Supply- vs. Demand-Side Rationing in Developing Country Health Insurance: Evidence from Colombia's *'Régimen Subsidiado'* 

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# Health Insurance in Developing Countries

- In developing countries, the inability to smooth consumption:
  - Directly reduces welfare (given risk aversion)
  - Informal risk management strategies stifle productive activity
- A leading source of economic risk that poor households face is unexpected illness
  - Two major direct costs: medical care costs (our focus health insurance) and reduced labor income (disability insurance)
  - 5% of Latin American households spend 40% + of 'non-subsistence' income on medical care annually (but *The Lancet...*)
- Growing policy emphasis on health insurance
  - Value of health insurance is proportionate to medical care costs
  - So especially true in middle income countries (expensive medical technologies are epidemiologically appropriate, living standards remain low)

# Balancing Risk Protection with Efficient Incentives

- BUT... Health insurance is notorious for producing socially undesirable consumer incentives (*ex post* moral hazard)
  - Although prices absent insurance don't necessarily reflect scarcity...
  - Other inefficient incentives, too *ex ante* moral hazard, eligibility-related distortions, etc. (we examine these)
- Balance between risk-protection and efficient consumption traditionally struck through demand-side cost sharing (RAND HIE)
  - \*Inescapable trade-off
  - Very common in developing countries even out-of-pocket payments by the 'uninsured' cover only part of total medical costs
- The alternative approach (increasingly common in wealthy countries): insurance contracting with providers that (better) aligns provider incentives with efficient medical care use
  - \*Circumvents otherwise inevitable trade-off
  - Shifts decision-making authority to clinicians with superior information about treatment efficacy
  - But don't forget Hayek...

# Colombia's 'Régimen Subsidiado'

- Our focus: the first middle/low income country effort to expand health insurance in a way that doesn't sacrifice efficiency (via high-powered supply-side incentives)
  - Efficiency: Both curtailing wasteful use and increasing traditionally underused services with positive externalities
- Colombia's 1993 '*Régimen Subsidiado*,' a variant of managed competition
  - Means test (using the SISBEN index) for fully-subsidized health insurance from one of multiple competing health insurers
  - Insurers can form restrictive medical care networks and pay providers in ways that encourage higher quality and lower costs (efficiency?)
- Not easy to pinpoint precise behavioral mechanisms, but we emphasize more efficient supply-side incentives (capitation) and the outright denial of coverage for inefficient care as the key innovations
  - Competition in only a few cities (and premiums and benefits are fixed by law)
  - Subsidized Regime vs. "uninsurance" is really a comparison between *types* of insurance
    - →Less generous insurance with exclusive demand-side cost sharing vs. more generous insurance with more efficient supply-side incentives

# How We Study the Subsidized Regime

- To compare supply- vs. exclusive demand-side rationing (those w/ and w/o the Subsidized Regime), we capitalize on discrete breaks in eligibility along Colombia's continuous poverty-targeting index (SISBEN)
- But two big problems:
  - (1) Manipulation SISBEN misclassification (households and local governments)
  - (2) Local government use of unknown lower eligibility thresholds (due to financial shortfalls)
- To address (1), we use a simulated instrument: we calculate SISBEN scores in household survey data not used for determination of eligibility and instrument for SR enrollment with simulated eligibility
- To address (2), we estimate county-specific SISBEN eligibility thresholds that maximize the goodness of fit of observed enrollment as a function of simulated eligibility

# What We Find Thus Far

- Risk Protection and Portfolio Choice
  - Reductions in variability of medical spending and in right-tail outlier spending
  - No discernable change in household assets or non-medical expenditures
  - Insurance generally doing what it is supposed to do
- Medical Care Use
  - Generally little increase in specialty/chronic/inpatient curative services
  - Large increase in preventive care use
    - \*Most are free regardless of insurance status, implicating supply-side
  - Preventive services have important positive externalities (pecuniary and infectious disease related), so increase is probably efficient
- Health Outcomes
  - No anthropometric gains, but reductions in days of illness and child morbidity
  - Evidence of some health improvement; efficient if not due to *ex post* moral hazard (doesn't seem to be)
- No Evidence of Other Behavioral Distortions
  - *Ex ante* moral hazard, eligibility-related behavior, or insurance crowd-out
  - Implies SISBEN manipulation occurs in reporting, not actual behavior

# Outline

1. Introduction

# 2. BACKGROUND ON THE SUBSIDIZED REGIME

- 3. Data
- 4. Empirical Strategy
- 5. Results
- 6. Preliminary Conclusions

# Overview: Colombia's Subsidized Regime

- Introduced in 1993 and implemented ~1997, essentially organized as a system of 'managed competition' (a la Alain Enthoven)
  - Beneficiaries are fully subsidized to purchase health insurance from competing health insurers
  - Formal insurance coverage grew from 20% in 1993 to 80% in 2007
- But important departures from classical managed competition:
  - Nearly all markets served by a single insurer (little competition)
  - Premiums and benefits are set by law, so few competitive margins
    - (If adverse selection can be managed through risk adjustment of premiums, for example relaxing these regulations is probably desirable)
- Benefits cover primary care, drugs, and some specialty and inpatient care (oncology, for example); limited coverage of other specialty services
- Most salient changes
  - High-powered supply-side incentives (capitation)
  - Insurer ability to deny coverage of inefficient care (utilization review)

# Subsidized Regime Benefits

AGE /				TYPE C	F BENEFIT			
POPULATION GROUP	Preventive care	Primary care (basic	Secondary care (specialist care,	Tertiary care	Catastrophic care	Medications	Transportation	Excluded interventions
		and diagnostic tests)	nospitalizationsj					
< 1 YEAR	Neonatal care and screening (Vit K, anemia, TSH), immunizations, well child care		All	All				Aesthetic surgery Infertility treatment Treatment for sleep disorders
1-4 years 5-19 years	Well child care, immunizations, anemia screening Well child care, immunizations, anemia screening		Cataract and strabismus surgery,		Treatment with radiotherapy and chemotherapy for cancer, dialysis and organ transplant for renal failure, Surgical treatment of beart	41		Organ transplants (except renal, heart, chornea and bone marrow) Psychotherapy and psychoanalysis Treatments for
20-60 years	Cardiovascular and renal disease risk screening, cervical and breast cancer screening	All	herniorraphy, appendectomy, cholecystectomy, orthopedics, rehabilitation services and procedures	Not covered	cerebrovascular, neurological and congenital conditions, treatment of major trauma, intensive care	medications in national formulary	For referrals, catastrophic care cases	end stage disease
>60 years	Cardiovascular and renal disease risk screening, cervical and breast cancer screening				unit, hip and knee replacement, major burns, treatment for AIDS			
WOMEN	High risk screening, STD, prenatal care		Same as above plus obstetric care	Obstetric care				

# High-powered Supply-side Incentives

- Insurer contracting with health care organizations (hospitals and medical groups)
  - Two general types of contracts:
    - Primary care: capitated contracts (fixed payments per enrollee per month)
      - Strong incentives to constrain total medical care spending
      - Can be accomplished by promoting preventive care and/or by constraining overall medical care use (possibly improving efficiency)
    - Specialty care: fee-for-service contracts with utilization review
      - Incentives to provide many medical services (inefficient)
      - But each specialty service requires insurer authorization, curbing inefficient incentives
- Health care organization contracting with individual clinicians
  - Hasn't been characterized systematically in Colombia, we are currently trying to document these contractual relationships

# Subsidized Regime Eligibility

- Eligibility is determined using a poverty-targeting index called SISBEN
- Original SISBEN index contains fourteen components (including housing material, access to public utilities, ownership of durable assets, demographic composition, educational attainment, and labor force participation)
  - Polychotemous categories for each component, weights/points vary by category and also by administrative urban/rural distinction
  - We focus on "urban" areas (inconsistencies in the application of the rural index), covering  $\sim 70\%$  of the population
- An individual's SISBEN score is then calculated by summing points across components
  - Possible scores range from 0 to 100 (with 0 being the most impoverished); the urban eligibility threshold is 48

# Subsidized Regime Eligibility: The SISBEN Index

#### **SISBEN** Components

(A) Human Capital; Employer Characteristics and Benefits

- (1) Educational attainment of the household head
- (2) Mean Schooling for household members 12 years old and older
- (3) Firm size and provision of Social Security benefits for the household head

#### (B) Demographics, Income, and Labor Force Participation

- (4) Proportion of children 6 years old and under (as share of children under age 18)
- (5) Proportion of household members employed (as a share of those older than 12)
- (6) Per capita income indexed to the minimum wage (all types of income are counted)

### (C) Housing Characteristics

- (7) Number of rooms per person
- (8) Primary wall material
- (9) Primary roof material
- (10) Primary floor material
- (11) Number of appliances (among those on a pre-determined list)

### (D) Access to Public Utilities

- (12) Water source
- (13) Sewage disposal
- (14) Garbage disposal

# Eligibility and Enrollment... in Practice

- Eligibility and enrollment work differently in practice than on paper...
- Major practical considerations:
  - (1) Manipulation of SISBEN scores. Both households and local governments have incentives to manipulate scores
    - Households: lower out-of-pocket payments
    - Local governments: greater transfers from the national government; enrollment of key constituents provides political benefits
  - (2) Lower *de facto* county-specific eligibility thresholds
    - Many local governments lack sufficient revenue to finance their share of health insurance subsidies for all eligibles
  - (3) Some counties enrolled residents using other criteria (primarily *estrato*, an alternative poverty measure used for other public subsidies) before SISBEN enumeration was completed

# **SISBEN Score Manipulation**

(1) Camacho and Conover (2008)



(2) Using results from the 2005 population census, the Colombian newspaper *El Tiempo* reports that there are more SR enrollees than residents in some counties (*El Tiempo*, October 26, 2006).

# Outline

- 1. Introduction
- 2. Background on the Subsidized Regime

## **3. DATA**

- 4. Empirical Strategy
- 5. Results
- 6. Preliminary Conclusions

# Data

- Need data containing: (1) Enrollment in the SR, (2) Components of the SISBEN index (enabling us to simulate eligibility), and (3) Behaviors and outcomes of interest:
  - The 2003 *Encuesta de Calidad de Vida* (ECV)
    - Nationally-representative household surveys designed to measure socioeconomic well-being and "quality of life," broadly defined
  - The 2005 Demographic and Health Survey (DHS)
    - Nationally-representative survey of fertile-age women (defined as 15-49) and their households, contains detailed fertility, health, and socio-economic information
- In simulating eligibility, these household surveys contain most but not all SISBEN components
  - We use ordered probit models to estimate the most likely category for each missing component

# SISBEN Components by Household Survey Wave

Variable	DHS 2005	ECV 2003
Educational Attainment	Available	Available
Employment Status	Available	Available
Social Security Benefits		
Health Insurance	Available	Available
Pension	Not Available	Available
Firm Size (Number of Employees)	Not Available	Available
Age	Available	Available
Income	Not available	Available
Number of Rooms	Available	Available
Primary Wall Material	Available	Available
Primary Roof Material	Not available	Not available
Primary Floor Material	Available	Available
Number of Appliances		
TV	Available	Available
Refrigerator	Available	Available
Air Conditioner	Available	Available
Blender	Available	Available
Washing Machine	Available	Available
Water Source	Available	Available
Sewage Disposal	Available	Available
Garbage Disposal	Available	Available

# Outline

- 1. Introduction
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- 3. Data

# 4. EMPIRICAL STRATEGY

- 5. Results
- 6. Preliminary Conclusions

# **Empirical Strategy**

- Exploit eligibility discontinuity in SISBEN index
  - To address manipulation, we instrument for Subsidized Regime enrollment with simulated SISBEN scores (calculated in the ECV and DHS data – not used for eligibility determination)
  - We also confirm that ECV and DHS responses are not themselves manipulated
- Basic estimating equations (2SLS) for individuals *i* in households *h*:

(1)  $enroll_{ih} = \alpha + \gamma below_h + \beta SISBEN_h + \Sigma_k \delta_k estrato_{hk} + \varepsilon_{ih}$ 

(2)  $outcome_{ih} = \varphi + \lambda enroll_h + \theta SISBEN_h + \Sigma_k \pi_k estrato_{hk} + \xi_{ih}$ 

- Use conservative bandwidth of 2, assess sensitivity to this choice
- Also allow higher-order SISBEN score polynomials, different SISBEN score gradients on opposite sides of the threshold; try a non-parametric approach

# Empirical Strategy (Continued)

- To address local governments using *de facto* eligibility thresholds below the uniform national threshold (which weakens the first stage), we estimate county-specific thresholds (Chay, McEwan, and Urquiola *AER* 2005)
- Specifically, we use our full samples to establish county-specific breaks in SISBEN scores that maximize the goodness of fit of SR enrollment as a function of simulated eligibility (constraining estimated thresholds to fall below 48)
- We then use these county-specific thresholds to code the variable *below* in our main estimating equations and include county fixed effects as well
- \*Importantly, because some local governments use the uniform national SISBEN threshold for other public benefits (such as public utility subsidies), using countyspecific thresholds allows us to disentangle the correlates of Subsidized Regime enrollment from the correlates of participation in other programs

# Graphical Representation of First Stage: ECV

## **ECV Enrollment**



# Graphical Representation of First Stage: DHS

## **DHS Enrollment**



# Outline

- 1. Introduction
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- 3. Data
- 4. Empirical Strategy
- 5. **RESULTS**
- 6. Preliminary Conclusions

## Results Summary: Risk Protection and Portfolio Choice

- Reduction in variability of inpatient medical spending
  - Variability: defined as absolute value of the deviation of an individual's spending from mean spending among those on the same side of the eligibility threshold
- Reduction in average level of inpatient expenditures
  - Note: changes in mean spending are hard to interpret given price changes
- Reduction in probability of extreme right-tail inpatient spending
- No evidence of changes in household assets or other non-medical expenditures
- Insurance generally doing what it is supposed to do





# **2SLS Results: Risk Protection**

#### Panel A: Risk Protection

Outcome:	Individual Inpatient Medical Spending	Individual Outpatient Medical Spending	Out-of-Pocket Spending for Chronic Disease Medication	Variability of Individual Inpatient Medical Spending	Variability of Individual Outpatient Medical Spending	Variability of Out-of-Pocket Spending for Chronic Disease Medication	Individual Inpatient Medical Spending >= 600,000	Individual Inpatient Medical Spending >= 900,000	Individual Inpatient Medical Spending >= 1,200,000
IV Estimate, Subsidized Regime Enrollment	-60,371* (33,166)	3,562 (3,307)	12,566 (12,405)	-62,109* (32,860)	2,620 (3,160)	12,815 (11,474)	-0.03* (0.01)	-0.02** (0.01)	-0.02** (0.01)
Intent to Treat Estimate, Subsidized Regime Enrollment	-15,628* (8,138)	918 (827)	3,234 (3,132)	-16,078** (8,046)	676 (793)	3,298 (2,915)	-0.01** (0.004)	-0.004*** (0.002)	-0.003*** (0.002)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)
First Stage F-Statistic (OLS)	25.75	25.53	25.45	25.75	25.53	25.45	25.75	25.75	25.75
Observations	4,211	4,218	4,222	4,211	4,218	4,222	4,211	4,211	4,211
Data Source	ECV	ECV	ECV	ECV	ECV	ECV	ECV	ECV	ECV

# 2SLS Results: Portfolio Choice

#### **Panel B: Portfolio Choice**

Outcome:	Individual Education Spending	Household Education Spending	Total Spending on Food	Total Monthly Expenditure	Has Car	Has Radio
IV Estimate, Subsidized Regime Enrollment	-342 (4,963)	30,366 (25,733)	32,136 (104,871)	-33,826 (305,878)	0.07 (0.04)	0.14 (0.11)
Intent to Treat Estimate, Subsidized Regime Enrollment	-84.72 (1,230)	7,815 (6,412)	8,790 (28,271)	-14,036 (127,170)	0.03* (0.02)	0.05 (0.04)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.25*** (0.05)	0.26*** (0.05)	0.27*** (0.05)	0.41*** (0.11)	0.40*** (0.04)	0.40*** (0.04)
First Stage F-Statistic (OLS)	23.16	25.45	27.82	13.53	110	110
Observations	3,567	4,222	4,096	966	3,276	3,276
Data Source	ECV	ECV	ECV	ECV	DHS	DHS

#### Appendix 3, Figure 1: Risk Protection, Consumption Smoothing, and Portfolio Choice

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# Results Summary: Use of Medical Care

- No increase in service use for specialty, chronic, or inpatient care (or generic curative care)
  - Single exception for curative physician visits
  - But increase due to income effect is not inefficient, only increase due to substitution effect we can't separate the two
- Increase in preventive care use
  - \*Most are free regardless of insurance status, implicating supply-side
- Preventive services have important positive externalities (pecuniary and infectious disease related)
- Overall, most of the increase in medical care is efficient, little wasteful consumption

# 2SLS Results: Use of Medical Care

Outcome:	Preventive Physician Visit	Any Physician Visit	Hospital Stay	Medical Visit for Chronic Disease	Curative Care Use Conditional on Illness	Curative Use not Conditional on Health Status	Number of Growth Dev. Checks Last Year
IV Estimate, Subsidized Regime Enrollment	0.29* (0.17)	0.14** (0.06)	-0.04 (0.06)	0.51 (0.34)	0.11 (0.30)	-0.05 (0.19)	1.24* (0.74)
Intent to Treat Estimate, Subsidized Regime Enrollment	0.08* (0.05)	0.04** (0.02)	-0.01 (0.02)	0.20* (0.10)	0.03 (0.08)	-0.02 (0.06)	0.39* (0.23)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.26*** (0.05)	0.26*** (0.05)	0.26*** (0.05)	0.35*** (0.10)	0.28*** (0.08)	0.31*** (0.06)	0.31*** (0.06)
First Stage F-Statistic (OLS)	25.45	25.45	25.45	11.58	11.42	25.11	25.19
Observations	4,222	4,222	4,222	564	757	1,184	1,186
Data Source	ECV	ECV	ECV	ECV	DHS	DHS	DHS

### Appendix 3, Figure 2: Medical Care Use









Data: ECV 2003

























## **Results Summary: Health Outcomes**

- No improvement in anthropometric measures of health
- No change in chronic disease prevalence
- Some reductions in days lost from usual activities due to illness (both children and adults)
- Reduction in childhood morbidity (cough, fever, diarrhea)
- Overall, some mixed evidence of health improvement
  - Welfare implications of health improvement under insurance are ambiguous if due to *ex post* moral hazard, but we find little evidence of this so presumably welfare gains

# 2SLS Results: Health Outcomes

Outcome:	Women's BMI	Child BMI	Birthweigh t (KG)	Child Days Lost to Illness	Adult Activity Days Lost	Chronic Disease	Child Cough, Fever, Diarrhea	Any Health Problem
IV Estimate, Subsidized Regime Enrollment	-0.42 (0.83)	-0.36 (0.71)	-0.38 (0.33)	-1.30* (0.71)	-0.42** (0.18)	0.06 (0.10)	-0.35* (0.21)	-0.26 (0.19)
Intent to Treat Estimate, Subsidized Regime Eligibility	-0.17 (-0.34)	-0.12 (-0.23)	-0.10 (-0.08)	-0.41** (-0.21)	-0.13 (-0.05)	0.02 (0.03)	-0.11* (-0.06)	-0.08 (-0.06)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.41*** (0.04)	0.33*** (0.07)	0.28*** (0.07)	0.31*** (0.06)	0.26*** (0.05)	0.26*** (0.05)	0.32*** (0.06)	0.32*** (0.06)
First Stage F-Statistic (OLS)	109.60	24.83	14.36	25.11	25.11	25.45	25.53	25.11
Observations	3,107	1,082	901	1,184	1,184	4,222	1,188	1,184
Data Source	DHS	DHS	DHS	DHS	ECV	ECV	DHS	DHS

# Appendix 3, Figure 3: Health Outcomes































# **Results Summary: Other Behavioral Distortions**

- No Evidence of *Ex Ante* Moral Hazard
  - Drank alcohol during pregnancy
  - Number of drinks per week during pregnancy
  - Months breastfed
  - Folic acid during pregnancy
  - Hand washing
- No Evidence of Eligibility-Related Behavioral Distortions
  - Ever married
  - Birth control use
  - Pregnant
  - Children ever born
  - Household head employed in the formal sector
  - Implies SISBEN manipulation occurs in reporting, not actual behavior
- No Evidence of Insurance Crowd-Out
  - "Contributory" regime enrollment (employment-based health insurance)
  - Other idiosyncratic insurance programs (for oil workers, teachers, etc.)

# 2SLS Results: Ex Ante Moral Hazard

		Ex-A	nte Moral Ha	azard		
Outcome:	Drank Alcohol during Pregnancy	Number of Drinks per Week during Pregnancy	Months Breastfed as Child	Folic Acid During Pregnancy	Number Months Folic Acid during Pregnancy	Hand washing
IV Estimate, Subsidized Regime Enrollment	-0.05 (0.12)	-21.59 (136)	-0.82 (5.27)	0.15 (0.17)	0.52 (1.46)	-0.24 (0.37)
Intent to Treat Estimate, Subsidized Regime Enrollment	-0.02 (0.04)	-1.89 (10.56)	-0.22 (1.41)	0.06 (0.06)	0.17 (0.47)	-0.05 (0.08)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.35*** (0.06)	0.09 (0.32)	0.27*** (0.06)	0.36*** (0.06)	0.33*** (0.09)	0.36*** (0.06)
First Stage F-Statistic (OLS)	31.29	0.07	17.56	32.49	11.91	8.44
Observations	1,013	109	962	1,003	528	652
Data Source	DHS	DHS	DHS	DHS	DHS	DHS

# 2SLS Results: Eligibility-Related Behavioral Distortions

		Eligibili	ty-Related <b>E</b>	Behavior	
Outcome:	Ever Married	Current Birth Control Use	Currently Pregnant	Children Ever Born	Household Head Employed
IV Estimate, Subsidized Regime Enrollment	-0.07 (0.07)	-0.01 (0.08)	-0.04 (0.04)	-0.19 (0.25)	0.02 (0.08)
Intent to Treat Estimate, Subsidized Regime Enrollment	-0.03 (0.03)	0.00 (0.03)	-0.02 (0.01)	-0.07 (0.10)	0.01 (0.03)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)
First Stage F-Statistic (OLS)	110	110	110	110	110
Observations	3,276	3,276	3,276	3,276	3,276
Data Source	DHS	DHS	DHS	DHS	DHS

# 2SLS Results: Insurance Crowd-Out

			Insurance	Crowd-Out		
Outcome:	Contributor y Regime Enrollment	Uninsured	Other Health Insurance	Contributor y Regime Enrollment	Uninsured	Other Health Insurance
IV Estimate, Subsidized Regime Enrollment						
Intent to Treat Estimate, Subsidized Regime Enrollment	-0.025 (0.03)	-0.23*** (0.05)	-0.002 (0.003)	-0.043* (0.02)	-0.36*** (0.04)	-0.001 (0.008)
Below Eligibility Threshold, First Stage Estimate (OLS)						
First Stage F-Statistic (OLS)						
Observations	4,222	4,222	4,222	3,276	3,276	3,276
Data Source	ECV	ECV	ECV	DHS	DHS	DHS

# Results Summary: Balance across Eligibility Thresholds and Robustness

- Balance across eligibility cut-offs in:
  - Observable characteristics that couldn't plausibly respond to SR enrollment (age, education among adults, etc)
  - Other programs for which the uniform national SISBEN threshold is used
- Main results persist:
  - Across alternative bandwidths
  - With alternative ways of controlling for SISBEN scores (such as including higher-order SISBEN score polynomials, allowing different SISBEN score slopes on either side of the threshold)
  - Controlling for county fixed effects

# 2SLS Results: Balance across Eligibility Thresholds

Outcome:	Household Head Age	Completed Elementary School	Completed Secondary School	Household Head Completed Elementary School	Household Head Completed Secondary School	Services from Bienstar Familiar	Benefits to Buy House	Attended Training
IV Estimate, Subsidized Regime Enrollment	1.29 (3.15)	-0.09 (0.06)	0.09 (0.07)	-0.16 (0.11)	0.0006 (0.03)	-0.04 (0.20)	0.02 (0.04)	0.01 (0.05)
Intent to Treat Estimate, Subsidized Regime Eligibility	0.52 (1.26)	-0.04 (-0.03)	0.04 (0.03)	-0.06 (-0.04)	0.00 (0.01)	-0.01 (0.06)	0.01 (0.02)	0.002 (0.02)
Below Eligibility Threshold, First Stage Estimate (OLS)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.40*** (0.04)	0.26*** (0.05)	0.26*** (0.05)	0.27*** (0.05)
First Stage F-Statistic (OLS)	110	111	111	110	110	25.45	25.45	28.79
Observations	3,276	3,275	3,275	3,276	3,276	4,222	4,222	3,010
Data Source	DHS	DHS	DHS	DHS	DHS	ECV	ECV	ECV

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# **Preliminary Conclusions**

- Colombia's *Régimen Subsidiado* appears to have successfully provided risk protection benefits with minimal wasteful medical care use
  - High-powered supply-side incentives and the ability simply to deny coverage of inefficient care may play an important role
- It also appears to have increased the use of preventive health services with important positive externalities (both pecuniary and infectious disease-related)
- The full promise of high-powered supply-side incentives has yet to be realized in Colombia
  - Political concessions have preserved some direct government subsidies to health care organizations
  - New "pay for performance" work...
- If adverse selection can be managed, allowing competition among insurers according to benefits and premiums could further improve welfare