

# Preferences for Social Health Insurance in Ethiopia: a discrete choice experiment

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## Outline

- Background
- Objective
- Methods
- Results
- Discussions

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## Background – Health Care Financing in Ethiopia

### Health Financing strategy

- Why
  - Too little resources for health
    - Per capita – USD 4.5 (1995/96), USD 20.8 (2010/11)
  - Over-reliance on out of pocket payments
    - 52.6% of THE (1995/96), 33.7 % THE (2010/11)
  - Inefficient and inequitable use of resources
- Rationale
  - Serious decline in health care delivery
  - Government financing is not sufficient
  - Assess alternative methods of financing



Federal Ministry of Health. 1998. Health care and financing strategy. Addis Ababa.  
Federal Ministry of Health. National health accounts (I-V). Addis Ababa Ethiopia

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## Background – Health Care Financing in Ethiopia

### Health financing reform components

- First generation
  - Revenue retention and utilization
  - Systematizing the fee waiver system and exemption scheme
  - Establishment and operation of governing boards.
  - Outsourcing of non-clinical services.
  - Establishment of private clinics/wings/rooms in public hospitals

Birhane Y. 2008. Medical doctors profile in Ethiopia: production, attrition, and retention. In memory of 100-year Ethiopian modern medicine and the new Ethiopian millennium. Ethiopian Medical Journal, 1, 1-17  
Federal Ministry of Health. 1998. Health care and financing strategy. Addis Ababa.

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## Background – Health Care Financing in Ethiopia

- Second generation
  - Community based health insurance – for people in the informal sector.
    - Piloting under way
  - Social Health insurance (SHI) – for formally employed
    - SHI strategy (2008)
    - Legal frameworks
    - Health insurance agency



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## Objective

- Eliciting preferences to SHI among civil servants to:
  - assess the importance of different components of the health insurance plans
  - estimate the willingness to pay and/or uptake probabilities for attributes and insurance plans

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## Method

- Sample: civil servants from Addis Ababa
- Discrete choice experiment
  - **Attribute and levels:** 8 attributes
  - **Experimental design:** orthogonal main effects only;
  - **Choice sets:** 16 binary choice sets
  - **Questionnaire:** self administered
  - **Respondents:** 250 civil servants
  - **Data analysis:** mixed logit model
- Self administered questionnaire

Ryan M, Gerard K, Amaya-Amaya. 2008. Using discrete choice experiments to value health and health care. Dordrecht. Springer

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## Attributes and levels

Attributes	Definition	Levels
Premium	Monthly contribution as % of salary	(1) 5%, (2)3%, (3) 2%, (4) 1%
Exclusions	Services which will not be covered by SHI	(1) None (2) Dialysis (3) Dental care (4) Both Dialysis
Providers	Service providers for beneficiaries of SHI	(1) Public providers (2) Public and private providers (3) Private providers
Enrolment	Family members that will be enrolled in SHI	(1) Extended family, (2) Core family
Coverage – outpatient	Level of coverage for outpatient services	(1) 100% coverage , (2) 90% coverage
Coverage - inpatient	Level of coverage for inpatient services	(1) 100% coverage , (2) 90% coverage
Coverage – drugs	Level of coverage for drugs	(1) 100% coverage , (2) 90% coverage
Coverage – tests	Level of coverage for diagnostic tests	(1) 100% coverage , (2) 90% coverage

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## Example of a choice set

Attributes	Insurance A	Insurance B
Contribution from monthly salary	3% of salary	2% of salary
Enrolment	Extended family	Extended family
Exclusion	Dental & dialysis care	Dental care
Provider of the services	Private	Public & private
<b>Coverage</b>		
of outpatient service	100% coverage	90% coverage
of inpatient service	100% coverage	90% coverage
of drugs	90% coverage	100% coverage
of laboratory tests & other diagnostics	90% coverage	100% coverage

Which insurance would you choose?  
(Please tick one box only)



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## Results

Characteristics of respondents	No. (%)
<b>Gender (N=208)</b>	
Male	119 (57.21)
Female	89 (42.79)
<b>Age group</b>	
20 – 29 years	105 (50.48)
30 – 39 years	61 (29.33)
40 – 49 years	36 (17.31)
50 – 59 years	6 (2.88)
<b>Marital status</b>	
Never married	101 (48.56)
Married	103 (49.52)
<b>Mean salary</b>	
In Birr	2757.48
In USD (\$1 = 18.4 Birr)	\$149.86

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## Mixed logit regression result

Attributes	Coefficient		WTP in % salary (95% CI)
Premium	-0.23	***	
Exclusions			
No exclusion	0.56	***	3.92 (2.80, 5.05)
Dialysis	-0.06		1.30 (0.68, 1.91)
Dental care	-0.14	*	0.92 (0.07, 1.76)
Dialysis and dental care+	-0.36	***	-
Providers of services			
Public and private	0.30	***	1.52 (0.71, 2.32)
Public	-0.25	**	-0.84 (-1.42, 0.27)
Private+	-0.05	***	-
Full coverage of drug	0.07	***	0.62 (0.04, 1.19)
Full coverage of outpatient services	-0.02	**	-1.73 (-2.54, 0.91)
Full coverage of inpatient services	-0.01		
Full coverage of tests	0.07	**	0.63 (0.25, 1.01)
Enrolment of extended family	-0.06	**	-0.53 (-1.07, 0.002)
Constant	0.41	***	3.49 (1.93, 5.05)

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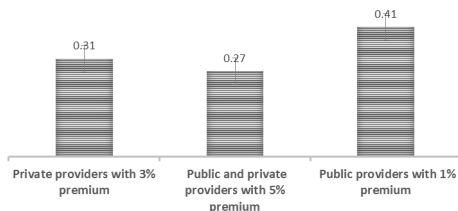
## Trade-offs

Trade-offs	Premium (% of salary)	Providers	Exclusion	Prob. of uptake	WTP (%)
premium and providers	1	3	Private	0.31 <i>(0.28, 0.34)</i>	3.92 <i>(2.80, 5.05)</i>
	2	5	Public & private	0.27 <i>(0.24, 0.32)</i>	5.44 <i>(3.77, 7.11)</i>
	3	1	Public	0.41 <i>(0.37, 0.45)</i>	3.08 <i>(1.81, 4.35)</i>
premium and exclusions	4	5	Public & private	0.36 <i>(0.29, 0.42)</i>	5.44 <i>(3.77, 7.01)</i>
	5	3	Public & private	Dental care 0.28 <i>(0.24, 0.33)</i>	2.44 <i>(1.61, 3.26)</i>
	6	1	Public & private	Dialysis & dental care 0.36 <i>(0.32-0.40)</i>	1.52 <i>(0.71, 2.32)</i>
Coverage and provider	7	3	Public & private	Dialysis & dental care 0.29 <i>(0.25, 0.33)</i>	1.52 <i>(0.71, 2.32)</i>
	8	3	Public	Dental care 0.21 <i>(0.16, 0.25)</i>	0.07 <i>(-0.74, 0.89)</i>
	9	3	Private	None 0.51 <i>(0.45, 0.56)</i>	3.92 <i>(2.80, 5.05)</i>

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## Uptake probabilities

FIGURE 1A. UPTAKE PROBABILITIES - PROVIDERS VS. EXCLUSION



- An increase in premiums can be tolerated if there is choice of providers or better coverage

FIGURE 1B. UPTAKE PROBABILITIES - PREMIUM VS. EXCLUSION

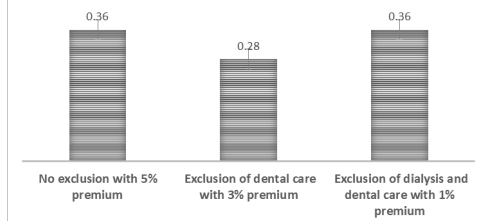
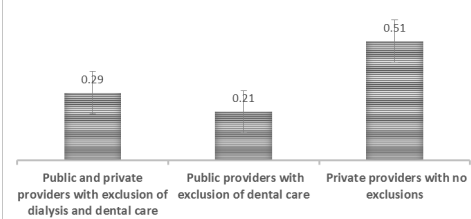


FIGURE 1C. UPTAKE PROBABILITIES - PROVIDERS VS. EXCLUSION



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## Discussion

- Comprehensiveness of benefit packages are more important in the design of SHI followed by providers of services and monthly contribution
- The willingness to pay for a typical health insurance plan of SHI strategy is lower (1.52%) than the level of contribution proposed (3%) by the strategy
- Uptake probability of a the typical health insurance plan was also found to be low (29%)

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## Discussion

- Design of health insurance plans in sub-Saharan Africa usually does not consider preferences of beneficiaries leading to dissatisfaction and welfare loss
  - Voluntary insurance – low enrolment for voluntary health insurance (De Allegri et al 2006; Basaza et al. 2007)
  - Compulsory – difficulty in compliance, low utilization, and self-referral (Carrin et al. 2007)

Basaza et al. 2007. Low enrolment in Ugandan community health insurance schemes: underlying causes and policy implications. BMC Health Services Research 7:105

Carrin et al. 2007. Health financing reform in Kenya: assessing the social health insurance proposal. SAMJ 97:130-5

De Allegri et al. 2006. Understanding consumers' preferences and decision to enrol in community-based health insurance in rural West Africa<sup>15</sup>  
Health Policy 76:58-71

## Policy implications

- Overall there is lower acceptance of the SHI among civil servants, this may lead to compliance challenges during introduction of SHI; therefore, there is a need to consider preferences of beneficiaries
- Lower contribution rates with copayments may be further investigated and considered
- Further studies are needed to assess the reasons for lower acceptance of SHI



Thank you