An Evaluation of the National Health Insurance Program in Ghana

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Background:
Health care Financing in Ghana

- At independence in 1957 to 1970: free public health services
- In 1970s: introduction of nominal fees to improve financing of public health services
- 1980s: introduction of user fees known as 'cash and carry' that severely restricted access to health care
- 1990s: introduction of private Community health insurance schemes that covered 1% of population by 2002

National Health Insurance Scheme (NHIS)

- 2003: NHIS passed
- Goal: to ensure equitable and universal access to health care services for all Ghanaians
- Financing: 2.5% levy on all goods and services, social security contributions (2.5%), annual premiums (between GHc7.2 and GHc48.0 based on income)
- Coverage (as of December 2007): 42% of population insured; 55% registered

Benefit

Structure

- Annual premium of (between GHc7.2 and GHc48.0) depending on income
- Premium covers children and dependents below 18
- Workers in formal section contribute 2.5% of their contribution to the Social Security and National Insurance Trust (SSNIT)
- Exemptions: elderly(70 yrs or over) and indigent (the core poor)

Package

- Inpatient
- Outpatient
- Essential drugs
- Maternity (ANC and delivery)
- Emergency care
- Eye care

Broad Objective

- To EVALUTE the impact of Ghana's National Health Insurance Scheme (NHIS) on the health conditions of Ghanaians.

Specific Objective

To explore the impact of NHIS on maternal health outcomes by:

- Comparing the health characteristics and outcomes of women who are enrolled with those of women outside the Scheme;

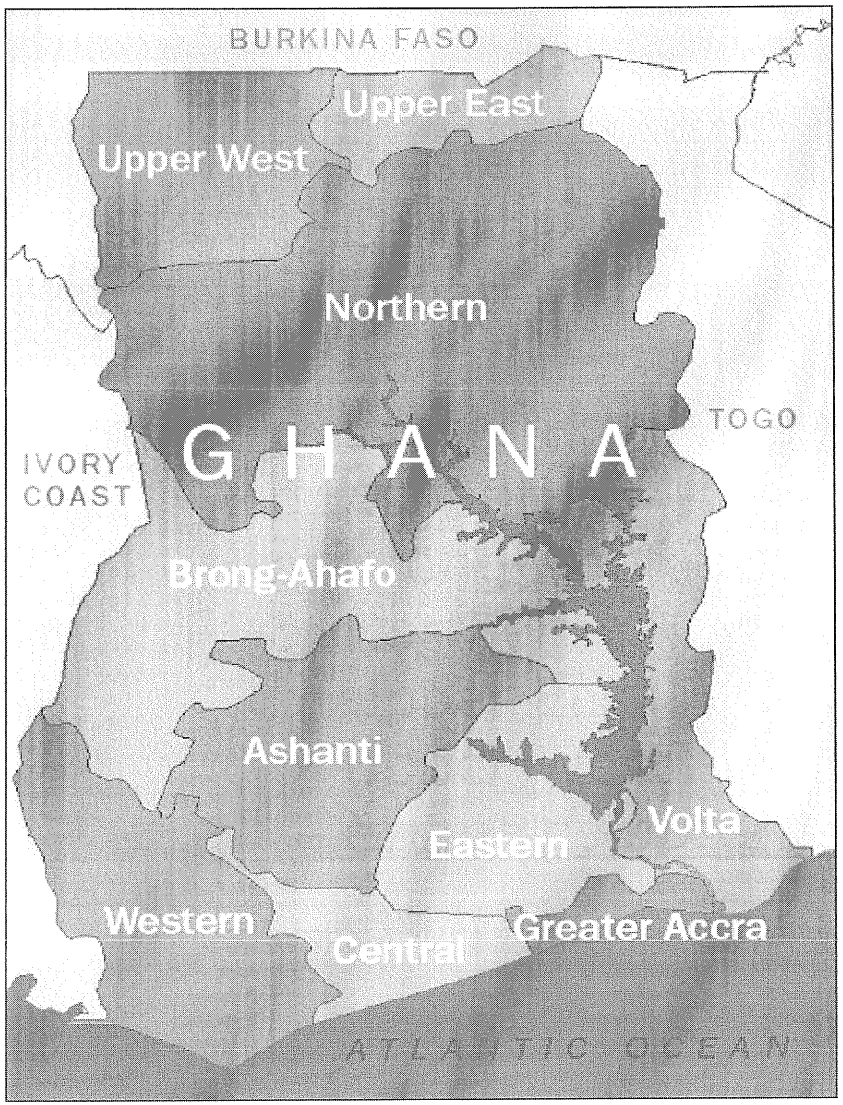
- Examining the difference in health care and utilization between these two groups of women, and understand why some women join and others do not;

Target Group and Regions

- Group: Women, 15-49 years of age, and their children.

- Regions:
  - **Upper East**
  - **Brong Ahafo**

Population Proportions for Regions



Region	%
Western	10.2
Central	8.4
Greater Accra	15.4
Volta	8.6
Eastern	11.1
Ashanti	19.1
Brong-Ahafo	9.6
Northern	9.6
Upper East	4.9
Upper West	3.0

- *Ghana's Pop: 20.4 mil*

Why Brong Ahafo Region

- Longest period operating health insurance schemes;
- Good mix of rural and urban settlements—typical of Ghana.
- Excellent mix of formal and informal activities.
- Mixture of ethnicity and physical geography, being at the geographic center of Ghana.

Why Upper East Region

- Sparsely populated and poor;
- Quite representative of the Northern half of Ghana.
- Savanna vegetation and predominantly rural population provides contrast to the Brong Ahafo (and to the Southern half of Ghana).

Main Data Collection Instruments

- 1. Individual Questionnaire
- 2. Institutional Questionnaire
- 3. Focus Group Discussion

Sample Size

Total Sample Size:2000

- Upper East Region Target: 1000
  - Bolgatanga (100t + 400nt = 500)
  - Talensi-Nabdam (100t + 400nt = 500)

- Brong Ahafo Region Target: 1000
  - Nkoranza District (100t + 400nt = 500)
  - Sunyani Municipality (100t + 400nt =500)

The Individual Questionnaire

- Identification and Geographic Data
- Part I: Socio-economic and demographic characteristics (19Qs)
- Part II: NHIS non/Enrolment Data
  - *Section 1*: For those Enrolled (14Qs)
  - *Section 2*: For Non-members (10Qs)

Individual Questionnaire

- Part III: General Health Care Access and Utilization (11 Qs)
- Part IV: Morbidity, Mortality & Health Status (6Qs)
- Part V: Maternal and Child Health Care and Prevention (20Qs).
- Part VI: Living Environment (6Qs)
- Interviewer's Observation Sheet.

STATISTICAL TOOL

- Evaluation technique used
  - Propensity Score Matching (PSM)—Rosenbaun and Rubin 1983
- Rationale for using the PSM
  - Virtual impossibility of a randomized experiment.
  - Ability to compare the health outcomes of 'treated' & 'untreated' groups that are matched by relevant observable characteristics.

Propensity Score Estimation
Logistic Modeling

- **Treatment Variable**: *NHIS membership*
- **Control Variables**
  - *Age*
  - *Education*
  - *Marital status*
  - *Party Affiliation*
  - *Religion*
  - *Ownership of TV;*
  - *Ownership of Radio;*
  - *Ownership of Fridge*
  - *Rural-Urban*
  - *Distance to healthcare center*

Outcome Variables of Interest

- General Health Outcomes
  - *Preventive check-up*
  - *Outpatient visit*
  - *Hospitalization*
- Maternal and Child Health Outcomes
  - *Births attended*
  - *Hospital births*
  - *Prenatal care*
  - *Birth complications*
  - *Infant deaths*

Logistic: Propensity to Enroll in NHIS

Variables	Coefficient	Std. Err	P>IzI
Age	-0.1871	0.1462	0.201
Education	0.5933	0.1808	**0.001***
Married	-0.0644	0.1452	0.657
Party	0.2508	0.1377	0.069
Religion	-0.1329	0.1988	0.504
TV	0.5200	0.1971	**0.008***
Radio	0.1237	0.2404	0.607
Fridge	0.2588	0.1558	0.097
Rural-Urban	0.1435	0.1371	0.295
Distance	0.4211	0.1491	**0.005***
Constant	*-2.1027*	*0.3311*	*0.000*

PSM:
Common Support Requirement

Block	Treat. *N*	Control *N*	Block Mean Treat.	Block Mean Control
1	18	237	.0778	.0790
2	64	376	.1513	.1474
3	202	483	.2936	.2848
4	11	19	.4187	.4145

Estimated ATT Using Kernel Matching

Variable	Treated	Control	**ATT**	Std Err	*t*
BAttended	99	260	**0.144**	0.048	3.027
HosBirth	105	312	**0.171**	0.050	3.444
Prenatal	115	321	**0.163**	0.035	4.664
BirthCompli	218	671	**-0.044**	0.019	-2.356
InfantDeath	218	672	**-0.037**	0.017	-2.212
Preventive	283	986	**0.125**	0.034	3.742
OPD	279	1072	**0.014**	0.033	0.443
Hospitalized	283	1060	**-0.028**	0.031	-0.917

Major Findings

- NHIS members have significantly better health outcomes.
  - More likely to have prenatal health care, have birth in hospital and attended by trained health care professionals,
  - Less likely to experience infant deaths and birth complications

- Most NHIS members (over 60%) are satisfied with the system
- Main reasons for enrolling; cost effectiveness and financial security (60% + 29% =89%)
- Main reason for non enrolment is finance (90%)

Policy Implications

- Findings support the use of health insurance as a health financing tool especially for poor women who seek maternal health care services
- The finding that finance is a major barrier to NHIS enrolment suggest the need review/improve issues related to equity in insurance coverage

Replication of Ghana's NHIS across Africa

Possible since:

- Health care provision is quite similar across countries in Africa (public health facilities provide health care to about 60% of pop compared to 30% by private)
- Inequalities in health provision largely associated with poverty, and availability and access to health care facilities
- Like Ghana most countries in Africa, in the 1980s and 1990s were compelled by financial constraints to remove government subsidies on health care and now trying to use social insurance to alleviate financial burden and improve access in health care delivery.

The End
Thank You

Room for improvement

- Areas to improve:
  - Reduce red-tape for reimbursement;
  - Increase funds and reduce funding delays;
  - Improve the health care system in general, and the geographic access to care, in particular;
  - Increase public education on the NHIS
  - etc

The Ghana NHIS: Premiums per Categories of Members

Category	Operational Definition	Minimum Annual Contribution
Core Poor	***Unemployed adults who do not receive any identifiable and regular support from elsewhere for subsistence.***	**Free**
Very Poor	***Unemployed adults who receive regular and identifiable financial support form sources of low income.***	**GH ¢7.2 (US$8.0)**
Poor	***Employed adults who have low income and are unable to meet their basic needs.***	
Middle Income	***Employed adults who are able to meet their basic needs***	**GH ¢18 (US19.40)**
Rich	***Adults who are able to meet their basic needs and some of their wants***	**GH ¢48 (US52.00)**
Very Rich	***Adults who are able to meet their basic needs and most of their wants***	

Ghana NHIS: Membership by Regions, June 2007

Region	Population	Total Registered	% Registered
Ashanti	3,924,425	2,008,002	51.2
Eastern	2,274,453	1,161,071	51.0
Brong Ahafo	1,968,205	1,417,540	72.0
Central	1,687,311	934,894	55.4
Western	2,042,340	826,340	40.5
Upper West	561,866	261,443	46.5
Upper East	963,448	366,702	38.1
Northern	1,790,417	1,029,593	57.5
Greater Accra	3,576,312	861,414	24.1
Volta	1,636,462	726,021	44.5
Total	*20,425,239*	*9,593,040*	46.9

NHIS Benefit Packages of the Four Schemes under Study

Item/Disease	Sunyani	Nkoranza	Bolgatanga	T, Nandam
OPD Attendance	X	X	X	X
Hospitalization	X	X	X	X
Snake and dog bite	X	X	X	X
Prescription drug	X	X	X	X
Oral Health	X	X		
Eye care	X	X	X	X
Prenatal	X	X	X	X
Postnatal	X	X	X	X
Delivery by trained attendant	X	X	X	X
Breast-feeding classes				
Breast cancer	X			

View/Perception of NHIS

View/Perceptions	%[1]	N
NHIS Members		
Top reasons for participating		
It is cost effective	59.8	218
No worry about money when sick	29.1	106
Security and peace of mind	8.5	31
Facing a health problem	2.4	9
Total	99.8	364
Health status before enrolling		
Very good	27.3	108
Somewhat good	14.7	58
Normal	51.3	203
Poor	5.6	22
Very poor	1.0	4
Total	99.9	395
Ever benefited from NHIS?		
Yes	81.3	305
No	18.4	69
Total	100	374

Extra slides

Focus Group Discussion Themes

- NHIS Procedures
- Benefits Package
- Premiums and Exemptions
- Prescription Medicine
- Maternal and Child Care Coverage
- Financial Viability of the NHIS
- Perspectives: *Problems, Prospects, and Ways Forward*

Institutional Questionnaire

- Foundation of the Schemes;
- Governance and Organizational Structure;
- Membership, Premiums, Benefits;
- Management and Capacity-Building.

Estimated *ATT* *(average treatment effect)* Using Nearest Neighbor Matching

Variable	Treated	Control	***ATT***	Std Err	*t*
BAttended	99	109	**0.071**	0.067	1.058
HosBirth	105	122	**0.096**	0.062	1.542
Prenatal	115	141	**0.190**	0.055	3.430
Birth Compli	218	359	**-0.040**	0.023	-1.740
Infant Death	218	365	**-0.020**	0.022	-0.904
Preventive	283	583	**0.110**	0.039	2.833
OPD	279	563	**0.042**	0.035	1.217
Hospitalized	283	593	**-0.089**	0.036	-2.466