Who completes a longitudinal RDD-IVR-mobile phone survey in Ghana?

Response rates and sample quality for youth and young adults, pregnant couples, and caretakers of young children

Presented by Thaddeus Pennas

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Objectives

This presentation seeks to show the following:

- How can RDD and IVR be used effectively to generate a rigor representative sample?

- Realistic response rates for mobile phone surveys with different demographic subgroups in a lower-middle income country with relatively high mobile phone penetration can offer clues. This HAS NOT BEEN ATTEMPTED BEFORE (to our knowledge);

- This presentation will you in rigorous **random digit dialing** as a sampling strategy can be implemented via mobile phone; and

- Strategies for increasing response, completion, and follow-up rates using **interactive voice response** surveys.

Background and Context

- Ghana has increasing mobile phone ownership and penetration into all demographic groups and especially among younger populations. **The USAID-funded Communicate for Health Project** sought to capitalize on this dynamic for programming and evaluation purposes.

- As mobile phone access increases, mobile phone surveys increasingly approximate data obtained via face-to-face household surveys.

- Mobile phone surveys are increasingly common for M&E, but rigorous random sampling is typically not utilized in Global Health.

- Compared to IVR surveys, household level data collection is typically time-consuming and expensive. IVR surveys may reduce interviewer bias and increase access regardless of location, language, education or literacy.

Survey Methods: RDD + IVR

- Random Digit Dial (RDD)
  - Randomly generated and dialed 12-digit number including Ghana prefix
  - Phone numbers dialed in sequence
  - Once a call was picked up, the survey was initiated in IVR mode
- Interactive Voice Response (IVR) technology with pre-recorded content in English and translated into four local languages
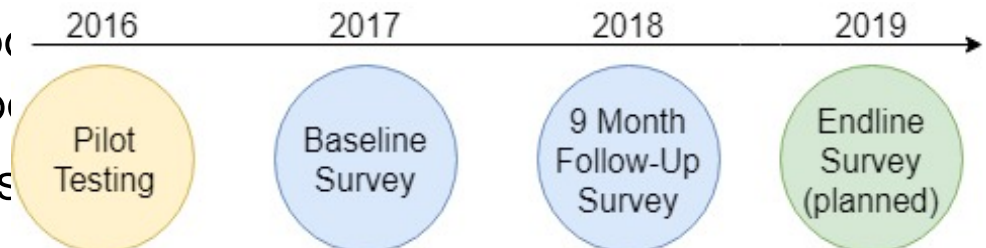 - Required key pad presses on mobile phone

Study Design

1. **Cross-sectional baseline survey across all 10 regions in Ghana: <u>National Sample</u>**

   - Methods piloted, including two rounds testing the questionnaire in 2017

   - Fielded over 27 days, in 2017

   - All respondents 18 years and above were asked a standard set of demographic, media exposure, and bed net use questions

2. **Follow-Up ~ 9 months later: <u>Demographically-focused Sample</u>**

   - Fielded over 12 days, in early 2018

   - Re-contacted baseline respondents criteria and completed full b

   - Drove sample size estimates

2016	2017	2018	2019
Pilot Testing	Baseline Survey	9 Month Follow-Up Survey	Endline Survey (planned)

Maximizing Response Rates: Survey Continuation

- Why two versions of the questionnaire? What did we learn?

  - Using the most widely spoken local language for message greeting and providing choice of survey language in a random instead of fixed order yielded a higher continuation rate

  - Shorter, straight forward introduction message yielded higher continuation

  - Shorter questions were less like to be asked to be repeated, than longer items that included response options in question wording

  - Multiple choice response format increased call continuation and data quality compared to entering a

Maximizing Response Rates: Fielding the Survey

- Calling Times
  - Calls were made between 8am-8pm; No dialing during heavy call volume times in Ghana
- Tried to keep survey short
  - National Sample respondents were asked 16-19 questions (Average time for completion =7.18 minutes)
  - Life Stage Sample respondents were asked 17-50 questions (Time for completion ranged from 15-20 minutes)
- Native speakers and female voices made recordings
- Targeted airtime incentives provided to female Life Stage respondents
- Hotline service was offered for more information about the survey, flashing used for callbacks from respondents

Sample Size

- Estimated sample size:
  - 519 completed surveys per Life Stage to detect a 10 point minimum difference from baseline to follow up
  - Increased sample size to 700 per Life Stage, to allow for estimated 25% attrition over time
- Adjusted sample size targets as data came in, based on response among each Life Stage group
- Achieved:
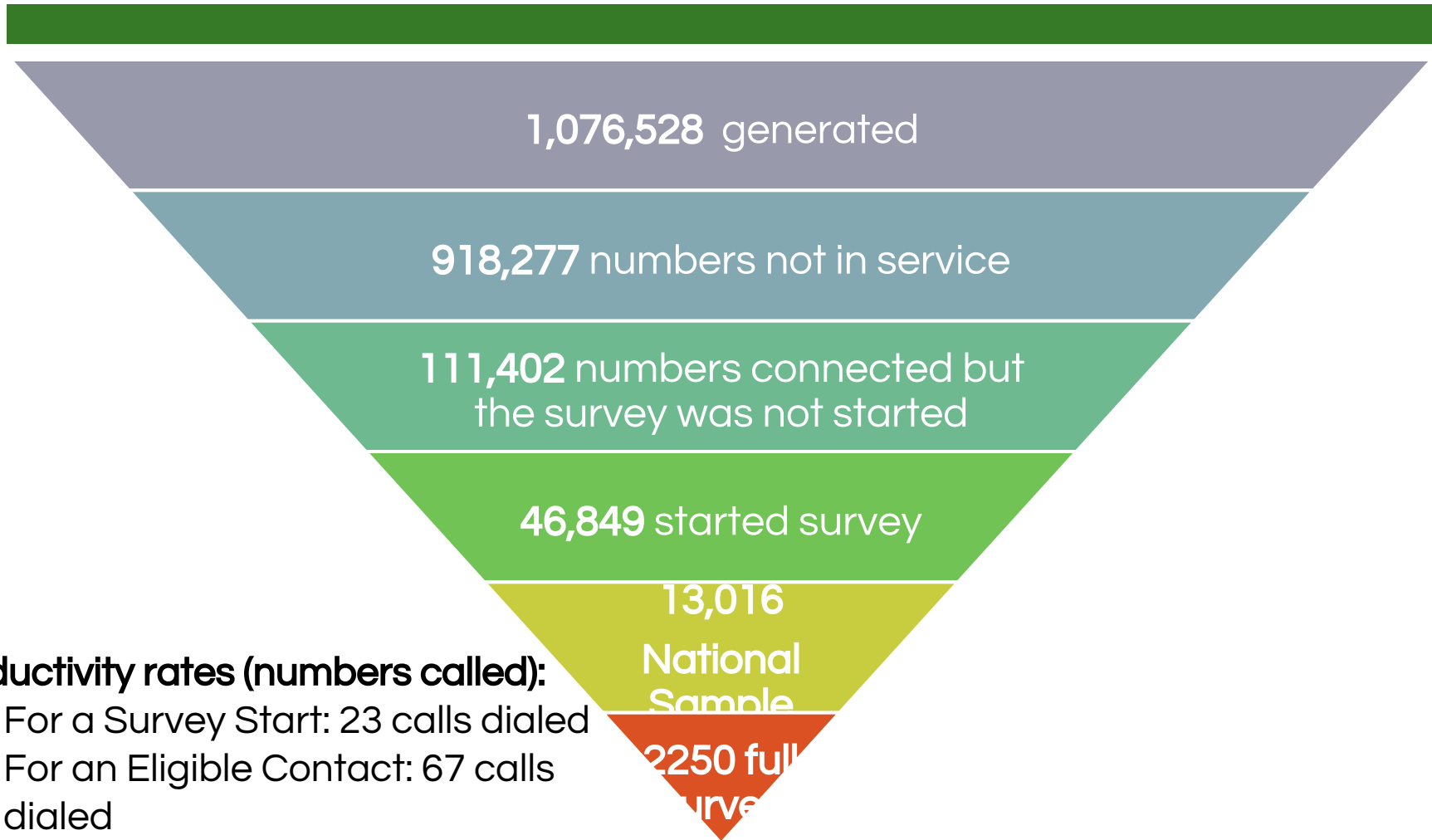 - 13,016 for the National Sample

Comparison of RDD Response Rates for Large, Geographically-Representative Surveys

Category	C4H Baseline Survey – Ghana	NSW Population Health Survey – Australia	National Youth and Health Survey – US
Response rate 4 *Completed interviews/* *Estimated eligible respondents*	31.3%	31%	24%
Cooperation rate 2/4 *Completed interviews/* *Known eligible respondents*	81.33%	46.3%	51.7%
Refusal rate 2 *Respondents who refused or terminated interview/* *Estimated eligible respondents*	7.2%	17.9%	13.4%
Contact rate 2 *An eligible respondent was reached / Total calls*	38.5%	71.7%	--

Computed using American Association of Public Opinion Research (AAPOR) guidelines

Progression and Numbers Reached

1,076,528 generated

918,277 numbers not in service

111,402 numbers connected but the survey was not started

46,849 started survey

13,016 National Sample

2250 full survey

Productivity rates (numbers called):
For a Survey Start: 23 calls dialed
For an Eligible Contact: 67 calls dialed
For a Completed Interview 83 calls dialed

National Sample Representativeness: Demographics

Demographic Group	C4H Data -unweighted (2017) (%)	Ghana National Population and Housing Census (2017 projected) (%)
Sex		
Male	**67**	48
Female	33	52
Age Group		
15-24 years	**56**	31
25-34 years	30	24
35-49 years	9	25
50+	5	20

Response Rates for Demographic at Follow-Up

Life Stage Audience	Number of Completes at Baseline (n)	Number Completes at Follow-up (n)	Percent of Baseline Respondents who Completed Follow-up (%)
Female Youth/Young Adults 18-35	700	240	**34%**
Male Youth/Young Adults 18-35	702	241	**34%**
Females with Child Under 5	209	53	25%
Males Caregivers of Child Under 5	329	82	25%
Pregnant Women	89	24	27%
Partners of Pregnant Women	221	67	30%
Total	**2250**	**707**	**31%**

WHAT DID WE LEARN ?

Key Take-Aways

- The RDD-IVR survey methodology is suitable for reaching populations with high access to mobile phones
    - Younger, more urban populations
- Alternative recruitment methods needed for hard to reach demographic groups
    - Caregivers of young children, pregnant women/couples
- Longitudinal cohort design merit more attention – but is not currently recommended
- Virtual data collection means fewer resources needed and lower cost per completed survey

Author Affiliations

- Eunice Sefa, FHI 360, USAID Communicate for Health, Accra, Ghana
- Rachel Lenzi, FHI 360, North Carolina, United States of America
- Kelly L'Engle, School of Nursing and Health Professions, University of San Francisco, San Francisco, California, United States of America
- Nii Lante Heward-Mills Viamo, Accra, Ghana

Acknowledgements

Key Take-Aways

- Methods including using the AAPOR coding attempts to introduce standards/rigor in methodology and allows comparison to other mobile surveys

- Response rates (response, cooperation, refusal, contact) are comparable and similar to a survey of similar magnitude - The New South Wales Population Health Survey in Australia

- As this is a new, innovative and uncharted territory various a/b tests and strategies have been documented that increase response rates .

[Redundant with Table on Next Slide, but Key Points] Response Rates at Follow-Up

- Overall, 31% of the baseline sample (707/2250) completed follow-up.

- Youth and young adults were two-thirds of the baseline sample and most likely to complete follow-up at 34% completion.

- Pregnant couples had the lowest participation at baseline (14%) and 29% follow-up rate.

- Caretakers represented 24% of the baseline but only 25% follow-up.