standards Surveys of 1997 and 2003. It stands out that the coverage rose from 20% of the population in 1993 to 60% in 2003, although it seems very difficult to reach the universality; the structure and evolution of the coverage show that both regimes complement each other, while the contributive one has greater presence in the cities and among the population with formal employment, the subsidized one has greater weight among the rural population and in those with low levels of income; on the other hand, the insurance has advantages for the subsidized population, with a greater probability for use of the services, although the plan offers less benefits than the contributive one there are some barriers for the access.

Key words: *health insurance, access, enrollment (affiliation), social security, Colombia.*

Resumen:

La reforma colombiana al sistema de salud (Ley 100 de 1993) estableció, como estrategia para facilitar el acceso, la universalidad de un seguro de salud que se adquiere mediante la cotización en el régimen contributivo o mediante la afiliación gratuita al régimen subsidiado, con la meta de cubrir a toda la población con un plan de beneficios único que comprende servicios de todos los niveles de atención. En el documento se analizan los principales hechos estilizados de la reforma en cuanto a cobertura del seguro y acceso y, mediante modelos logit, se estiman los determinantes de la afiliación y del acceso, con datos de las encuestas de calidad de vida de 1997 y 2003. Se destaca que la cobertura pasó del 20% de la población

* This document was presented at the 5th World Congress of the International Health Economics Association, we gratefully acknowledge the comments of the Congress assistants.

Las opiniones aquí expresadas son responsabilidad de los autores y por lo tanto no deben ser interpretadas como propias de la Facultad de Economía ni de la Universidad del Rosario

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en 1993 al 60% en 2004, aunque parece imposible alcanzar la universalidad; la estructura y evolución de la cobertura muestran que los dos regímenes son complementarios, de modo que mientras el contributivo tiene mayor presencia en las ciudades y entre la población con empleo formal, el subsidiado tiene mayor peso entre la población rural y con bajos niveles de ingresos; por otra parte, el seguro tiene ventajas para la población subsidiada, con una mayor probabilidad de utilización de servicios, aunque el plan es inferior al del contributivo y existen barreras para el acceso.

Key words: *seguro de salud, acceso, afiliación, seguridad social, Colombia.*

1. Introduction

In 1993 Colombia makes a deep reform to its social security system, switching from a public monopoly to a model of private participation made of three components or subsystems: pensions (retirement allowances), health and worker compensations. In the health component a mandatory insurance is stated, it is intended to globalise the coverage of this health plan, the supply subsidies are switched to the demand in a scheme where the money follows the consumer and a new institutional surrounding is created where the conformation of a market of regulated competition stands out.

The Colombian reform was adopted by means of Law 100 of 1993 and its implementation began in 1995. The Law created the General System of Social Security in Health (SGSSS, for its initials in Spanish) and assigned two objectives to it: to regulate the essential public service of health and to create conditions of access of all the population to health care services at all levels of attention. The cornerstone of the reform consisted in the definition of an insurance upon. The principles of solidarity, universality and efficiency for all Colombians, therefore it established the contributive regime for the population with paying capacity - the workers with their families - and the subsidized regimen for the population with limited resources or without capacity of paying: poor population. The former regime is financed with a specific payroll tax of 12%; eight points are assumed by the employer and the remaining four by the employee. The latter regime is financed with public funds and with the contributions of solidarity that the population of the contributive regime makes (one of the twelve payroll points). Thus, the solidarity relies on the fact that everybody pays according to his financial capacity but everybody receives according to his health needs [1, 21].

Before Law 100, approximately 75 to 80% of Colombians were uninsured [2] and their attention would be provided by public hospitals through supply subsidies (“charitable attention”); a 5% were covered by family equalization funds, mutuels or some other type of insurance paid by the employer; a minority had private insurances paid of their own or subsidized by the employer and an 18% were enrolled in the Institute of Social Security (ISS, for its initials in Spanish), basically the workers not their families. The reform to the contributive regime implied a vertical disintegration between the functions of purchasers (assurance) and providers, as well as the opening of the health insurance market, so that the ISS would be faced with the competition of new, private or public, insurers created thereon [3].

While a universal coverage to a same Mandatory Health Plan is obtained (POS, for its initials in Spanish) the Law defines a period of transition during which the uninsured (named by the Law 100 as the “tied”) will receive attention from the government via supply subsidies in in-the-net public hospitals and medical centers, those in the contributive will receive a full coverage plan, called POS-Contributivo (“full POS”) and those in the the subsidized will receive temporarily a limited coverage plan, called POS-Subsidiado (“limited POS”). See Table 1.

The POS offers integral protection in health care to the affiliated population in its phases of education, information, promotion and prevention of health, diagnosis, treatment and rehabilitation, including the provision of essential medications in their generic name, for the different types of services and at all levels of complexity. Also, the POS Contributivo includes the granting of an economic benefit for temporary medical incapacity due to general disease, paternity and maternity leaves of absence.

With respect to the efficiency principle, a market atmosphere is created where the private sector is involved, theoretically in equal conditions to that of the public; the supply subsidy that financed public hospitals is switched to the demand subsidy that promotes the enrollment to the subsidized regime; a new sectorial organization is devised based on competition which includes redefinition of features and performers; the free negotiation between insurers and providers is fostered and the insurers are reimbursed with a weight capitation, according to age, gender and geographical location. This is to contribute to cost containment, induces the investment in health and rational cost attention[4]. This payment is reimbursed to the insurers as a fixed amount for each affiliated; up-to-date its yearly rate is US\$156 for the POS-C and US\$87 for the POS-S.

TABLE No 1

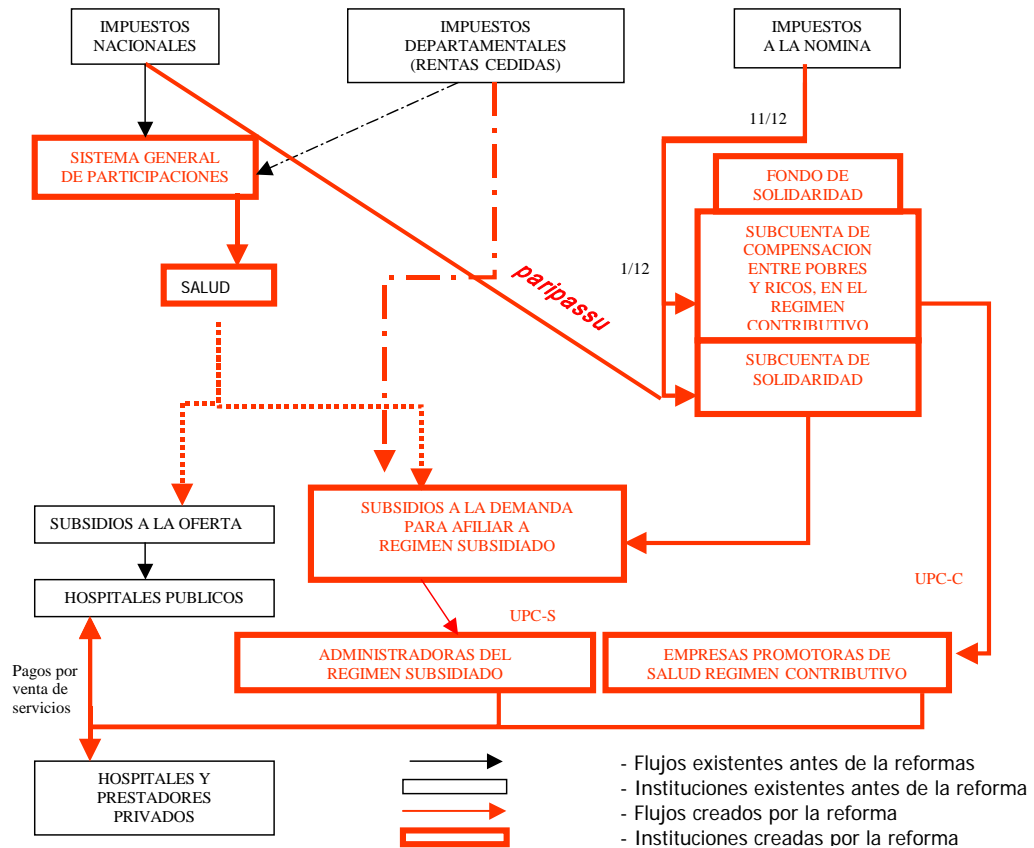
Services/benefits of the Mandatory Health Plan (POS)

Services/Benefits	Contributive Regime	Subsidized Regime
Medical visits and services	Yes, extensive	Yes, extensive
Dentistry	Yes, extensive	Yes, extensive
Ambulatory drugs	Yes, essentials' list	Yes, essentials' list
Emergencies and priority attention	Yes, extensive	Yes, extensive
Surgical Procedures	Yes, extensive	Yes but restricted
No Surgical Procedures	Yes, extensive	Yes but restricted
In-hospital services	Yes, extensive	Yes but restricted
Promotion and Prevention activities and programs	Yes, extensive	Yes, extensive
Home Care	Yes but restricted	Yes but restricted
Diagnosis tests	Yes, extensive	Yes but restricted
Catastrophical diseases and transplants	Yes, extensive	Yes, extensive
Rehabilitation and ancillary stuff	Yes, extensive	Yes but restricted
Maternity, paternity and temporary incapacity bonus (\$)	Yes, for worker	none
Infertility, experimental and aesthetic treatments	none	none

The stewardship of the SGSSS is responsibility of the Government, who as well presides over the National Council of Social Security in Health (CNSSS, for its initials in Spanish) as maximum entity that, among other functions, defines the coverage and the capitation value of the POS. In these conditions, the health insurance entities (Empresas Promotoras de Salud, EPS, for its initials in Spanish) are created as the ones responsible for the enrollment and the collection of the quotations and with the basic function to organize and guarantee directly or indirectly, the services and benefits of the POS. That is, the EPS are the insurers that must guarantee the access to the POS Contributivo, while the insurers of the subsidized regime are name Subsidy Regime Administrators (ARS, for its initials in Spanish). See Graph 1.

The insurance per se is valid as long as it offers real protection form risk, where it is important to do a follow up not only of the coverage but also to access as a quality indicator of the insurance and visible impact of the reform[5]. By access we understand the capacity of people to look for and to obtain assistance in health, moreover it means a process that includes the need, the wish of assistance, its search, beginning and continuation[6]. Therefore, this process involves diverse determinants that facilitate or hinder it, among which the insurance is an important part of the dowry of people to request (demand) and to receive health services[7].

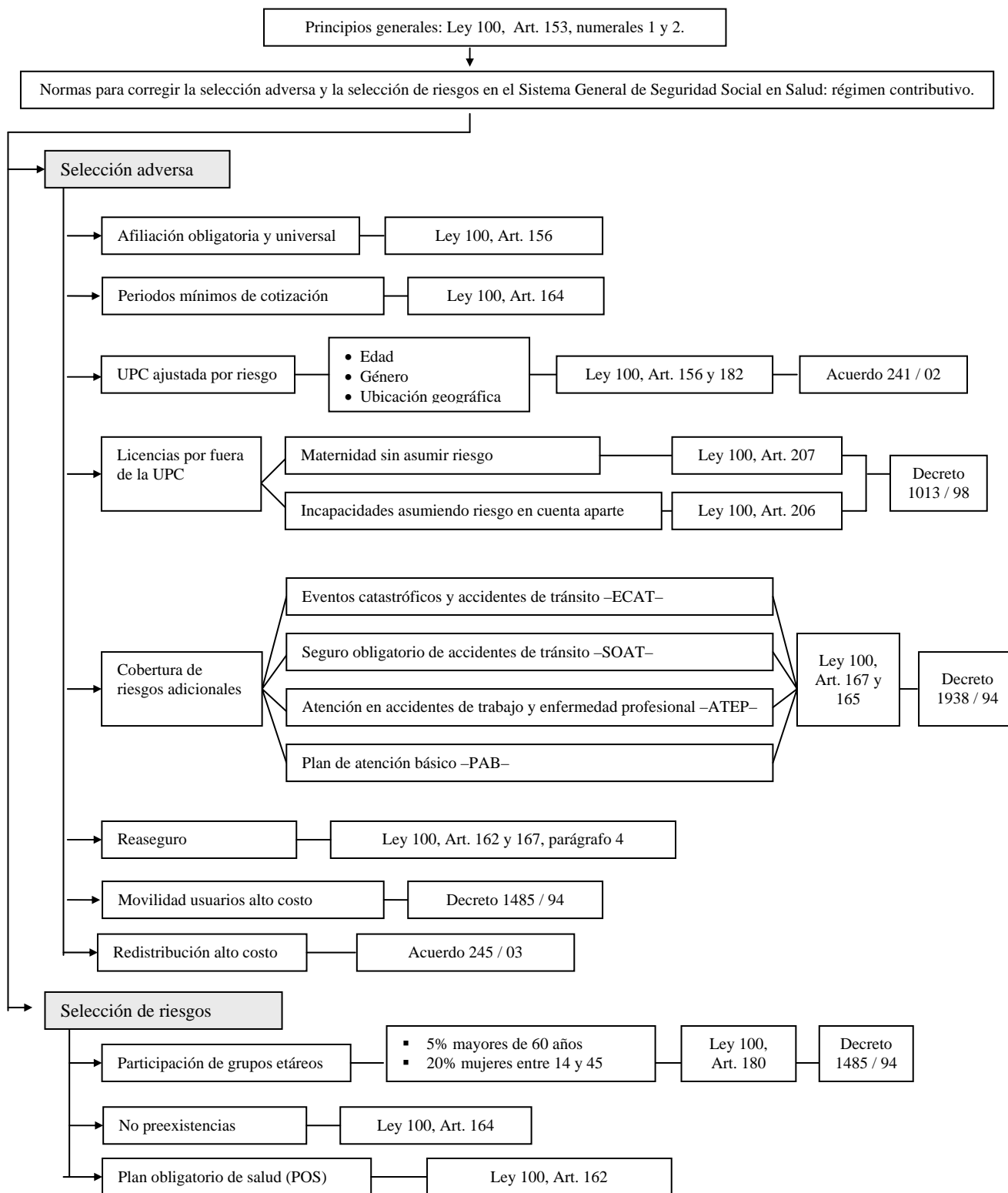
GRAPH No 1



Fuente: Ramón Abel Castaño

Regarding to adverse selection, some penalties are settled for the no permanence in the system and uncovered periods (waiting time) are created for some services. The insurers are banned to make risk selection and people are entitled to freely choose the insurer among those in the market upon the premise that they all offer equal conditions of quotations (costs) and benefits (insurance contract). Additionally, the insurers are required to fulfill, among other conditions to avoid biased selection[8] in the enrollment process, some minimum socio-demographic conditions of their affiliates[9]; for example, at least 5% of their members must be older than 60. (see graph 2). To face problems related to Moral Hazard[22], as well, the SGSSS states some alternatives from the perspective of the consumer as well as from the supplier. See Table 2.

GRAPH No 2 Regulatory environment regarding Adverse Selección and Risk Selection in the Colombian Health Social Security System: Contributive Regime.



From: Grupo de Economía de la Salud. “Selección adversa en el régimen contributivo de salud: el caso de la EPS de Susalud”. Borradores del CIE, No. 10, Medellín marzo de 2004 (<http://agustinianos.udea.edu.co/economia/ges>).

TABLE No 2**Issues controlling for Moral Hazard**

Consumer	Provider
Copayments	Capitation
Moderator payments	Freedom of purchasing (Market environment)
Top in incapacity bonus	Managed Care
Incentives for promotion and prevention	Providing profiling

Colombia faced problems of inequity, inefficiency and poor health care access that motivated the reform [21]. The new health system shows two strategy-oriented highlights for middle and low income countries in order to solve the problem of access and the general health condition, in which the exclusion and inequity stand out. On the one hand, the Colombian system is formulated aimed at offering a universal enrollment in health, seeking the coverage of the whole population with a rather wide set of services. On the other hand, this insurance is stated as a solution to the access barriers, specially of the economic type, with the participation of private agents and a market environment in its supply. This way, it is interesting to know the results of the two highlighted aspects of the Colombian system: coverage of insurance and access. Thus, this paper explores and analyzes several issues about the coverage of the health insurance in Colombia for the past ten years, some evidence and data are screened regarding to access and the determinants of both aspects are estimated in an attempt to know the scope and the limitations that the Colombian system faces to meet its goal in terms on universality. These inquiries are approached in this paper following the format of scientific publications, so in the second section the objectives are presented, in the third the methodology, in the fourth the results and finally, in the fifth, the discussion and conclusions.

2. Objectives

The objectives of this paper are oriented to examine the achievements of the Colombian reform regarding to the coverage of the insurance and its efficacy in terms of access to health care assistance. Particularly, there are four objectives. First, to analyze the evolution of the coverage during the first ten years of the reform in health (1995 - 2004), emphasizing the main streamlined facts for the contributive regime as well as the subsidized. Second, to analyze the existent barriers of access for people according to their type of affiliation to the system. Third, to establish the determinants for enrollment (affiliation) to the contributive regime, trying to explain the stagnation in its coverage. And fourth, to establish the determinants of access to health care services, based on General Physician visits of the ill population.

3. Methods

Two procedures are used to approach the raised objectives. First of all, to examine the streamlined facts descriptive statistics were used on coverage and service usage, and some studies referring to the same topics were considered as well. Secondly, to establish the determinants of the enrollment (affiliation) and the access some logit type models were built.

The commonly used models when the dependent variables are dichotomizing are the logit models. These seem appropriate to meet the determinants of the affiliation and access due to the fact that the decision to whether enroll or not to the system and whether to use or not the medical

services when a person is ill are dichotomizing variables. The functional form of the logit models is[10]:

$$y_i = \frac{1}{1 + e^{-(x_i' \beta + \varepsilon_i)}}$$

Where y_i represents the probability to enroll or the probability of using the medical services, according to the case; x_i is the vector of explanatory variables; β is the parameter to consider; and ε_i is the error of the estimation. The linear transformation of this model is expressed as

$$\text{logit}(y_i) = \ln \frac{y_i}{1 - y_i} = x_i' \beta + \varepsilon_i$$

The estimation was made through the method of Maximum probability, having used Stata 8.0.

For the first model, on the determinants of the enrollment, the dependent variable is when the person quotes to be in the health social security system through the contributive regime, since the person works and is informal. The people that are considered informal are those who are blue collar workers, chiefs or employers of a private enterprise with less than 10 workers, day laborers, housekeepers, nonprofessional independent workers, workers of their own farm and workers without wage. The reason to only consider the informal workers is because formal workers are forced to enroll by law, for there is not other determinant than the law itself, although, as might be seen in the presentation of the streamlined facts, this obligation is not really fulfilled by small entities. It is considered that a person quotes when he/she is deducted from the payroll, is a retiree with allowance, pays by his/her own or the employer pays.

The first explanatory variable will be used in the presence of chronic disease in any family member, the omitted category is that there is not chronic disease in the household. It is expected that when there is a chronic disease the probability of enrollment is greater since this would reduce the financial risk for the whole family. Education, gender, dwelling geographical location (zone and region), will also be used as explanatory variables. Education will be worked on in four categories: none, elementary, secondary and superior, the omitted category is none; it is expected that higher education increases the probability of enrollment. For gender the omitted category is woman, for zone will be rural and for region is Atlantic. The Income Per Capita (IPC) of the household[11]¹ and age will be the continuous explanatory variables used in the model, it is expected that the greater they are the greater the probability of enrollment. It is also expected that living in the urban zone and the richer regions increase the probability of enrollment. The inclusion of these variables is necessary for the model to identify the regional differences and avoid the correlation with other explanatory variables.

For the second model, on the determinants of access, the dichotomizing variables will be whether or not to visit the doctor in the event of an illness in the past 30 days. The enrollment to the health social security system will be used as explanatory variable, so it is expected that enrollment increases the probability of access and the omitted category is people without enrollment. The

¹ As approximation to the householder income we take the methodology proposed by Ramírez et al. (2005).

health status is also used as a variable that determines access, so the worse the perceived status the greater the probability to visit the doctor, and the omitted category is very good health status. It is also expected that individuals with higher incomes and individuals who live in rural area show a greater probability of access. Gender and regions will also be counted as variables to control. The omitted categories in these dichotomizing variables are the same as for the former model.

For the econometrics estimations the Household Surveys of Quality of Life of 1997 and 2003 were used (ECV97 and ECV03, respectively; for its initials in Spanish). The two surveys were done by the National Administrative Department of Statistics (DANE, for its initials in Spanish). The ECV97 has 38,053 observations which represent 39.803.905 inhabitants. The ECV03 has 81,150 observations which represent 43.717.578 inhabitants. Each survey is representative enough for the regions Atlantic, Eastern, Pacific, Valle, Central, Antioquia, Bogotá, Orinoquía and San Andrés. In addition, the surveys include information of the rural and the urban part for the regions Atlantic, Eastern, Pacific, Valle, Central and Antioquia. The methodology used in the two surveys, the questions of the form and the design of the sample, enable us to make comparisons between the two periods.

4. Results

4.1 The main streamlined facts on the coverage of the health insurance

The covered population in the country in 1994 was of 7.5 million people, basically workers at formal employment, those who work for the private sector were mainly enrolled in the ISS and those from the public sector were mainly enrolled in compensation and public funds. This population represented nearly 20% of the population of the country and they received the major benefits in terms of access to health services, so they absorbed a 40 to 60% [21] of the public funded resources allocated to health; but the rest of the population accessed to health services through public hospitals which were directly financed by the government, hospitals and professional services from the private sector and private health insurers [12]. We had then a scope of low coverage and high inequity regarding to access.

The first effect of the 1993 reform on insurance coverage was marked by the incorporation of the members of the familiar group of the workers (payee), so the covered population went automatically, between 1994 and 1995, from 7,5 to 12,1 million people, which meant a rise from 19,8% to 31,9% of coverage over the national population (Table 3). This population would not be enrolled exclusively to ISS and public funds however, because from that year on the competition among EPSs to promote enrollment began, so many people would choose to move to new insurers and ISS would lose participation. In fact, by 1997 there was an increase in the covered population, estimated in 12.7 million, the ISS reduced its participation to 62% of the enrolled population and currently it ranges at 23%. This framework of freedom of choice and portability among insurers induces competition that must bring efficiency to the system. In other words, the member is actively participating in the allocation of the resources within the system when picking out an EPS among the different alternatives.

The increase in the coverage of the contributive regime was concentrated in this automatic effect, which is based on guaranteeing family coverage, but it was necessary to widen the number of paying workers to reach universality. However, in spite of the increase in the number of members between 1994 and 1997, the coverage remains practically steady as percentage of the national population and it only showed a slight rise as percentage of the working population, the

positive effects been noted thus on the enrollment by the dynamics of the formal employment. Following, between 1997 and year 2000, the increase of the members (affiliates) was quite modest and the coverage was reduced to 30,9% and to 31% of the working population; it is noticeable that while the paying workers reduced, due to the downfall of the formal employment, a rise in the beneficiaries was registered, which proves the advantages of the family coverage. Finally, between 2000 and year 2003 a recovery of the number of members (affiliates) has taken place, mainly in the case of paying workers, but the coverage rates are still lower to those registered in 1994 and 1997 (31% of the total population and 32,2% over the workers).

TABLE 3

Colombia: Evolution of Enrollment to Social Security Health Insurance

Contributive Regime		1994		1997	2000	2003
		Without family coverage	Family coverage**			
I.S.S	Payee worker	4.277.342	4.277.342	3.488.388	2.037.276	1.411.654
	Beneficiaries	2.451.514	5.988.279	4.360.486	2.648.458	1.567.812
	Total	6.728.856	10.265.621	7.848.874	4.685.734	2.979.466
E.A.S*	Payee worker	752.048	752.048	142.808	60.334	49.090
	Beneficiaries		1.052.867	199.931	84.468	87.872
	Total	752.048	1.804.915	342.739	144.802	136.962
EPS	Payee worker	-	-	1.695.759	2.931.880	3.991.636
	Beneficiaries	-	-	2.846.229	4.720.328	6.057.399
	Total	-	-	4.541.988	7.652.208	10.049.035
Total	Payee worker	5.029.390	5.029.390	5.326.956	5.029.490	5.452.380
	Beneficiaries	2.451.514	7.041.146	7.406.645	7.453.254	7.713.083
	Total***	7.480.904	12.070.536	12.733.601	12.482.744	13.165.463
	Insuring Coverage (1)	19,8%	31,9%	32,4%	29,5%	29,9%
	Insuring Coverage (2)	34,3%	34,3%	35,1%	30,8%	31,5%
Subsidized Regime		1994	1996	1997	2000	2003
EPS	Total beneficiaries		2.972.934	3.544.260	3.550.672	4.918.859
CCF	Total beneficiaries		1.160.460	1.543.038	2.093.782	1.977.566
ESS	Total beneficiaries		1.848.384	3.231.008	3.866.034	4.547.578
Total	Total beneficiaries		5.981.778	8.318.306	9.510.488	11.444.003
	Insuring Coverage (3)		15,5%	21,2%	22,5%	26,0%
	Insuring Coverage (4)		41,9%	57,2%	59,8%	55,9%
Total coverage		7.480.904	18.052.314	21.051.907	21.993.232	24.609.466
		34,3%	49,8%	56,3%	53,3%	57,5%

Note: Coverage (1) Enrolled Population to Contributive / Population of Colombia. (2) Payee workers / number of occupied people. (3) Enrolled population to Subsidized / Population of Colombia. (4) Enrolled Population / Poor population according to NBI Index. (*) In 1994, adapted entities are Family Compensation Funds and Public Health Funds, that before the reform offered protection to some public employees. (**) The Family Density in 1994 was 2.4. (***) Military Army, Public Teachers and Ecopetrol were not taken account. Payee worker number comes from the compensation database, which means those who are entitled to receive services. Information for 2003 is the one reported by the Consejo Nacional de Seguridad Social en Salud for 2002-2003. Source: Superintendencia Nacional de Salud, Boletines de Estadística; Consejo Nacional de Seguridad Social en Salud. Informe del Consejo 2000-2001; 2002-2003. Encuesta de Calidad de Vida 1997; Estadísticas ISS 1994; DANE, estadísticas demográficas. Adapted from GES - CIE

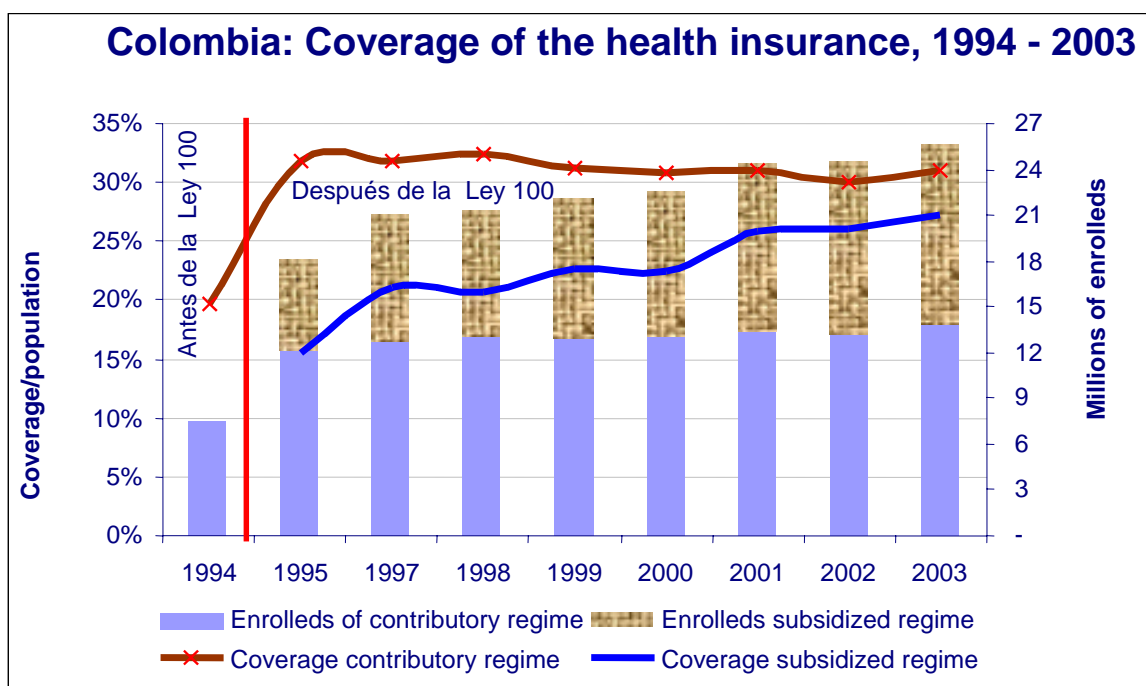
These results show a first streamlined fact of the Colombian reform, in the sense that *the group of the paying workers did not increase*: as percentage of the working population in the country, which is a reference fact for enrollment to the contributive regime, the paying workers moved to represent from 34,3% in 1994 to 32,2% in 2003². To explain this fact, the characteristics of those who pay or are enrolled in the contributive regime are taken into account. Since 1997, according

² Additional to the population with paying capacity that is covered by the health insurance through any EPS there are special regimes that cover some special type of public employees, e.g. the military staff and teachers, who along with their families may represent a 4% of the coverage.

to data reported by the National Household Survey of Quality of Life of that year [4], it was noted that among the formal population the paying workers represented the 82,8% (90,7% among the public workers and 81,5% for enterprises with less than 10 employees), but this figure went down to 14,3% for the informal population (37,8% in enterprises with less than 10 workers, 17,2% for housekeepers and maids and 12,7% for independent workers).

Concerning the coverage of the subsidized regime, which would be one of the major novelties of the reform, granting health insurance to the population without paying capacity, a very important rise is noted during the first years, reaching in 1996 the 15,5% of the national population and in 1997 the 21,2%, an stagnation during the period of economical crisis, then moving about the 22% between 1998 and year 2000, and a new rise from year 2000 up to levels of nearly 30% currently. We have then, as a second streamlined fact, that *the subsidized regime has registered significant rises in the coverage and may soon reach more affiliated population than the contributive regime*. See Graph 3.

GRAPH 3



Property of the authors. Source: Table 2

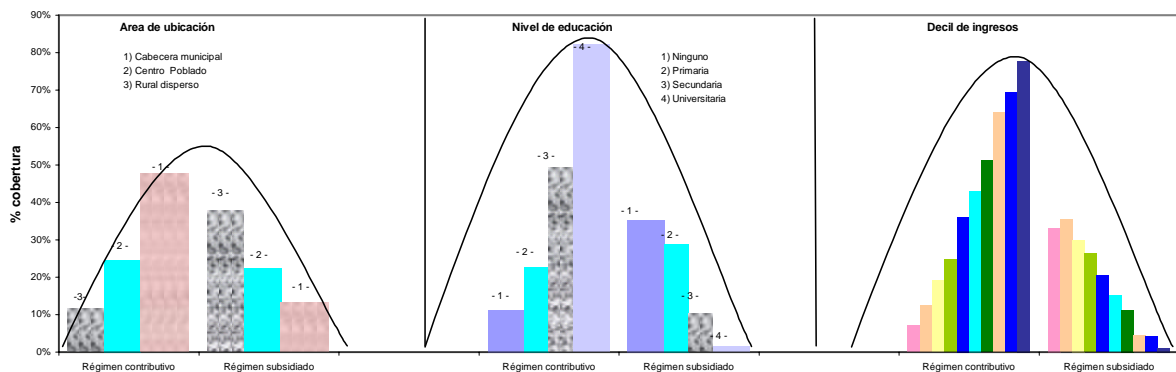
The positive effects of insuring in both regimes, but mainly the advance of the subsidized regime, report as a third streamlined fact, that *between the two social security regimes there is a complementation in their scopes*, so, while the contributive regime has greater presence in the city, among the formal population and with higher level of education and income, the subsidized regime focuses in the rural area and covers the informal people and people with lower levels of education and income. In Graphs 4 and 5 this fact is illustrated for 1997 and 2003. As a result of this contrast, some social gaps have been reduced; for example, for year 2003 the reported national coverage by ECV rose to 61,8%, it is even higher in the urban area (65.5%) in comparison with the rural (51.7%), but it is noted that while in the former the contributive regime rises to 48,2% and the subsidized to 17,3%, in the latter the figures are of 13,3% and 38,4% respectively.

This fact was analyzed in the Human Development Report for Colombia of 2000 as follow:

"the rural areas of the country have greatly benefited from the increase in coverage, since from a total enrollment participation near the 17% in the first years, they happened to cover about a 48% of the total population in year 1997 <...> the increase of the health insurance coverage between those two years, tended to favor the groups with lower incomes, for example, while the rise soared the 200% for the 20% of the poorest population, the corresponding rate of 20% for the richest was of 70% <...> as a result, the concentration in the affiliation is manifested through a reduction in the coefficient, from 0,23 to 0.040, or, in other words, in terms of insurance, Law 100 brings equity to the health system "[13].

GRAPH 4 Enrollment to the health system by area, education and income deciles. 1997

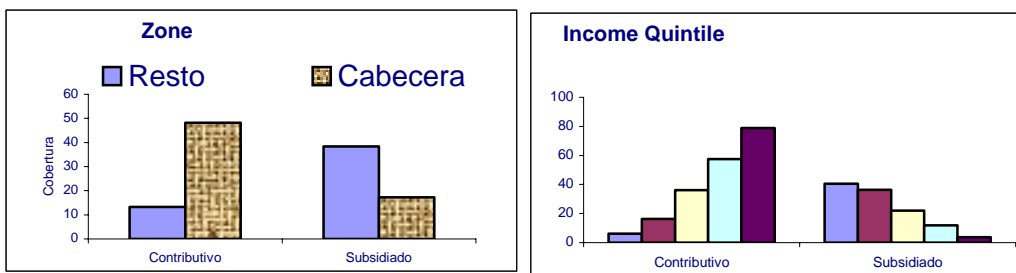
Gráfico 1. Colombia: población afiliada al régimen contributivo y subsidiado por área de ubicación, nivel de educación y decil de ingreso, 1997



Fuente: Encuesta de calidad de vida 1997. Cálculos de los autores

From: Restrepo y Salazar, 2002:136.

GRAPH 5 Health Social Security coverage according to zone and income quintile, 2003



Source: ECV2003.

In spite of these achievements, the coverage of the health insurance still present some equity lags and this is due to the economical disparity of the population which favors the enrollment of people with paying capacity, while the enrollment of the poor is restricted to the availability of fiscal resources, additional to the problems attributed to the tool used to identify and classify them as poor (SISBEN). In other words, in spite of the strong reduction of the insurance gap

between the rich and the poor, there is still a situation of inequity: “in the first quintile only the 48.1% is covered while in the fifth quintile the 83.7% is enrolled” [14, 15]³.

4.2 Main streamlined facts on access

When questioning the advances on access, it is to note in the first place, that among the people within the contributive regime who manifested to have been ill in 1997, about 84% attended health services, while this figure went down to 70% for the people within the subsidized regime and to 60% for the uninsured; in year 2003, the figures show variations in both regimes, with a reduction of the difference (80% and 74%, respectively), while the uninsured population showed a backlash (50%). And in the second place, when questioning the motives for this situation, in the contributive regime predominate aspects about the perceived need (light case) or the lack of time (69% in 1997 and 63% in year 2003); in the subsidized regime the lack of money represented 44% of the barrier of access for health assistance in 1997 and in year 2003 it went down to 30% marking on the contrary a rise of the perceived need, from 27% in year 1997 to 39% in 2003); finally, the uninsured population explains this barrier of access to the health services mainly because of lack of money (63% in 1997 and 57% in 2003). These results, in spite of showing that in the subsidized regime the lack of money remains as an important barrier of access[16], they show that the insured population has greater probability to receive medical attention, which corroborates the importance of the strategy of insuring. See Table 4.

TABLE No 4
Colombia: Type of Barriers of Access⁴, 1997 and 2003

Barriers of access	1997			2003		
	Subsidized regime	Uninsureds	Contributive regime	Subsidized regime	Uninsureds	Contributive regime
People ill but not receive/use services (%)	30,9	40,1	16,0	25,8	50,3	20,2
I. Barriers from the supply						
a) To the entry (geographical)	7,5	5,0	3,5	4,9	3,2	4,9
b) Inside	5,5	1,2	10,2	7,9	3,1	8,6
c) Continuity	4,0	3,0	10,2	4,0	1,9	2,9
II. Barriers from the demand						
d) Disposition	12,3	7,7	19,5	15,0	7,5	17,6
e) Economical barriers (income)	43,7	63,4	9,9	29,5	56,9	10,9
f) Perceived need	26,8	19,6	45,4	38,8	27,3	55,0

Revising the papers carried out after the reform [3, 17], they account for some critical facts. The lack of money is the most frequently cited barrier for enrollment to the social security system, as well as to the use or the real access to health services. Although the availability of services increased, specially in the urban zones, which eliminated some potential barriers of access, this

³ It can also be mentioned the inequity by region, life condition and zone. According to the National Survey of Demography and Health (Profamilia, 2000: 190), in Bogotá, the 72% of the population is enrolled, while in the Costa Atlantica region the figures only reach the 45%. As well, the urban-rural differences remain; by age, the most unprotected groups are the young and among those above 50 the uninsured status falls to an about 30%.

⁴ Barriers of Access are classified according to Aday and Andersen (1974): medical center was far away; b) attention was denied or to many steps before access; c) He had been attended already but still ill; d) he had not time

not necessarily meant a greater integral assistance, specially because of the restrictions or the economic impossibility to afford the cost of drugs and diagnostic tests as well as the copayments at major complexity assistance levels. These difficulties are probably been presented with major strength among the uninsured population. Since poor people have limited resources, they wish to obtain more services for their money[23], but sometimes insurance expenditures, for example, a copayment, might mean greater poverty for them.

Starting from the point that insured poor people who do not use the health services have a greater probability to drop out from the insurance, compared to those who do use the services[24], it is questioning if the enrollment in the subsidized, despite being costless, might be underestimated in those poor people to whom the copayments might mean a barrier of access. Would it be that the enrollment to the subsidized is not attractive for some poor people who do not perceive the need of assistance but who know that in case they use the service they will have to assume a copayment? This concept might even apply for some independent members of the contributive. Although, it is out of the scope of the proposed objectives we may question this.

Some papers[18] state that the Colombian reform has been exemplifying as long as, in terms of access, the major benefits have been for those ranked in the lowest income quintile. The above mentioned, without affecting the achievement in the usage of the health services reached for the whole set of people enrolled to the system.

Finally, regarding to the effects of the reform in public health, and in spite of finding positive and negative facts, there is not a net balance on this, which in addition to considering the effects of the reform must also count for external factors such as the economic crisis. Some authors have stated the hypothesis that an insufficient provision that might have resulted as consequence of the fragmentation of the benefit plans and the dilution of responsibilities among various agents, are unclear incentives for the provision or the production of public health matters[19].

In other words, the reform might have generated an overtrust on the demand side, so that somehow it slacked the impulse that from the public sector was given to these programs, added to the decentralization of the provision. Others, might refer the advances obtained in the past years about public health traditional indicators[20] as achievements of the reform. But what we do want to emphatically state is that access, good quality provided, must have a positive impact on, individual and collective, public health.

4.3 Determinants of enrollment (affiliation)

The estimation of the logit model is shown in Table 5 and the marginal effects of such estimation are shown in Table 6. According to the specification given to the model, the probability of enrollment is of 12,4% in 1997 and of 8,2% in year 2003. The estimation indicates that the presence of a chronic disease in any member of the family explains, partly, the decision to enroll to the contributive regime in 2003, increasing the probability of enrollment in about 1%. However, this effect, although similar, is not significant enough in 1997. This may indicate that people have identified, throughout the time, the benefits of insuring and thus an adverse selection problem reveals since the ill people are been insured but not all of the healthy ones.

Education is an important variable at decision making about enrollment, so, the higher the education the person has the greater the probability of enrollment. This effect is similar in both years. As indicated in Table 5, an individual with superior education increases the probability of enrollment in about 26%. These probability increases are of 6% and 13% for individuals with elementary and secondary education, respectively.

TABLE No 5
Estimations of Determinants of Enrollment (Affiliation)

	1997		2003	
	Coef.	t	Coef.	t
Chronic Disease				
Yes	0.07714	1.03	0.120842	1.86*
Education				
Elementary	0.51218	3.31***	0.814096	4.84***
Secondary	1.098934	6.46***	1.466449	8.39***
Superior	1.664967	8.49***	1.760385	7.44***
Gender				
Male	0.283573	3.69***	0.281669	4.29***
Log per capita income	0.537577	11.43***	0.896733	20.3***
Age	0.023341	9.74***	0.027003	12.66***
Zone				
Urban	0.631013	6.93***	0.490832	5.67***
Region				
Orinoquía	0.222555	1.31	0.014837	0.08
Bogotá	0.318261	2.21**	0.597238	5.81***
Central	0.307644	2.24**	0.440125	3.51***
Pacífico	0.323518	1.85*	-0.33681	-2.54**
Oriental	0.332798	2.52**	0.437262	3.51***
Valle	0.602484	4.2***	0.375251	2.84***
Antioquia	0.679465	5.1***	0.761875	5.63***
San Andrés	1.170301	6.59***	0.537653	3.2***
Constant	-10.528	-17.61***	-15.6692	-27.53***
F-statistic	55.6***		92.1***	
Observations	11371		23335	
Size of population	11231600		12985083	

Signif. codes: : '***' 0.01, '**' 0.05, '*' 0.1, '' No signif.

The fact of being male increases the probability of enrollment in 3% in 1997 and 2% in the year 2003; this effect is significant for both years. Being a year older increases the probability in 0.3% in 1997 and in 0.2% in year 2003, while a little raise in the income would increase this probability in 6% in 1997 and 7% in 2003.

The differences between zones are evident although they decrease in time since living in the urban area would increase the probability of enrollment in 6.4% in 1997 and in 3.5% in year 2003. Regarding to the regional differences it is seen that in 1997 living in the regions of Bogotá, Central, Pacifico and Oriental increases the probability of affiliating in about 4%, with respect to the regions Atlantica and Orinoquía. This increase of the probability is of 8% in Valle, 9% in Antioquia and 19% in San Andrés. For year 2003, the increase is similar in the Central and Oriental regions, in Bogotá is of 5,4%, while in the other regions it decreases: in Valle to 3%, in Antioquia to 7% and in San Andrés to 5%. Living in the Pacifico region decreases the probability of affiliating in 2.3%.

TABLE No 6

Marginal Effects of the Determinants of Enrollment (Affiliation)

Probability	1997 0.124		2003 0.082	
	Dy/dx	z	dy/dx	z
Chronic Disease				
Yes	0.008	1.02	0.009	1.83*
Education				
Primary	0.057	3.24***	0.064	4.58***
Secondary	0.134	5.78***	0.123	7.48***
Superior	0.286	6.44***	0.251	4.97***
Gender				
Male	0.030	3.78***	0.021	4.38***
Log per capita income				
Age	0.003	9.78***	0.002	12.96***
Zone				
Urbano	0.064	7.16***	0.035	5.93***
Region				
Orinoquía	0.026	1.22	0.001	0.08
Bogotá	0.038	2.04**	0.054	5.07***
Central	0.036	2.09**	0.038	3.14***
Pacífico	0.039	1.69*	-0.023	-2.79***
Oriental	0.039	2.36**	0.037	3.18***
Valle	0.079	3.62***	0.032	2.55**
Antioquia	0.089	4.4***	0.073	4.58***
San Andrés	0.189	5.06***	0.050	2.65***

Signif. codes: : *** \leq 0.01, ** \leq 0.05, * \leq 0.1, " No signif.

4.4 Determinants of access

Table 7 shows the logit estimation of the determinants of access and Table 8 shows the marginal effects of such estimation. According to the specification given to the model, the probability to use the medical services when a person is ill is of 79,5% in 1997 and 69,5% in year 2003.

The enrollment to the health social security system has quite important effects on the access to medical services. Being affiliated to the contributive regime means that the probability to use the medical services is of 95% in both years; while being part of the subsidized regime implies that this probability is of 85% in 1997 and of 90% in year 2003. Even though, there are differences between both regimes, these differences have been disappearing with the time.

The health status influences when deciding to use the medical services in year 2003, but not in 1997. Thus, the better the health status the less the probability to visit the doctor. When the individual perceives a bad health status the probability to attend to a doctor increases in 10.6%, this increase is of 8,5% if the perceived health status is regular.

Gender is important in the decision to attend a doctor in 1997, but it is not significant in year 2003. Therefore, being male decreases the probability of access in 4,5%. Having a higher income leads to increase the probability of access; for both years, a raise of the income leads to an increase of this probability in 5%.

TABLE No 7

Estimation of Determinants of Access

	1997		2003	
	Coef.	t	Coef.	t
Regime				
Contributive	0.922148	9.97***	1.237173	13.79***
Subsidiazed	0.355025	4.34***	1.125307	12.07***
Health Status				
Poor	0.27569	1.6	0.55617	2.66***
Regular	0.10862	0.72	0.407822	2.23**
Good	0.110989	0.72	0.209998	1.16
Gender				
Male	-0.27031	-3.96***	-0.10667	-1.48
log per capita income	0.30923	6***	0.234374	4.36***
Zone				
Urban	0.432863	5.54***	0.028186	0.34
Region				
Orinoquía	-0.12593	-0.75	-0.29558	-1.3
Bogotá	-0.3667	-2.27**	-0.09158	-0.84
Central	0.119138	0.97	-0.31319	-2.46**
Pacífico	0.384496	2.61***	-0.03115	-0.28
Oriental	-0.56271	-5.1***	-0.09255	-0.71
Valle	-0.1586	-1.1	0.090657	0.66
Antioquia	0.088607	0.75	0.208824	1.4
San Andrés	0.926861	2.75***	1.429781	2.87***
Constant	-2.78449	-4.21***	-3.07001	-4.47***
F-statistic	26.32***		24.51***	
Observations	7558		8655	
Size of population	8020072		5019240.7	

Signif. codes: : '***' 0.01, '**' 0.05, '*' 0.1, '' No signif.

In the estimation it is seen that the differences between the urban and rural zone are not longer significant in 2003, although they were in 1997. In 1997, being part of the urban area meant that the person would have a greater probability to access to medical services than in the rural area of 7.5%. The regional differences have also decrease. While in 1997 living in Bogotá or in the Oriental region meant decreases of the probability to access a doctor in 6.5% and 10%, respectively; the Pacifico region presented increases of 6% and San Andrés of 11%, compared with the other regions. For year 2003, only the Central and San Andrés regions present differences with other regions; in the former the decrease of probability is of 7% and in the latter an increase of 21%.

TABLE No 8

Marginal Effects of the Determinants of Access

Probability	1997		2003	
	dy/dx	z	dy/dx	z
Regime				
Contributive	0.146	10.74***	0.250	14.72***
Subsidiazed	0.054	4.67***	0.205	14.37***
Health Status				
Poor	0.042	1.72*	0.106	2.99***
Regular	0.018	0.72	0.085	2.26**

Good	0.018	0.72	0.044	1.16
Gender				
Male	-0.045	-3.92***	-0.023	-1.47
log per capita income	0.050	6.19***	0.050	4.38***
Zone				
Urban	0.075	5.27***	0.006	0.34
Region				
Orinoquía	-0.021	-0.73	-0.066	-1.25
Bogotá	-0.065	-2.12**	-0.020	-0.84
Central	0.019	0.99	-0.069	-2.4**
Pacífico	0.057	2.88***	-0.007	-0.27
Oriental	-0.101	-4.79***	-0.020	-0.7
Valle	-0.027	-1.07	0.019	0.67
Antioquia	0.014	0.76	0.043	1.44
San Andrés	0.113	3.85***	0.210	4.77***

Signif. codes: : '***' 0.01, '**' 0.05, '*' 0.1, '' No signif.

5. Discussion and conclusions

In 10 years the insurance coverage moved from 20% to 60% of the population; although the proposed objective, and the reason of being, have not been reached, that is universality, this dramatic increase is a great advance. It brings to the attention that in the contributive regime the enrollment of paying workers, understood as percentage of the working population, has not increased. This contrasts with the sudden increase of people enrolled at the beginning of the reform, basically explained by the family coverage. The economic crisis at the end of the 90s with the consequent rise of informality in employment could have contributed to such “stagnation”. The probability of enrollment in the contributive regime decreased in 2003 against year 1997.

With respect to the subsidized, a sustained and increasing tendency in the enrollment is seen. This makes us believe that soon the number of persons enrolled to this regime, contrary to the premises with which the reform was made, will surpass those of the contributive. This fact is good because it decreases the inequity when insuring more poor people but sets a challenge to the financial sustainability of the system.

There is evidence that between the two regimes, contributive and subsidized, a complementarity is taking place in their scope, having citizens with different profiles in terms of geographic location (zone), education, level of income and occupation enrolled to each one.

It is evident that in the Colombian experience the insured population has a greater probability to receive medical assistance, which corroborates the importance of the strategy of universal insuring which might lead to reduce the inequity in the access. It is important to stand out that for the uninsured the main barrier of access is the lack of money while for those enrolled to the SGSSS, whether contributive or subsidized, the main reason to not visit the doctor is that they do not perceive the need to do so. It would be interesting to know if this greater access has a positive impact in the public health of the country.

According to the specifications given to the model, the enrollment probability is lower in 2003 than in year 1997.

In spite of the measures stated on the reform to avoid adverse selection, when any member of the family has a chronic disease, there is a greater probability of enrollment. Again, the importance of the universal coverage is corroborated, that added to its meaning in terms of equity will help minimize the possibility of any kind of biased selection.

The positive determinants of the enrollment are: greater education, male gender, greater age and higher income. It is true that the probability of enrollment is greater in the urban zone than in the rural, for year 2003 this gap has been closing. There are also regional differences, which are not convenient, specially if we consider that living in the Pacifico, which is a low income region, decreases the probability of enrollment in 2,3%.

Regarding to access, it is very clear that the main determinant to use the health services (medical visit) is whether or not being enrolled in the social security. There is a greater probability of access to the services in the contributive (95%) but for 2003 the difference with the subsidized (90%) has been disappearing. On the contrary, not being enrolled (uninsured) means a low probability of access to health services. Equally, the probability to use more the services increases in those people who perceive a bad health status in those who have greater incomes and in the female gender. The differences observed in 1997 between the rural and the urban zone no longer exist for 2003, this might mean a major penetration of insurance in the rural zone. Regarding to region, the differences observed in 1997 are decreasing and for 2003 only 2 out of the 8 regions present differences: San Andrés increases and Central decreases the probability to access to the services.

We might said that the Colombian reform has had equity since, first, the growth in the enrollment has been greater for the subsidized regime than for the contributive, and second, the insured has greater access to health services than the uninsured. In other words, inequity decreases for being enrolled means greater access and that the insurance has mainly reached the poorer.

Broadly speaking, the reform has had three periods, the initial, from 1994 to 1997, the one of consolidation plus crisis, from 1997 to 2000, and the one of consolidation plus slight recovery, from 2000 to year 2003.

Finally, it is important to stand out that in front of a market where all the health insurers offer the same contract, the same benefits and the same costs, it is hoped that the competition be basically for quality in the provision of the services. That is the importance to give qualified, prompt and unbiased information not only to the consumer (affiliate) but also to the whole market. A fact clearly stated in the reform but still pending in the Colombian case. An important issue is that in less than 10 years the new insurers already have more than 75% of the market share and the ISS shows a decreasing trend in its numbers. This mobility is the result of portability of the insurance and of enabling the citizen to freely choose he who will provide him with the POS among any insurers in the market.

In spite of the fact that Colombia does not fully reach the objectives stated in its reform, we consider that the strategy of insurance and the Colombian health system are a good example and an option to be considered by those countries with inequity concerns and poor access to health services.

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Appendix

Reasons for not consulting, by quintile. 1997 y 2003.

	Quintiles 1997						Quintiles 2003					
	1	2	3	4	5	Total	1	2	3	4	5	Total
Mild case	79,474	124,997	109,021	89,298	126,632	529,422	81,025	89,205	137,766	123,219	141,152	572,367
	17.8	30.6	31.6	34.4	54.1	31.3	23.3	29.9	40.2	38.8	59.9	37.1
Didn't have time	19,453	18,515	32,037	33,117	26,672	129,794	8,335	13,404	17,710	22,945	16,251	78,646
	4.4	4.5	9.3	12.7	11.4	7.7	2.4	4.5	5.2	7.2	6.9	5.1
Distant center	33,990	12,038	9,300	9,854	6,536	71,718	15,875	7,950	12,028	17,331	9,350	62,534
	7.6	2.9	2.7	3.8	2.8	4.2	4.6	2.7	3.5	5.5	4.0	4.1
Lack of money	258,496	197,206	144,758	60,214	31,117	691,791	199,370	150,951	126,644	97,743	31,396	606,103
	57.9	48.3	42.0	23.2	13.3	40.9	57.3	50.6	37.0	30.8	13.3	39.3
Bad service	5,175	2,395	5,058	11,193	0	23,821	7,000	12,359	12,636	14,120	10,644	56,759
	1.2	0.6	1.5	4.3	0.0	1.4	2.0	4.1	3.7	4.4	4.5	3.7
Wasn't attended	2,605	6,792	3,612	1,301	2,755	17,065	11,192	3,771	1,292	5,059	7,158	28,472
	0.6	1.7	1.0	0.5	1.2	1.0	3.2	1.3	0.4	1.6	3.0	1.8
Don't trust in doctors	21,722	24,242	18,003	19,936	7,318	91,221	10,102	7,148	10,035	10,667	6,416	44,369
	4.9	5.9	5.2	7.7	3.1	5.4	2.9	2.4	2.9	3.4	2.7	2.9
Haven't solved	18,838	11,267	12,505	17,847	17,484	77,941	4,672	7,176	9,736	12,821	3,785	38,190
	4.2	2.8	3.6	6.9	7.5	4.6	1.3	2.4	2.8	4.0	1.6	2.5
Too much proceedings	6,656	11,226	10,197	17,027	15,608	60,714	10,334	6,235	14,688	13,452	9,565	54,274
	1.5	2.7	3.0	6.6	6.7	3.6	3.0	2.1	4.3	4.2	4.1	3.5
Total	446,409	408,678	344,491	259,787	234,122	1,693,487	347,905	298,198	342,536	317,357	235,718	1,541,713
	100	100	100	100	100	100	100	100	100	100	100	100

Source: ECV 1997-2003.

Reasons for not consulting, by type of affiliation. 1997 y 2003.

	1997				2003			
	Contributive	Subsidized	Non insured	Total	Contributive	Subsidized	Non insured	Total
Mild case	191,813	132,951	204,658	529,422	236,712	104,752	230,903	572,367
	51.6	28.8	23.8	31.3	55.6	38.8	27.3	37.1
Didn't have time	49,659	31,774	48,361	129,794	37,410	17,664	23,573	78,646
	13.4	6.9	5.6	7.7	8.8	6.5	2.8	5.1
Distant center	11,021	35,025	25,672	71,718	22,033	13,176	27,325	62,534
	3.0	7.6	3.0	4.2	5.2	4.9	3.2	4.1
Lack of money	20,420	190,914	480,457	691,791	45,214	79,594	481,295	606,103
	5.5	41.4	55.8	40.9	10.6	29.5	56.9	39.3
Bad service	8,253	4,699	10,869	23,821	29,291	15,574	11,894	56,759
	2.2	1.0	1.3	1.4	6.9	5.8	1.4	3.7
Wasn't attended	6,946	6,931	3,188	17,065	11,162	7,857	9,453	28,472
	1.9	1.5	0.4	1.0	2.6	2.9	1.1	1.8
Don't trust in doctors	17,305	22,794	51,122	91,221	8,343	7,352	28,674	44,369
	4.7	4.9	5.9	5.4	2.0	2.7	3.4	2.9
Haven't solved	28,722	22,067	27,152	77,941	11,540	10,662	15,988	38,190
	7.7	4.8	3.2	4.6	2.7	3.9	1.9	2.5
Too much proceedings	37,422	14,312	8,980	60,714	24,108	13,448	16,718	54,274
	10.1	3.1	1.0	3.6	5.7	5.0	2.0	3.5
Total	371,561	461,467	860,459	1,693,487	425,812	270,078	845,823	1,541,713
	100	100	100	100	100	100	100	100

Source: ECV 1997-2003.

Taken Actions to Solve Health Need, According with Type of Affiliation, 1997 and 2003.

	1997				2003			
	Contributive	Subsidized	Non insured	Total	Contributive	Subsidized	Non insured	Total
Professional or health institution	3,125,153 87.1	1,142,736 70.4	1,912,921 68.2	6,180,810 77.1	1,722,728 79.5	807,225 74.4	877,976 49.7	3,407,929 67.9
Health promoter or nurse	90,065 2.5	18,770 1.2	29,847 1.1	138,682 1.7	19,029 0.9	8,364 0.8	42,205 2.4	69,598 1.4
Pharmaceutic	33,388 0.9	43,547 2.7	133,691 4.8	210,626 2.6	60,879 2.8	29,879 2.8	123,170 7.0	213,927 4.3
Alternative therapies	11,985 0.3	33,726 2.0	79,115 2.9	124,826 1.5	5,470 0.3	7,624 0.7	35,504 2.0	48,599 0.9
Household remedy	82,299 2.3	122,332 7.5	191,537 6.8	396,168 4.9	137,632 6.3	85,555 7.9	253,152 14.3	476,339 9.5
Self-prescription	123,070 3.4	161,754 10.0	313,867 11.2	598,691 7.5	154,650 7.1	102,802 9.5	346,260 19.6	603,712 12.0
Nothing	120,819 3.4	100,108 6.2	142,249 5.1	363,176 4.5	67,181 3.1	44,219 4.1	87,737 5.0	199,136 4.0
Total	3,586,779 100	1,622,973 100	2,803,227 100	8,012,979 100	2,167,570 100	1,085,667 100	1,766,004 100	5,019,241 100

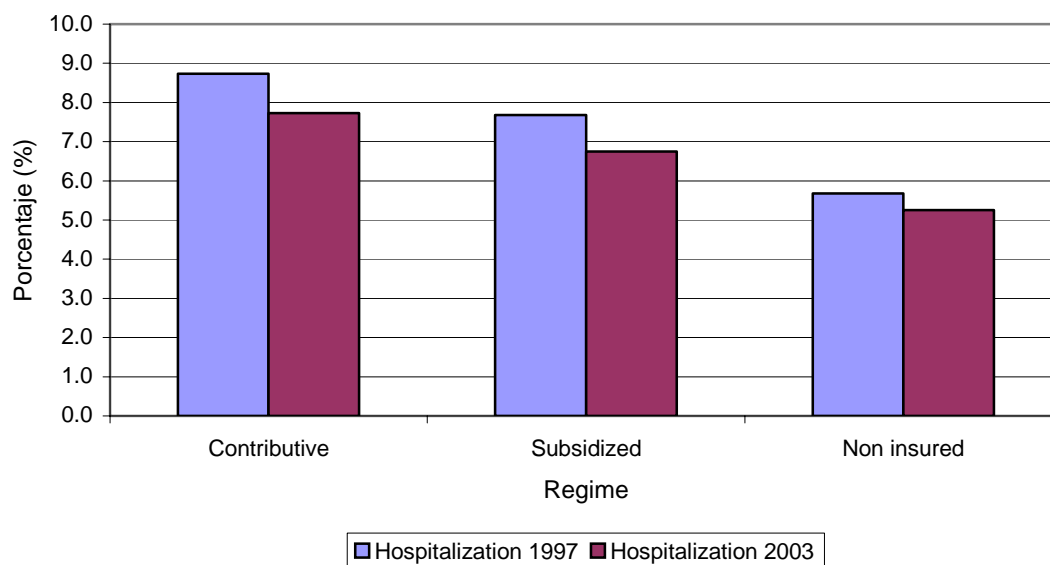
Source: ECV 1997-2003

Chronic Disease According to Type of Affiliation. 1997 y 2003

	1997				2003			
	Yes and consults	Yes, doesn't consult	No	Total	Yes and consults	Yes, doesn't consult	No	Total
Contributive	11.1 1,676,737	2.8 423,289	86.1 12,995,523	100.0 15,095,549	12.3 2,097,538	4.9 827,017	82.8 14,086,293	100.0 17,010,848
Subsidized	7.8 598,408	4.8 365,299	87.5 6,724,962	100.0 7,688,669	8.1 808,813	6.4 640,640	85.5 8,571,413	100.0 10,020,866
Non insured	5.5 943,033	3.9 669,233	90.6 15,445,940	100.0 17,058,206	3.6 593,762	6.8 1,136,556	89.6 14,955,546	100.0 16,685,864
Total	8.1 3,218,178	3.7 1,457,821	88.3 35,166,425	100.0 39,842,424	8.0 3,500,113	6.0 2,604,213	86.0 37,613,253	100.0 43,717,578

Source: ECV 1997-2003.

Hospitalization According to Type of Affiliation, 1997 y 2003.



Source: ECV 1997-2003.

Drugs Usage According to Type of Affiliation, 1997 y 2003.

	1997		2003	
	Si	No	Si	No
Contributive	78.2 1,988,217	21.8 553,997	79.3 1,547,335	20.7 404,243
Subsidized	72.4 936,603	27.6 357,497	78.3 735,363	21.7 203,518
Non insured	75.9 1,740,664	24.1 552,370	66.7 900,085	33.3 449,437
Total	76.1 4,665,484	23.9 1,463,864	75.1 3,182,783	24.9 1,057,198

Source: ECV 1997-2003