As you sow, so you reap! Assessing a mandatory employer-based health care financing scheme

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"Managing Growth for Social Inclusion"

Basic Motivations

- Evaluation of a Health “Insurance” Program
- Mandatory employer-sponsored program
- Fit with the literature?
  - One of the earliest RCTs involved health insurance experiment (RAND)
  - Large public health insurance (Oregon, Medicare Part D)
  - Voluntary community/social health insurance (very, very low demand)

Let’s start with a quick overview of the program

Short Description of the Program

- We are collaborating with large employer providing employment to semi-formal female “artisans”
- Producer of a leading brand of handicrafts
- Employer of women artisans: ~35,000 (cumulative?) artisans at 637(recent?) sub-centers in 13 districts
- The employment relationship can be full-time or not, usually paid based on tasks performed
- “Health Security Scheme” rolling out by “centers” or districts
- Giving us an apt opportunity for experimentation

HSS Scheme

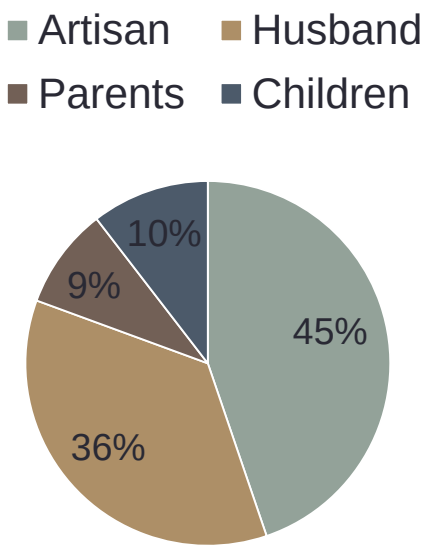
- A 50 taka monthly premium, equally shared by artisans and the employer:
- For any immediate need: 1,000 taka (emergency, normal delivery, medical or surgical need)
- C-section: 5,000 taka
- Primarily in-patient services:
  - 7,000 taka if there are tests(!)
  - 9,000 taka if there is no medical test (there are means to monitor these)
  - 2,000 taka extra for hospitalization
  - 1,000 taka for transport if there is a referral
- Need to be employed for 4 out of last 6 months
  - Married artisan + 4 family members (unmarried children < 18)
  - Unmarried artisan + parents + unmarried children < 18
- Services covered at only **empanelled** service providers

What can we learn from the official claims?

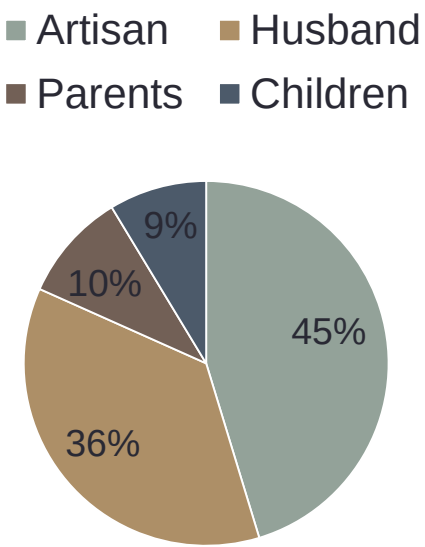
Period covering October, 2015-April, 2016, first seven months of coverage

Disbursement by beneficiary types

N = 67

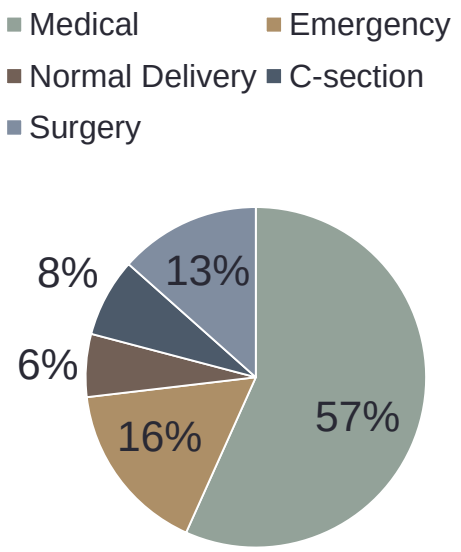


Total Payment = BDT 202,000



Disbursement by health events

N = 67



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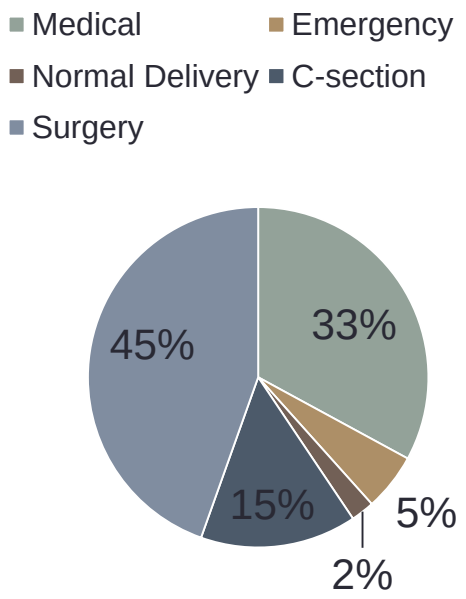


Main Takeaways

- Artisans are the largest beneficiaries, both in terms of number and money.
- Surgery, while fewer in number, has the largest share – almost by design.
- There are nine birth events, five of which are C-sections!
  - Based on more claims: 75% of the 60+ delivery claims are for c-section.
- Approximate revenue from premiums:

  ~600 artisans X 50 taka/month/artisan X 7 months

  = overestimated ~2,10,000 taka (admin data can give us the exact amount)

  > underestimated 2,02,000 taka claim

Putting together our survey and admin data

Health Care Survey

- We have collected detail health care utilization and cost over the last six months.
  - We got much better doing it in the endline.
  - Unfortunately that also makes the baseline and endline not completely comparable.
- So we can measure the total health care cost for the households at the member-event levels
- Let's put together our survey data with the admin for the HSS covered artisan in Kushtia (N = 549)

Main Takeaways

- Among the HSS covered…
  - Total number of illness event reported = 773
  - Total in-patient hospitalization cost = 9,00,524 taka (from survey data)
  - Total HSS coverage = 1,46,500 taka (from claim data)
  - % Covered by HSS = **15.2%**
  - Among 39 cases of HSS utilization, the median coverage = 31%
  - Among all 78 cases of hospitalization, the average HSS coverage = **17.4%**

What can we learn from our experiment?

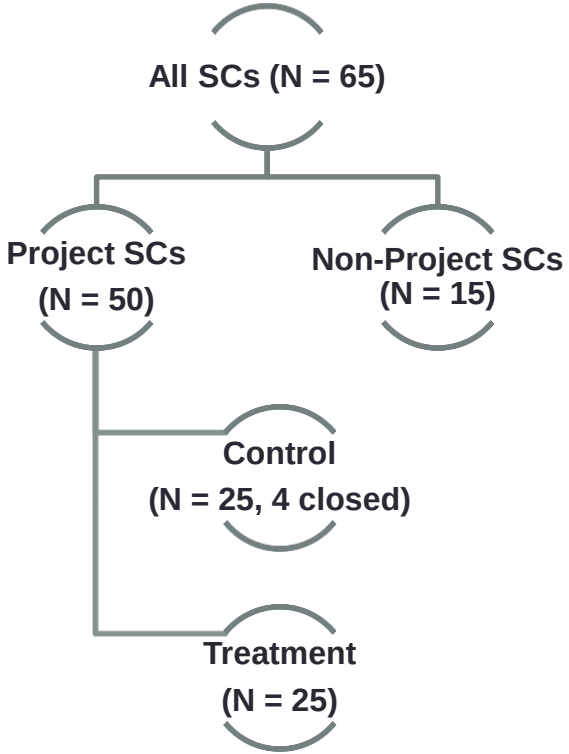
This will be based on a RCT

However, are we asking a trivial question? No!

Before we start…

- Few important implications of the design:
  - Low coverage
  - Primarily for in-patient services
  - Empanelled hospitals
  - Focus on the female artisan

Study Design



Circa August, 2015, we started with 65 (few more closed before that) in Kushtia

We (randomly) chose 50 sub-centers for the project

We chose 25 for control, randomly
- HSS coverage will start there from April, 2016
- Four more closed since then!

Sample

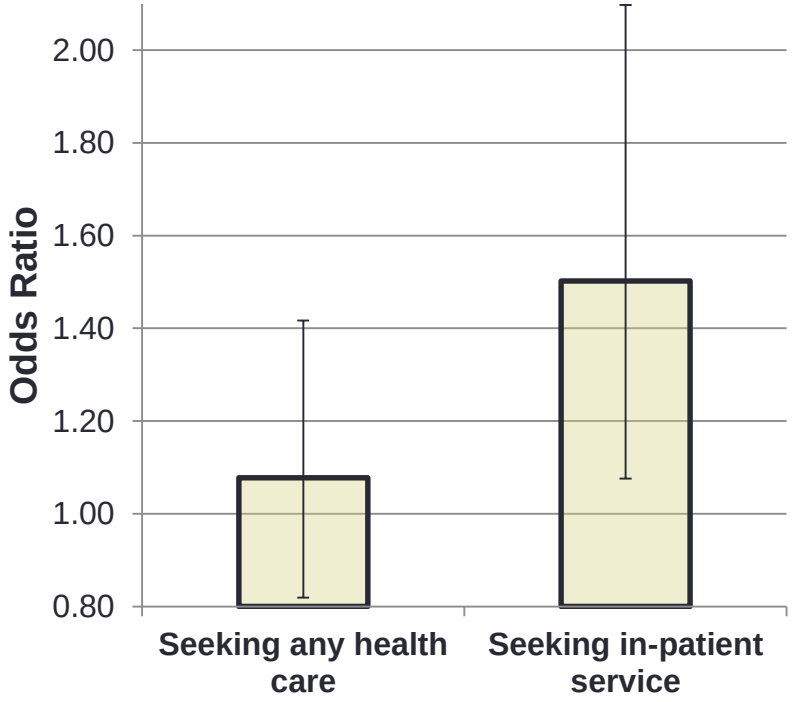
- Baseline
  - September-October, 2015
  - 1,087 artisans: control = 556, treatment = 531
- Endline
  - March-April, 2016 allowing us to evaluate six months of observations
  - 1,144 artisans: control = 594, treatment = 550
- Balanced panel: 1,008, control = 524, treatment = 484
- We will restrict ourselves to households that reported illness
  - *Unit of analysis:* household-member-health event
  - (Again) *Unit of intervention:* sub-center
  - Intent-to-treat analysis: $\text{outcome}_i = \beta\ \text{treatment}_i + \varepsilon_i$

Validity of the trial: Balance test

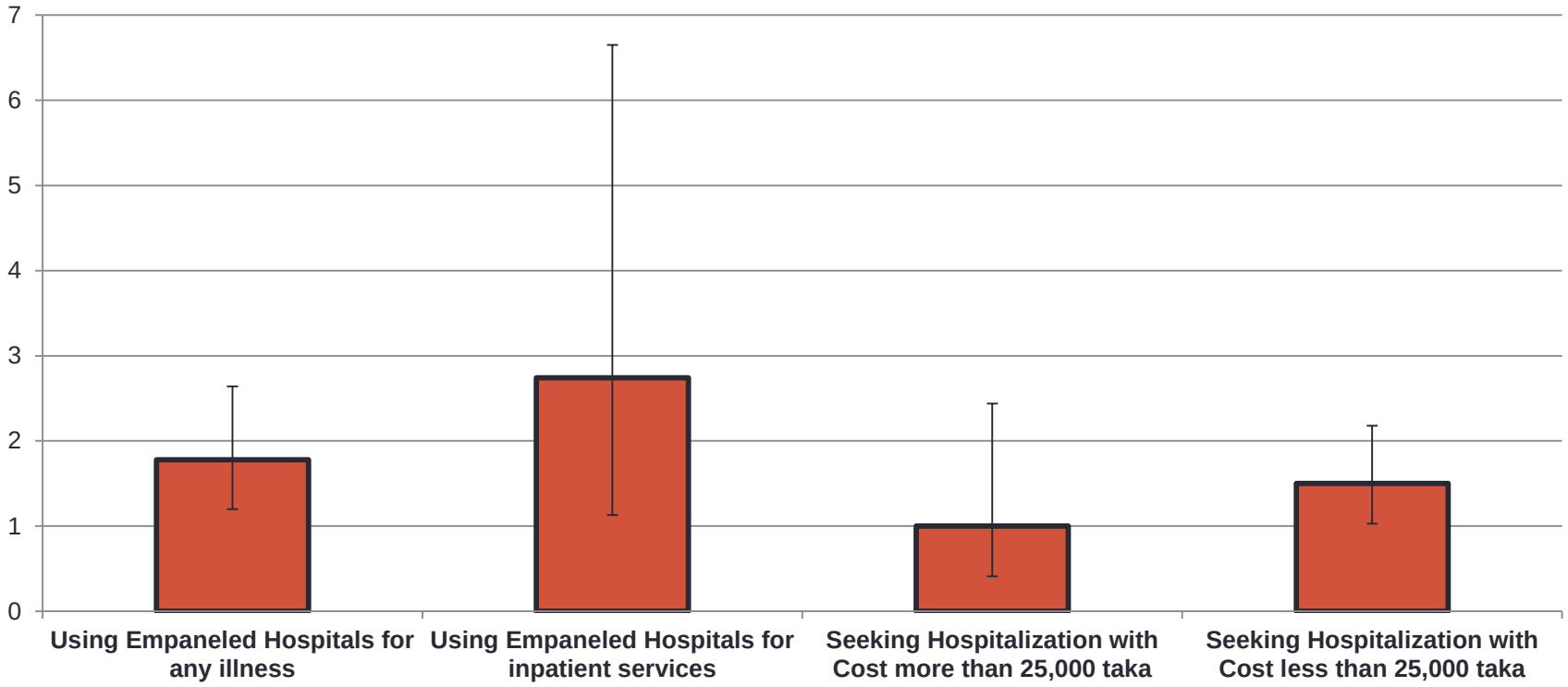
	Control	Treatment	p-value
Artisan			
Age	31.11	31.18	0.912
Currently married (%)	0.82	0.81	0.635
Schooling (Years)	6.00	6.19	0.443
Monthly Income (taka)	946.44	1,137.49	0.000***
Household			
Shares Latrine (%)	0.39	0.37	0.390
Owns TV (%)	0.62	0.69	0.030**
Ceramic or Cement floor (%)	0.39	0.41	0.464
Number of rooms	2.24	2.18	0.336
Has a bank account (%)	0.38	0.40	0.585
Number of Members	4.42	4.25	0.097*
Savings Instrument (%)	0.68	0.65	0.381

Results #1: Health Care Utilization

- Is the program inducing more health care utilization?
  - Moral hazard?
- We will look at (a) any care and (b) hospitalization
- Report odds ratios with 95% confidence intervals



Results #1: Health Care Utilization



Results #1: Health Care Utilization

	(1)	(2)	(3)	(4)	(5)	(6)
	Seeking Any Health Care	**Seeking Hospitalization**	**Using Empaneled Hospital**	**Using Empaneled Hospital**	**Seeking Hospitalization with Cost more than 25,000 taka**	**Seeking Hospitalization with Cost less than 25,000 taka**
Treatment Effect	1.09	1.40*	1.78***	2.74**	1.00	1.50**
	(0.81 - 1.46)	(0.99 - 1.99)	(1.20 - 2.64)	(1.13 - 6.65)	(0.41 - 2.44)	(1.03 - 2.18)
Observations	1,706	1,703	1,706	144	1,706	1,706

Results #2a: Treatment Effects on Hospitalization Costs

	(1)	(2)	(3)
VARIABLES	HSS Coverage	Hospitalization Cost	Hospitalization Cost Net of HSS Coverage
Control Mean	-		
Treatment Effect			
Observations			

Results #2b: Treatment Effects on Hospitalization Costs Conditional on being Hospitalized

	(1)	(2)	(3)
VARIABLES	HSS Coverage	Hospitalization Cost	Hospitalization Cost Net of HSS Coverage
Control Mean	-		
Treatment Effect			
Observations			

Results #2c: Treatment Effects on Other Costs

	(1)	(2)	(3)	(4)
	Spending on Diagnostics		Drug Expenditure	
Control Means	275.73	225.89	1,655.53	1,257.26
Treatment Effects	25.03	-36.26	139.11	-618.03
	(0.64)	(0.83)	(0.46)	(0.26)
Observations	1,706	144	1,706	144
R-squared	0.01	0.05	0.01	0.06

Results #2d: Treatment Effects on Mental Health

	(1)	(2)
	gad	phq
Control Means	5.83	5.15
Treatment Effects	-0.15	0.26
	(0.78)	(0.73)
Observations	1,089	1,089
R-squared	0.05	0.04

So what?

Conclusions

- The right approach to cover people who wouldn't otherwise be covered (most employment in Bangladesh is informal)
- Can pool risk over a large population (35,000? X 4.25 people)
- Utilization is substantial
- However,
  - Barely breaking even (but actuarially
  - There are other medical costs (Dx, Rx) which are not covered
  - Only small fraction of cost is covered leading to our weak results

Thanks.

Any comments and suggestions are welcome, now or email:
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