The iHOPE-Project
Implementation Methods and Procedures

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Study Locations (3-INDEPTH sites)
Research questions

• How accurate is a household survey in reporting health expenditure as compared to a gold standard?
  – Are more questions on health expenditures more accurate than fewer questions?
  – How accurate is 4 week recall for health expenditures
  – Is enumerating individual members’ health expenditures more accurate than one question for the entire household?

• How accurate is reported symptomatic and symptomatic and diagnosis compared with a gold standard?

• How accurate is (real time) recording of health expenditures by smart phones
Research questions cont...

• Which level of disaggregation of household expenditures provides a more accurate measure of total household consumption in health surveys?

• How different are estimates on health expenditures (level and share of total) in health surveys with expenditure module compared to household consumption surveys?

• Do types of coping strategies vary with respect to type of expenditure, disease, employment, quintiles, and other variables?
Research questions cont...

- Do self-reported coping strategies predict short-medium adverse impact of health expenditure (2 years) term?

- Do the symptoms predict the use and non-use of health services? Is this sensitive to the socio-economic status of the respondent?
The Validation Process Benchmark Marks

1. General Household Survey

2. Health Surveys
The Validation in General Household Survey

General Household Survey

**Larger number of the questionnaire**

**COICOP Questionnaire**

**4 weeks - Outpatient, 1 yr patient**

**1 year for all health Exp.**

**4 weeks - Outpatient, 1 yr inpatient**

**1 year all Health Exp**

Validating accuracy of questioning approach of the health expenditure

**Asking single question at household level**

**Enumeration of household members**

**Asking single question at household level**

**Enumeration of household members**

**Asking single question for at household level**

Number of questionnaire/item validation

Recall period
Classification of Individual Consumption according to Purpose (COICOP)

Food and non-alcoholic beverages;
Alcoholic beverages, tobacco and narcotics;
Clothing and footwear;
Housing, water, electricity, gas and other fuels;
Furnishing, household equipment and routine household maintenance;

Health

Transport;
Communication;
Recreation and culture;
Education;
Restaurants and hotels, and miscellaneous goods and services

Miscellaneous goods and services

06 Health
1. 06.1 Medical Products, Appliances And Equipment
2. 06.2 Outpatient Services
3. 06.3 Hospital Services
Blocks of randomization and survey questionnaire

General Household Survey

- Larger number of the questionnaire
- COICOP Questionnaire

- Asking single question at household level
- Enumeration of household members
- Asking single question at household level
- Enumeration of household members
- Asking single question for at household level

Validating accuracy of questioning approach of the health expenditure

Outpatient Recall period

Number of questionnaire/item validation
# 8-Survey Questions Blocks of Randomization

<table>
<thead>
<tr>
<th>Block</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block-I(S4L)</td>
<td>S4L: Single question(S)-four weeks recall (4) - Longer Questionnaire (L)</td>
</tr>
<tr>
<td>Block-II (S1L)</td>
<td>Single question(S)- one-year recall(1 year) -Longer Questionnaire (L)</td>
</tr>
<tr>
<td>Block-III(En4L)</td>
<td>En4L: Enumeration (E)-four weeks recall (4) - Longer Questionnaire (L)</td>
</tr>
<tr>
<td>Block-IV (En1L)</td>
<td>En1L: Enumeration (E)- one year recall(1) - Longer Questionnaire (L)</td>
</tr>
<tr>
<td>Block-V (S4C)</td>
<td>S4C: Single question(S)-four-weeks recall- COICOP Questionnaire</td>
</tr>
<tr>
<td>Block-VI( S1C)</td>
<td>S1C: Single question(S)-four-weeks recall- COICOP Questionnaire</td>
</tr>
<tr>
<td>Block-VII(En4C)</td>
<td>En4C: En4L: Enumeration (E)-four weeks recall (4) – COICOP Questionnaire</td>
</tr>
<tr>
<td>Block-VIII(En1C)</td>
<td>En1C: Enumeration (E)- one year recall(1) – COICOP Questionnaire</td>
</tr>
</tbody>
</table>
The Validation Process of the Health Survey

Version-1 Questionnaire
- 4 weeks and 1 year
- Symptomatic

Version-2 Questionnaire
- 1 year
- Symptomatic and diagnosis

Version-3 Questionnaire
- 4 weeks
- Symptomatic

- 1 year
- Symptomatic and diagnosis

Household expenditure questionnaire validation

Estimation of health expenditure validation

Disease attribution validation

Existing data collection approaches

Using new technology (SMS, Tablets and mobile)

Validating the use of hitech for interviewing approaches
## Household consumption measures (Examples)

<table>
<thead>
<tr>
<th>Country</th>
<th>Method of data collections</th>
<th>Consumption included</th>
<th>Recall period</th>
<th>Number of items</th>
</tr>
</thead>
</table>
| Burkina Faso | Recall, quantity + total expenditure + frequency | Consumption/purchases + own production + gifts (transfers)                              | Food: last 12 months  
Non-food: variable | 106 non-food item  
29 food items  
Total: 135 |
| Ghana        | Diary for food (everything bought over last 5 days)  
Recall for non-food | Expenses = purchases + gifts + own production                                           | Non-food: past 12 months                                                      | 244 non-food items  
277 food items  
Total 521 |
| Vietnam      | Recall was used                              | Consumption, purchase, gifts, own production                                           | Non-food: Unusual  
12 months &  
Usual 30 days  
Food:  
Festive occasions: 12 months  
Regular: 30 days | Food:  
35 items during the festive period  
Non- food:  
28-items as usual  
44 terms unusual  
Total of 144 items (HE: 4 item, last 12 months) |
Approaches to create short version of household consumption

Version-I
Consumption-A- Category
  a1
  a2
  a3
  a4
  ........

Version-II
Consumption- B-Category
  b1
  b2
  b3
  b4
  b5
  ............

Version-III
Consumption -C-Category
  c1
  c2
  c3
  c4
  c5

80% of these sub-categories
80% of these sub-categories
80% of all listed sub-categories
Disease for attribution: List of 18 diseases in NHA

1. HIV
2. TB
3. Malaria
4. Respiratory infections
5. Diarrheal disease
6. Neglected disease
7. Vaccine preventable disease
8. Maternal conditions
9. Contraceptive management
10. Nutritional deficiencies
11. Neoplasms
12. Diabetes
13. Cardiovascular disease
14. Hypertension disease
15. Mental conditions (identify neurological)
16. Injuries
17. Non-communicables (chronic respiratory, digestive, ...)
18. Oral disease
# 24-blocks of randomizations of the survey questionnaire

## Example of survey blocks: a sample

<table>
<thead>
<tr>
<th>Block</th>
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</tr>
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<tbody>
<tr>
<td>Block-1 (TS1V3)</td>
<td>Hitech (T)- Symptomatic report(S)-one year(1)- and Version three(V3) 1.</td>
</tr>
<tr>
<td>Block-2 (TSD1V3)</td>
<td>Hitech (T)- Symptomatic and Diagnosis report (SD)-one year(1)- and Version three(V3)</td>
</tr>
<tr>
<td>Block-3 (TS4V3)</td>
<td>Hitech (T)- Symptomatic report(S)- four- weeks (4)- and Version three(V3)</td>
</tr>
<tr>
<td>Block-4 (TSD4V3)</td>
<td>Hitech (T)- Symptomatic and Diagnoses report(SD)- four weeks(4)- and Version three(V3)</td>
</tr>
<tr>
<td>Block-5 (TS1V2)</td>
<td>Hitech (T)- Symptomatic report(S)-one year(1)- and Version three(V2)</td>
</tr>
<tr>
<td>Block-6 (TSD1V2)</td>
<td>Hitech (T)- Symptomatic and Diagnosis report(SD)-one year(1)- and Version three(V2)</td>
</tr>
<tr>
<td>Block-7 (TS4V2)</td>
<td>Hitech (T)- Symptomatic report (S)- four- weeks (4)- and Version three(V2)</td>
</tr>
<tr>
<td>Block-8 (TSD4V2)</td>
<td>Hitech (T)- Symptomatic and Diagnoses report(SD)- four weeks(4)- and Version three(V2)</td>
</tr>
</tbody>
</table>
Sample size estimation is going on, and to get some pilot testing is required.
Data collection process to link the HH interviews and the medical records

- In-patient data
- Pharmacy in the health facility
- Private pharmacies
- Mobile drug sellers/shops
- Laboratory/X-ray Data
  - NB. This can be also out of the health facility
- Out patient Data
- Medical Records
- Linking Community data with health facility data

HH survey from the community in HDSS
Quality control

- Field manual and supervisory manual will be standardized.

- Quality control process will be different for different data administration processes.

- The data collection processes be closely supervised on a regular basis through trained supervisors and the site coordinators.

- Data editor will be assigned to check for missing and inconsistencies in the questionnaires.

- Meticulous documentations of all data collection procedure in each site.
<table>
<thead>
<tr>
<th></th>
<th>The Analysis Approaches</th>
<th>Analysis Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How different is the distribution of (OOPS) when the quintiles are defined by assets versus total household consumption?</td>
<td>Descriptive and logistic regression (based on the distribution of the OOPS), Kappa, the comparison will be the household, ROC curve analysis</td>
</tr>
<tr>
<td>2</td>
<td>Do self-reported coping strategies predict short-medium (2 years) term adverse impacts of health expenditures? (need ff-up for 2 years)</td>
<td>Descriptive and multinomial regression model</td>
</tr>
<tr>
<td>3</td>
<td>Do types of coping strategies vary with respect to type of expenditure, disease, employment, quintiles, and other variables</td>
<td>Descriptive and logistic regression (based on the distribution of the OOPS)</td>
</tr>
<tr>
<td>4</td>
<td>Are more questions on health expenditures more accurate than fewer questions?</td>
<td>Descriptive statistics, T-test, ANOVA</td>
</tr>
<tr>
<td>5</td>
<td>How accurate is 4 week recall for outpatient health expenditures and drugs compared to a one year recall?</td>
<td>Descriptive, T-test, proportion of concordance), and spearman correlation, Wilcoxon rank test,</td>
</tr>
<tr>
<td>6</td>
<td>Is enumerating individual members’ health expenditures more accurate than one question for the entire household?</td>
<td>Weighted kappa, Pearson, ICC</td>
</tr>
<tr>
<td>7</td>
<td>Which level of disaggregation of household expenditures provides a more accurate measure of total household consumption in health surveys</td>
<td>Sensitivity and specificity analysis will be done/conducted</td>
</tr>
<tr>
<td>8</td>
<td>How accurate is 4-week recall for outpatient expenditures and drugs compared to a one year recall?</td>
<td>Sensitivity and specificity analysis will be done/conducted</td>
</tr>
<tr>
<td>9</td>
<td>How accurate is self-reported diagnosis, symptomatic, and symptomatic and diagnosis compared with the gold standard?</td>
<td>Sensitivity and specificity analysis and T-test will be done</td>
</tr>
<tr>
<td>10</td>
<td>How accurate is real time recording (the provider report) of health expenditures by smart phones?</td>
<td>Sensitivity and specificity analysis and T-test will be done</td>
</tr>
</tbody>
</table>
Thank You So Much

“Out-of-pocket payments to health care providers are regressive.....”