**Supplementary material for: Challenges in Measuring Supplemental Immunization Activity Coverage Among Measles Zero-Dose Children**

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**Important Elements of a Post-Campaign Coverage Survey (PCCS) Report**

* Background
  + Dates & age groups of previous SIAs and this SIA
  + Routine measles vaccination schedule including whether and when a routine second dose (MCV2) was introduced
* Ethical review
* Dates of implementation of the survey fieldwork
* Reference population(s)
  + National & sub-national, where appropriate
* What were the survey strata (sampling domains)?
* Inferential objective: estimation or classification (See WHO 2018)
  + Parameters used in sample size calculation
* Sampling
  + What was the sampling frame? How old is it?
  + What are the primary sampling units (PSUs)? How were they selected from the frame?
  + Document exclusions from the frame with reasons
  + Were maps available to show PSU boundaries?
  + Was household (HH) listing done in selected PSUs?
  + How were HHs selected within PSUs?
  + Within selected HHs, did interviewers select from among eligible respondents or interview all?
  + Target and achieved number of PSUs per stratum
  + Target and achieved number of respondents per PSU
* Who conducted the survey?
  + Outsourced (to a third party)?
  + List any external consultants
* Description of measures for quality assurance of fieldwork, including:
  + Profile of interviewers (for household listing and for interviewing, if different)
  + Training (duration, how it was done, etc) and supervision
  + Number of revisits done during household listing and to locate respondents at selected households
* Pilot testing
* What language(s) were used? If more than one, how was translation handled?
* Did the survey include questions about routine immunization (RI)? Which vaccine(s)? For all children in the survey or a specific age-group?
* Were Home Based Records sought for RI data and were these photographed to aid data cleaning (see WHO 2018)
* Did the survey ask about:
  + Receipt of a dose during the SIA by source of evidence (document/fingermark/recall)
  + Whether the child was in the SIA area at the time of the SIA?
  + Caregiver sources of campaign information?
  + Adverse events following immunization (AEFI)?
  + Reasons for not receiving the SIA dose?
* Mode of data collection:
  + Paper forms? Computer assisted personalized interviewing (CAPI)? via phone? tablet?
* Were geo-coordinates of the PSUs collected? Of each respondent’s HH?
* Response
  + Were areas excluded (during PSU selection or because of access problems during fieldwork)?
    - Population for those areas & prior estimates of coverage there
  + Demographics of listed households compared to expected
  + Response rate among selected households
* Description of data cleaning steps
* Analysis
  + Sample size (by age group)
  + Analyses appropriately weighted (see WHO 2018)?
  + List of clusters with surprisingly low SIA coverage
    - Make organ pipe plots (from WHO 2018)
    - Map the locations of those clusters
* SIA coverage outcomes
  + If goal is coverage estimation (with 95% confidence interval)
    - Point estimates by card/finger-marking/recall with confidence intervals (CIs) calculated using software that accounts for complex design (by stratum, where applicable, and aggregated to highest level e.g. national)
    - Age specific (e.g. distinguishing cohorts eligible for previous SIAs from younger cohorts)
    - Stratified by # of previous MCV doses (zero, one, at least two, or unknown) (including N for each stratum)
  + If goal is classification (nominal outcomes like high pass, low pass, fail)
    - Classification logic (see WHO 2018)
    - Results by strata and age groups
    - In addition, aggregate data across all strata to show coverage estimate stratified by # of previous MCV doses
* Limitations of the PCCS
* Make the survey dataset available or provide information on how to access it

Annexes to include in the report:

* Copy of PCCS questionnaire (including response options and skip logic)
* Details of survey weight calculation and adjustment steps
* SIA coverage design effects and intra-cluster correlation coefficients, by stratum and subgroup
* PCCS chronogram
* PCCS budget