Mobile Phone Surveys for NCD Risk Factors in Low- and Middle-Income Countries

BACKGROUND

- Non-communicable diseases (NCDs) are increasingly the leading causes of death and disability in low- and middle-income countries (LMICs).
- NCDs can be prevented by the reduction of exposure to major risk factors such as tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol.
- With increasing mobile phone access in rural and hard-to-reach areas, mobile phone surveys (MPS) can be used to improve the efficiency, timeliness and cost-effectiveness of data collection in LMICs by interviewing respondents over their own personal mobile phone.
- As part of the Bloomberg Philanthropies Data for Health Initiative (D4HI), Johns Hopkins Bloomberg School of Public Health (JHSPH) faculty are evaluating the viability of mobile phone surveys in order to gather NCD risk factor information.
- This initiative will help guide design and delivery of future MPS that can help inform public health policy and program decisions.

OBJECTIVES

The overall goal is to determine how to design and deliver effective MPS on NCD risk factors to help guide their future use in LMICs. These studies seek to:

- Evaluate the impact that providing small incentives have on a short message service (SMS) and an interactive voice response (IVR) survey’s response, completion and refusal rates.
- Compare the performance of SMS, IVR and call center NCD risk factor surveys.
- Determine key ethical, legal and societal issues with using mobile phone surveys in LMICs and provide guidance on consent approaches.
- Develop and test a system for continuous real-time mobile phone-based risk factor surveys (CoMPS).
### Disposition Code and Definitions

<table>
<thead>
<tr>
<th>Disposition Code</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Complete Interview</td>
<td>(I) Answered &gt; 5 (of 6) modules</td>
</tr>
<tr>
<td>Partial Interview</td>
<td>(P) Answered 2–4 modules</td>
</tr>
<tr>
<td>Non-Response</td>
<td>(R)</td>
</tr>
<tr>
<td>Break-off</td>
<td>&gt;18 y.o., consented, answered &lt;2 modules</td>
</tr>
<tr>
<td>Refusal</td>
<td>&gt;18 y.o., refused consent</td>
</tr>
<tr>
<td>Unknown</td>
<td>(U) Hung-up before answering age question or did not pick up phone</td>
</tr>
<tr>
<td>Ineligible</td>
<td>Participant &lt; 18 years old</td>
</tr>
</tbody>
</table>

### Survey Rate Eqautions

- **Contact Rate**: \( \frac{(I + P + R)}{(I + P + R + U)} \)
- **Response Rate**: \( \frac{(I + P)}{(I + P + R + U)} \)
- **Refusal Rate**: \( \frac{R}{(I + P + R + U)} \)
- **Cooperation Rate**: \( \frac{(I)}{(I + P + R + O)} \)
Response to Incentives and Effects by Mode

Cooperation Rates by Country and Incentive

Cooperation Rates: Absolute Difference from Control

Accrual and Cost per Completed Survey

Participant Understanding and Perception of Voluntariness

Understanding by study arm

Voluntariness by study arm

Understanding by education

Voluntariness by education
ABOUT DATA FOR HEALTH

The Data for Health Initiative (D4HI) is a Bloomberg Philanthropies-funded project that seeks to improve vital registration systems, expand current non-communicable disease (NCD) surveillance efforts, and provide data analysis training to governments in low- and middle-income countries (LMICs).

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