Impact of extending Social Health Insurance for the poor on facility-based deliveries in the Philippines

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Background

• Channeling increased funding flows through the National Health Insurance schemes offers the best avenue to improve (1) the supply of services, (2) access to health services and (3) delivering quality health care, especially in low-income countries (WHO, 2005)

• Strong calls for Universal Health Coverage has prompted countries to institute / expand health insurance and prioritize health (WHO, 2008, 2010, 2013)

• However, recent studies have no consensus on the impact of health insurance especially among the poor, with no strong evidence of an impact on utilization, financial risks and health status (Acharya et al., 2013)
Background

- Philippines – premium sharing for the poor (National and Local) has not increased coverage under Philhealth (Before UHC/KP policy) (Chakraborty 2013)

Strategies in expanding SHI for the poor

- Strategy in the Philippines has shifted from a premium sharing scheme for the identified poor by LGUs (Pre-policy) to Full National Government subsidy to the proxy-tested poor in 2011 (post-policy) (DOH 2011, Philhealth revised IRR, 2013).

- Since then, there has been a marked increase in the number of SHI indigent members from **22% in 2010 to 46% in 2014** (More than the employed members at 40% in 2014) (Philhealth, 2010, 2014)
Philippines’ Health System

• 1991 – Health System was Devolved
  • Local Chief Executives (LCEs) role critical in Local Health development after Devolution
  • DOH – Remained (National Health Agency)
    • DOH Regional Agency – Center for Health Development Offices
    • DOH Retained Hospitals / Specialty centers

• 1995 – Creation of the National Health Insurance

• 1999 – Health Sector Reform Agenda

• 2005 – FOURmula 1 for Health (Financing, Service Delivery, Regulation & Governance)

• 2011 – UHC (Kalusugang Pangkalahatan)

Levels of Health Service Delivery
UHC/KP policy in the Philippines


- Enrollment of 5.2 Million Poor Filipinos to the National Health Insurance (Philhealth)
- Training and Mobilization of Community Health Teams (CHTs) to increase utilization of health services / use of Philhealth
- Reduction of unmet needs for Maternal and Child Health
- Health Facilities Enhancement Program – to Improve capacities of Health Facilities

3 Thrusts of UHC in the Philippines

UHC/KP policy in the Philippines

Poor household: How were they enrolled under the UHC/KP?

1. National Household Targeting System for Poverty Reduction (NHTS-PR)
2. Proxy Means Test (PMT); Identification of the poorest of the poor Filipinos (5.2 M)
3. DOH / Philhealth Enrollment to SHI (Sponsored category)
Health Insurance Theories

Theories of Health Insurance

Demand for Health insurance

Adverse Selection
“The sick pays more for health”

Demand for Health -> demand for health care -> demand for health insurance

Economic Model of Demand; (Besley 1989)

Moral Hazard

Ex-ante
Change in lifestyle of the insured individuals exist

Post-ante
Increased consumption/use of health services

Are the increase beneficial?
(Nyman, 1999)

Risk-Sharing

Informal vs. Health Insurance

Reliance on informal risk-sharing; Lack of trust to institutions

*Figure based on author’s illustration
Value of Health Insurance

Nyman (1999): Value of Health Insurance

The access value of health insurance is related to the value of the consumer of medical care that the person would not otherwise be able to afford.

“If the insurance is the only way to gain access to expensive health care, then the value of insurance for that care is the expected consumer surplus from health care that would otherwise be inaccessible.”

Moral Hazard as otherwise implied, is not necessarily inefficient if the increase in health service use was brought by the access value of insurance to necessary services that were previously inaccessible.

In the context of low-income countries, where levels of unmet needs tends to be substantial, increased in consumption are not necessarily problematic (Jowett, 2004)
## Related studies

**Studies measuring SHI impact to the poor (targeted)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Study objectives</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colombia</strong> (Trujillo, Portillo, &amp; Vernon, 2005)</td>
<td>Measurement of the impact of the subsidized health insurance for the poor in Colombia (PSM and IV Estimations)</td>
<td>The subsidized health insurance program greatly increased medical care utilization among the poor</td>
</tr>
<tr>
<td><strong>Colombia</strong> (Miller, Pinto, and Vera-Hernandez, 2009)</td>
<td>Determination of how the SR enrollment is associated with financial risk protection and efficiency in health service use (IV estimation)</td>
<td>The SR has been successful in financially protecting the poor from financial risk associated with medical costs of unexpected illnesses; Increase in utilization of the previously underutilized preventive services.</td>
</tr>
<tr>
<td><strong>Vietnam</strong> (Wagstaff, 2010)</td>
<td>Measuring the impact of VHCFP on health service use and financial risk protection using VHLS surveys (Difference-in-differences)</td>
<td>VHCFP had no impact on use of health services. ATT of health insurance did not show statistically significant results for out-patient or in-patient visits; VHCFP substantially reduced OOP spending.</td>
</tr>
</tbody>
</table>
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<td><strong>Vietnam</strong> (Axelson et al, 2009)</td>
<td>Evaluation of the short-term impacts of VHCFP on utilization and out of pocket expenditure using VHLS survey (PSM and double differencing)</td>
<td>Small, positive impact on overall healthcare utilization; statistically significant result in out-patient strong negative impact on out-of-pocket expenditure; the insured had lower OOP expenditure for in-patient care</td>
</tr>
<tr>
<td><strong>Georgia</strong> (Bauhoff, Hotchkiss, and Smith, 2011)</td>
<td>Measuring the impact of the medical insurance for the poor using a dedicated survey of 3500 households (RDD estimation)</td>
<td>There was no impact seen on utilization; lower expenditure was only seen on the elderly group, all others with no robust evidence. Lower expenditure among the insured for inpatient care.</td>
</tr>
<tr>
<td><strong>Georgia</strong> (Zoidze, Rukhazde, Chkhatarashvili, and Gotsadze, 2013)</td>
<td>Mix-method study of Georgia’s health insurance for the poor, using secondary data analysis and health expenditure and utilization surveys of 2007-2010 (DID)</td>
<td>MIP has positive impact in terms of reduced expenditure for IP services; Consequently, the MIP had almost no significant effect on health services utilization.</td>
</tr>
</tbody>
</table>
Did health insurance made health services more accessible to the poor?
### Methods

#### 3.1 Research Design

**SHI Impact and Health Service Utilization**

**I. Quasi-Experimental - Impact of extending SHI for the poor**

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Description</th>
<th>Percentage of Insured HH (Income quintile 1&amp;2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDHS 2013 (Post-policy)</td>
<td>NHDS survey data conducted in the Philippines <strong>after</strong> the UHC/KP policy in 2011</td>
<td><strong>44.24%</strong> of total households covered</td>
</tr>
<tr>
<td>NDHS 2008 (Pre-policy)</td>
<td>NDHS survey data conducted in the Philippines <strong>before</strong> the initiation of the UHC/KP policy in 2011</td>
<td><strong>15.75%</strong> of total households covered</td>
</tr>
<tr>
<td>Department of Health / Philhealth / National Statistical Board</td>
<td>Information about regional/provincial community-level variables to be used in the analysis</td>
<td></td>
</tr>
</tbody>
</table>

*Wealth Index: Samples are categorized using an index which is equal to 1 for the poorest to 5 for the richest*
## Methods

### Why NDHS?

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Households Covered</th>
<th>Total population (Women, Children, Household Members)</th>
<th>Total Women Respondents</th>
<th>Total number of Children &lt;5</th>
<th>% of Poor and next poor samples (Q1 &amp; 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>14,804 (43% in Q1&amp;2)</td>
<td>70,100 (45% in Q1&amp;2)</td>
<td>16,155 (40% in Q1&amp;2)</td>
<td>7,216 (54% in Q1&amp;2)</td>
<td>40% of total sample</td>
</tr>
<tr>
<td>2008</td>
<td>12,469 (45% in Q1&amp;2)</td>
<td>60,901 (45% in Q1&amp;2)</td>
<td>13,594 (40% in Q1&amp;2)</td>
<td>6,572 (55% in Q1&amp;2)</td>
<td>40% of total sample</td>
</tr>
</tbody>
</table>
Measuring impact of sponsored SHI on health service use (Facility-based delivery)

Level 2: Community-level characteristics

(1) Women (Q1&2) who delivered in the last 24 months (NDHS 2013)

Methods

Insured under UHC/KP (treatment)

Impact of Health insurance to Service Utilization

Uninsured (control)
Methods

**Determination of the impact of SHI for the poor will be determined controlling both for individual and community factors.**

<table>
<thead>
<tr>
<th>Facility Delivery (Q1 &amp; Q2)</th>
<th>Year</th>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>290 (24%)</td>
<td>679 (51%)</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>928 (76%)</td>
<td>651 (49%)</td>
</tr>
</tbody>
</table>

**Variable Name** | **Coding** | **Definition**
--- | --- | ---
Dependent Variable | | |
fbd - Women who last delivered in a facility (Facility-Based Delivery) | 0, 1 | Identified women who delivered in a health facility (government / private)
Methods

Model: **DID under Linear Probability Model (LPM), with cluster-robust standard errors**

Interaction terms in the DID model using a **Non-linear model will not be able to show the ATT of the interaction variable** (A & Norton, 2003; Athey & Imbens, 2006)

**Difference-in-Differences Estimation**

$$\gamma_{it} = \beta_0 + \beta_1 \text{postpolicy}_t + \beta_2 \text{sponsored}_i + \beta_3 \text{postpolicy}_t \cdot \text{sponsored}_i + \beta_4 x_{it} + u_{it}$$

- $\beta_1 \text{postpolicy}_t = 1$ if year 2013
- $\beta_2 \text{sponsored}_i = 1$ if insured under the UHC/KP (Sponsored category); 0 if uninsured
- $\beta_4 x_{it} =$ Other covariates (Individual / Community)
- $\beta_3 \text{postpolicy}_t \cdot \text{sponsored}_i =$ Post-policy effect of SHI coverage on Utilization
Methods

Model: **DDD under Linear Probability Model (LPM), with cluster-robust standard errors**

Identification of post-policy effect of SHI on utilization with consideration of urban/rural community types

Assumption: **individuals from urban community types have more access to health facilities**

**Triple Differences Estimation**

\[
\gamma_{it} = \beta_0 + \beta_1 \text{postpolicy}_{it} + \beta_2 \text{sponsored}_{it} + \beta_3 \text{postpolicy}_{it} \cdot \text{sponsored}_{it} + \beta_4 \text{comm}_{it} + \beta_5 \text{postpolicy}_{it} \cdot \text{comm}_{it} + \beta_6 \text{comm}_{it} \cdot \text{sponsored}_{it} + \beta_7 \text{postpolicy}_{it} \cdot \text{sponsored}_{it} \cdot \text{comm}_{it} + \beta_8 x_{it} + u_{it}
\]

- \(\beta_4 \text{comm}_{it} = 1\) if Urban; 0 if Rural
- \(\beta_8 x_{it}\) = Other covariates (Individual / Community)
- \(\beta_7 \text{postpolicy}_{it} \cdot \text{sponsored}_{it} \cdot \text{comm}_{it}\) = Post-policy effect of SHI coverage on utilization per community type
## Results

The models yielded **insignificant** results.

This suggests that despite the fact that FBDs increased (2008-2013), there is no significant evidence to say that the increase was brought by the “insured” status of the poor (from UHC/KP policy).

### Table: Interaction variables

<table>
<thead>
<tr>
<th>Interaction (DD)</th>
<th>MLR</th>
<th>HLM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction (DD)</td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Interaction (DD)</td>
<td>-0.07</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

### Table: Independent Variables (x)

<table>
<thead>
<tr>
<th>Education</th>
<th>Number of HH Members</th>
<th>Head of HH Sex</th>
<th>Head of HH Age</th>
<th>Wealth Index Decile (5 decimals)</th>
<th>Total number of Children</th>
<th>Union Status</th>
<th>Partners' Educational Attainment</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08*</td>
<td>-0.01*</td>
<td>-0.04</td>
<td>0.00*</td>
<td>1.45e-06</td>
<td>-0.01*</td>
<td>-0.04</td>
<td>0.06*</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Table: Level 2 Variables (Regions)

<table>
<thead>
<tr>
<th>Number of Government Hospitals</th>
<th>Number of Private Hospitals</th>
<th>Number of RHUs / Lying-in</th>
<th>Number of Philhealth Accredited Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01*</td>
<td>-0.01*</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

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n=2,257

• The models yielded insignificant results.

• This suggests that despite the fact that FBDs increased (2008-2013), there is no significant evidence to say that the increase was brought by the “insured” status of the poor (from UHC/KP policy).
Key Messages

1. Measuring the impact of the recent policy change in the Philippines, insuring the poor does not seem to have an immediate effect of increasing use of health services.

2. Further studies to explore other barriers to health use despite the “insured” status of the poor should be further investigated which may be related to the following:
   - **Availability** of health facilities (for delivery) where the poor is located
   - **Awareness** of the nationally sponsored poor of their health insurance benefits
   - **Ease of Use** (of insurance benefits) in facilities
   - **OOP payments** above insurance coverage (from patient experience), etc.
Key Messages

3. Many countries now are using subsidies to achieve UHC – it is important therefore to note that while health insurance is important to enable the poor to access services, other supply- / demand-side barriers beyond financing services should be considered.

4. Medium- and long-term evaluation is recommended for thorough policy evaluation and future health policy development.
Thank You!
Maraming Salamat!
감사합니다!

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