Financial Protection in Health:
Alternative Framework and Evidence from Vietnam

Shorenstein Asia-Pacific Research Center
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Jennifer Prah Ruger, PhD
University of Pennsylvania
Motivation

- Greater global and domestic academic and policy interest in role of health systems in health, development, and economic growth

- Increasing scrutiny of conventional frameworks and measures of financial protection in academic literature

- WHO (World Health Reports 2000/2001 and 64th World Health Assembly) called for sustainable health financing and universal health coverage
Academic and policy analysts have developed two primary metrics for financial protection:

1. **Catastrophic spending**: above a threshold percentage
2. **Impoverished spending**: pushes a household below the poverty line

Both methods:
- Measure the percentage of out-of-pocket health spending in households' overall spending from a health event
- Useful indicators of absolute and relative level of household out-of-pocket health care spending and employed in multiple studies worldwide
- Increasingly criticize for being inadequate and subject to considerable variability depending on study and survey design
Critiques of Conventional Indicators

Catastrophic and impoverished spending fail to account for:

- Cost barriers (Schoen et al 2010, Ruger 2003)
- Differences in health care utilization by ability to pay (Ruger et al 2003)
- Protection inadequacies for poor individuals (Preker et al 2004)
- Illness vulnerability (e.g., chronic conditions) (Ruger & Kim 2007)
- Degrees of financial protection and coverage (underinsurance)
- “Informal” treatment payments
- Debt or credit financing of health care expenditures (Van Damme et al 2003), draw down savings
- Reduced consumption of other household necessities (e.g., food, education, or utilities)
- Indirect costs of illness (e.g., income loss due to poor health)

Metrics do not show why household did or did not have expenditures
Critiques of Conventional Methods

- Underestimate adverse consequences of inadequate financial protection in health.

- Impoverishment metrics wrong: always result in impoverishment, households with expenditures always spend more than those without, households with expenditures show impoverishment simply because spend more than those without (Anand 2012).

- Asks wrong question: question should be not what % of households impoverished given current health financing scheme, but what policy reforms necessary to ensure everyone gets health care they need (Anand 2012).

- Neglects problem of unmet need: underestimate problem by only considering households that use health care services, neglecting households that cannot access services due to financial or other barriers (Smith and Papanicolas 2012).

- Do not measure specific drivers of financial risk in system, need to analyse coverage for certain basic health care treatments and OOP (Smith and Papanicolas 2012).

- By inadequately representing risk protection and costs, current methods can potentially provide inaccurate estimates and mislead policy makers (Moreno-Serra et al 2011).
Theoretical Foundations of Health Insurance and Financial Protection

- Health insurance creates conditions for human flourishing by:
  1. Keeping people healthy
  2. Protecting ill individuals and their households from insecurity and harmful deprivations in essential goods (e.g., food, basic education, utilities)

- A lack of access to insurance-provided financial protection increases vulnerability, undermines well-being, and hinders human flourishing

- Access to and financing of health care have inseparable equity implications

- Conventional methods and indicators of financial protection inadequately address these key ethical goals
Theoretical Foundations of Health Insurance and Financial Protection

- Individuals and households without health insurance must:
  - Forgo necessary health care, use informal risk-sharing arrangements, self-insure, drain savings, borrow and service debt, diversify and sell assets, reduce consumptions, these actions diminish current welfare and future prospects
  - Unmet health needs can lead to further health declines, illness-related direct and indirect costs, even irreversible disability and death

- Financing methods that fail to provide sufficient protection and deprive people of high quality, medically necessary, and medically appropriate care violate principles of health insurance
A Multidimensional Approach

- Financial and health implications of health needs are interrelated
  - E.g., coping strategies, while helpful in stabilizing certain situations in the very short term, can damage household economic and health security over time
  - Decreased food consumption and stress caused by economic burdens can undercut health, and poor health weakens one's ability to work, diminishing one's capacity to repay loans—especially loans with high interest rates—and to afford other expenses such as education and work equipment

- Understanding these interrelations is important to enabling and maintaining the broader conditions for human flourishing

- Analyzing financial protection from these theoretical foundations offers a broader and more complete picture of relevant factors

- Unidimensional catastrophic and impoverishing spending measures too narrow and limited
Multiple dimensions of financial protection profile include:

- Episode of illness
- Access to health care, at what level, what type (e.g., outpatient, inpatient, self-treatment, none)
- Health facility type (e.g., district or provincial hospital, community clinic)
- Health insurance status (e.g., insured, uninsured, underinsured)
- Health insurance scheme (e.g., compulsory, voluntary)
- Health insurance utilization (e.g., insured but not using and reasons)
- Coping strategies (e.g., income, savings, relatives or friends, borrowing)
- Total costs of illness
- Household resource reallocation among categories (e.g., food, transportation, education, housing, utilities, construction, etc.)
- Stratification (e.g., by income, poverty level, etc.)

FPP offers a more accurate picture of how households of different income levels fare across various dimensions when confronting a health need.
Evidence from Vietnam

Coping with Healthcare Expenses among Poor Households

Impact of Healthcare Treatment on Household Resource Allocation by Income Status

Relationship Among Health Insurance and Healthcare Treatment and Cost
Collaborators

Kim Thuy Nguyen, Oanh Thi Hai Khuat, Shuangge Ma, Duc Cuong Pham, Giang Thi Hong Khuat, Jennifer Prah Ruger
Socialist Republic of Vietnam
Methods: Sample

- Surveyed 706 households (166 Poor, 184 Near Poor, 356 Other) in Dai Dong rural commune

- 705 households at least one member with illness in past 12 months

- Average commune comprises 2000-2500 households, with 8000-9000 people, Dai Dong has 11 villages, 2230 households and 9678 people

- Selected all poor and near poor households to survey and randomly selected equal number of ‘other’ households

- Respondent was household member most informed about budget and health, defined and if understood study, gave informed consent

- Response rate almost 100%
Methods: Survey Design and Data Collection

- Survey instrument consisted of Forms A-D, written in English, translated to Vietnamese and back-translated for accuracy
  - Form A: demographic information for all household members, information regarding illness and treatment, household consumptions
  - Form B: health costs and means of payment for inpatient treatment
  - Form C: health costs and payment means for outpatient treatment
  - Form D: health costs and payment means for self-treatment
- Interviews conducted in Vietnamese, covering 12 months prior to survey
Methods: Poverty Definitions

■ Poor, Near Poor and Other
  ◆ Classification determined by commune administration according to national government policies and standards
  ◆ Based on cutoffs of per capita annual income
  ◆ Mean annual income per capita was $630.5 for overall sample, $428.1 for poor, $531.0 for near poor, and $776.0 for other households

■ Income Quartiles
  ◆ Average per capita income of quartiles 1, 2, 3 and 4 was $203.3, $355.6, $519.4, and $1449.6 respectively.
  ◆ Per capita income was $0.56 and $0.97 per day for quartiles 1 and 2, and $1.42 and $3.97 for quartiles 3 and 4
  ◆ International poverty standard is $1.25 (World Bank 2008.)
Five Most Common Coping Strategies for Inpatient Treatment and for Loans Borrowed to Pay for Inpatient Treatment

A. Coping with Inpatient Treatment Costs

B. Coping with Loans Borrowed to Pay for Inpatient Treatment Costs
Five Most Common Coping Strategies for Outpatient Treatment and for Loans Borrowed to Pay for Outpatient Treatment

A. Coping with Outpatient Treatment Costs

B. Coping with Loans Borrowed to Pay for Outpatient Treatment Costs
## Five Most Common Coping Strategies to Pay for Low and Extremely High Cost Treatment

### INPATIENT TREATMENT

<table>
<thead>
<tr>
<th>Coping strategy</th>
<th>% Episodes using coping strategy to pay for inpatient costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
<th>% Episodes using coping strategy to pay for loans taken for inpatient costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
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</thead>
<tbody>
<tr>
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<td>51.0</td>
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<td>Savings</td>
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<td>60.8</td>
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<td>29.5</td>
<td>39.2</td>
<td>30.4</td>
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<tr>
<td>Loans</td>
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<td>66.7</td>
<td>28.3</td>
<td>20.6</td>
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<tr>
<td>Food reduction</td>
<td>8.9</td>
<td>17.6</td>
<td>4.3</td>
<td>0.0</td>
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### OUTPATIENT TREATMENT

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<th>Coping strategy</th>
<th>% Episodes using coping strategy to pay for outpatient costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
<th>% Episodes using coping strategy to pay for loans taken for outpatient costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
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<td>49.8</td>
<td>36.8</td>
<td>64.4</td>
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<tr>
<td>Savings</td>
<td>78.1</td>
<td>68.0</td>
<td>62.1</td>
<td>52.5</td>
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<td>Relatives/Friends</td>
<td>15.4</td>
<td>17.2</td>
<td>18.9</td>
<td>17.8</td>
</tr>
<tr>
<td>Loans</td>
<td>11.0</td>
<td>34.7</td>
<td>12.6</td>
<td>19.8</td>
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<tr>
<td>Food reduction</td>
<td>3.0</td>
<td>6.5</td>
<td>1.1</td>
<td>5.9</td>
</tr>
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</table>

### SELF-TREATMENT

<table>
<thead>
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<th>Coping strategy</th>
<th>% Episodes using coping strategy to pay for self-treatment costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
<th>% Episodes using coping strategy to pay for loans taken for self-treatment costs Lower 75% Cost</th>
<th>Upper 25% Cost</th>
</tr>
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<tbody>
<tr>
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<td>52.7</td>
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<td>76.7</td>
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<td>Relatives/Friends</td>
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<td>12.9</td>
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<td>Loans</td>
<td>7.9</td>
<td>13.3</td>
<td>15.4</td>
<td>21.6</td>
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<tr>
<td>Food reduction</td>
<td>1.7</td>
<td>2.5</td>
<td>3.1</td>
<td>2.7</td>
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</table>
Coping Strategies

- Higher proportion of poor (44%) than other (24%) borrow to repay loans for inpatient treatment

- Borrowing funded more outpatient treatment for poor (20%) and near poor (24%) than other (12%)

- Compared to low cost, extremely high cost treatment was more likely to be funded by loans for households of all poverty levels

- For extremely high cost outpatient treatment, greater likelihood of loans among poor (OR=5.04) and near poor (OR=5.16) than among other (OR=3.70)
# Mean household consumption by income quartiles

<table>
<thead>
<tr>
<th>Consumption Item</th>
<th>Description</th>
<th>Total</th>
<th>Income Quartile 1</th>
<th>Income Quartile 2</th>
<th>Income Quartile 3</th>
<th>Income Quartile 4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Percent</td>
<td>Mean</td>
<td>Percent</td>
<td>Mean</td>
</tr>
<tr>
<td>Food</td>
<td>Rice, produce, meat, etc. Tuition, books, room and board</td>
<td>3614.1</td>
<td>28.9</td>
<td>2940.7</td>
<td>41.7</td>
<td>3323.2</td>
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<tr>
<td>Education</td>
<td>Items for farming, business, trade</td>
<td>904.2</td>
<td>7.2</td>
<td>519.1</td>
<td>7.4</td>
<td>847.7</td>
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<td>Production means</td>
<td></td>
<td>2647.7</td>
<td>21.2</td>
<td>519.5</td>
<td>7.4</td>
<td>670.4</td>
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<tr>
<td>Transportation</td>
<td>Gas, oil, repairs, motorcycles</td>
<td>299.4</td>
<td>2.4</td>
<td>136.3</td>
<td>1.9</td>
<td>240.2</td>
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<tr>
<td>Healthcare</td>
<td>Treatment, medicine, gifts to health staff</td>
<td>732.8</td>
<td>5.9</td>
<td>736.6</td>
<td>10.4</td>
<td>623.3</td>
</tr>
<tr>
<td>Construction</td>
<td>Building and repair of home or business</td>
<td>1755.9</td>
<td>14.0</td>
<td>956.5</td>
<td>13.6</td>
<td>1353.4</td>
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<tr>
<td>Charity</td>
<td>Gifts for mourning, for community</td>
<td>514.7</td>
<td>4.1</td>
<td>327.7</td>
<td>4.6</td>
<td>380.0</td>
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<tr>
<td>Durable goods</td>
<td>Furniture, electronic devices</td>
<td>472.7</td>
<td>3.8</td>
<td>114.7</td>
<td>1.6</td>
<td>282.4</td>
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<tr>
<td>Utilities</td>
<td>Electricity, gas, water, phone</td>
<td>470.1</td>
<td>3.8</td>
<td>286.8</td>
<td>4.1</td>
<td>377.5</td>
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<td>Daily goods</td>
<td>Toiletries, kitchen supplies</td>
<td>237.3</td>
<td>1.9</td>
<td>202.3</td>
<td>2.9</td>
<td>230.4</td>
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<tr>
<td>Social activities</td>
<td>Entertainment, travel, weddings, holidays</td>
<td>30.6</td>
<td>0.2</td>
<td>12.4</td>
<td>0.2</td>
<td>26.8</td>
</tr>
<tr>
<td>Insurance</td>
<td>Property, health, etc</td>
<td>20.3</td>
<td>0.2</td>
<td>9.3</td>
<td>0.1</td>
<td>20.1</td>
</tr>
<tr>
<td>Gifts</td>
<td>Offerings to family and friends</td>
<td>21.3</td>
<td>0.2</td>
<td>20.2</td>
<td>0.3</td>
<td>13.7</td>
</tr>
<tr>
<td>Tobacco/Alcohol</td>
<td>Cigarettes, tobacco, liquor</td>
<td>137.7</td>
<td>1.1</td>
<td>85.4</td>
<td>1.2</td>
<td>109.9</td>
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<tr>
<td>Loan Interest</td>
<td>Interest paid on loans</td>
<td>131.9</td>
<td>1.1</td>
<td>98.5</td>
<td>1.3</td>
<td>53.6</td>
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<td>Other</td>
<td>Expenditures not listed</td>
<td>572.9</td>
<td>4.6</td>
<td>93.0</td>
<td>1.3</td>
<td>257.3</td>
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<td>Total</td>
<td></td>
<td>12517.5</td>
<td>100.0</td>
<td>7055.3</td>
<td>100.0</td>
<td>8806.2</td>
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</table>

Note: Data are reported in 1000 VND
Household consumption by income quartiles

% Household Consumption

- Food
- Education
- Production means
- Transportation
- Healthcare
- Construction
- Charity
- Durable goods
- Utilities
- Daily goods
- Social activities
- Insurance
- Gifts
- Tobacco/Alcohol
- Loan interest
- Other

Legend:
- Income Q1
- Income Q2
- Income Q3
- Income Q4
## Adjusted differences in consumption items between households with and without inpatient treatment

<table>
<thead>
<tr>
<th>Consumption Item</th>
<th>Difference between households with and without inpatient treatment</th>
<th>Mean</th>
<th>Percentage</th>
<th>Difference between households with and without inpatient treatment</th>
<th>Mean</th>
<th>Percentage</th>
<th>Difference between households with and without inpatient treatment</th>
<th>Mean</th>
<th>Percentage</th>
<th>Difference between households with and without inpatient treatment</th>
<th>Mean</th>
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<th>Difference between households with and without inpatient treatment</th>
<th>Mean</th>
<th>Percentage</th>
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<tr>
<td>Food</td>
<td></td>
<td>-248.7</td>
<td>-2.0</td>
<td>-986.0</td>
<td>-14.0</td>
<td>0.0</td>
<td>148.0</td>
<td>1.3</td>
<td>148.0</td>
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<td>347.5</td>
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<tr>
<td>Education</td>
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<td>-137.4</td>
<td>-1.1</td>
<td>-242.1</td>
<td>-3.4</td>
<td>-1.7</td>
<td>121.3</td>
<td>1.1</td>
<td>121.3</td>
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<td>75.9</td>
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<td>Production means</td>
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<td>517.1</td>
<td>7.3</td>
<td>9.1</td>
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<td>5.9</td>
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<td>Construction</td>
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<td>158.3</td>
<td>-1.3</td>
<td>1028.6</td>
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<td>11.9</td>
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<td>Other</td>
<td></td>
<td>-109.9</td>
<td>-0.9</td>
<td>-12.6</td>
<td>0.0</td>
<td>-0.2</td>
<td>683.0</td>
<td>6.1</td>
<td>683.0</td>
<td>395.5</td>
<td>1.7</td>
<td>395.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: This table depicts results after controlling for household size, age, gender, marital status, occupation, and education of the household head, presence of household member under 18 years or over 65 years old.
Household Allocation Patterns

- Compared to households without inpatient treatment, households with inpatient treatment decreased consumption of food, education and production means.

- Lowest-income quartile showed most significant decrease in consumption, while higher-income quartiles showed decreases in consumptions like durable goods.

- Compared to households with low levels of outpatient treatment, households with highest level had decreased consumption of food, education, and construction.

- Similar to inpatient treatment, households with high-cost outpatient treatment in the lowest income quartile showed the greatest consumption decreases.

- No income quartile with inpatient or high-cost outpatient treatment was immune to decreases in consumption.
Health Insurance Utilization

- Poor and near-poor less likely to have insurance: greatest proportion of insured were from Other (52.0%), compared to 26.5% Poor and 21.5% Near Poor.

- Other households constitute greatest proportion of insured who use insurance (49.5%, compared to 30.7% poor and 19.8% near poor).

- Poor account for greatest proportion insured but do not use insurance (50.0%, versus 22.7% Near Poor and 27.3% Other).

- Insured experience fewer days of missed work and school due to illness than the uninsured (9.2 days Insured; 24.8 days for Uninsured for inpatient treatment).
Inpatient treatment costs by poverty level

A

![Bar chart showing inpatient treatment costs by poverty level. The categories include Direct medical facility, Direct other medical, Unofficial, Gifts, Transportation, Food, and Lost income. The poverty levels are represented by different colors: Poor (blue), Near Poor (red), and Non-Poor (green). The costs are measured in USD.]
Multivariate analysis: differences in adjusted inpatient and outpatient costs between being uninsured and insured

Adjusted effect of having insurance and using it was:

- **Inpatient Treatment Costs:**
  - All: $204 less
  - Poor: $247 less
  - Near Poor: $127 less
  - Non Poor: $205 less

- **Outpatient Treatment Costs:**
  - All: $16 less
  - Poor: $39 less
  - Near Poor: $7 less
  - Non Poor: $13 less

Note: Results control for household size, age, gender, marital status, occupation and education of household head, presence of household member under 18 years or over 65 years old.
Conclusions

■ Inadequate financial protection in health increases people's vulnerability and diminishes well-being, exacerbating inequities and raising moral concerns

■ Conventional financial protection indicators are too narrow and underestimate adverse effects of insufficient financial protection

■ Multidimensional financial protection profile can capture interrelated aspects of health expenditure

■ However, constructing a multidimensional financial protection profile has its challenges: (i) data-intensive; (ii) may require original data collection or addition of questionnaires to national household surveys; (iii) problems of recall error and bias affect retrospectively collected data

■ With the data the profile yields, researchers can further study health costs' effects by poverty or income level and type of health treatment for a fuller, more comprehensive view of health cost burdens and their distribution and better guidance for policy makers