



## A Step-by-Step Guide to Implementation

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## Introduction

MICS Plus is a new initiative of UNICEF’s Multiple Indicator Cluster Surveys (MICS) programme, to support countries in conducting phone surveys for the collection of representative data on a frequent basis, and real-time reporting.

MICS Plus is based on a tested and validated methodology developed by the World Bank and implemented as “Listening To ...” surveys in various countries. MICS Plus has been pilot-tested in Belize and has distinct methodological and logistical features, as do the recently launched “High Frequency Phone Surveys” by the World Bank. However, the basic methodology is the same.

Household surveys take considerable time and investment to design, implement, analyze and disseminate, and represent *the* golden standard for the generation of representative, high-quality data with disaggregation that is indispensable for policy making, monitoring progress and programmatic response. Phone surveys, particularly the SMS-based, participatory initiatives such as U-Report cannot generate representative survey samples, and therefore, their results cannot be generalized to the population.

MICS Plus methodology combines the power of representative, statistically robust household surveys, with the ability of reporting on a real-time basis over an extended period by using CATI (Computer Assisted Telephone Interviewing). Essentially, the mode of data collection is based on direct phone calls to respondents, as opposed to traditional face-to-face interviewing.

MICS Plus can be used for various purposes. A topic/indicator in MICS can be included in MICS Plus to create a longitudinal dataset on that topic, to monitor changes over time, including those related to seasonality. Start of MICS Plus before an emergency opens the possibility of emergency monitoring. MICS Plus can be used for opinion polling, programme monitoring and evaluation, and even question testing – all on a representative basis.

This document is intended to provide a step-by-step description of the basics of MICS Plus methodology and implementation.

## Synopsis

In its simplest form, MICS Plus can be described as follows:

- A MICS is conducted. All households are asked to provide phone numbers that may be used by the implementing agency to contact them at a later stage
- Using probabilistic selection techniques, a subsample is selected from all households that consented and provided phone numbers during MICS
- A digital data collection system is developed, for calls through a centralized, physical call center, or from a decentralized, home-based one.
- MICS Plus starts as soon as possible. Subsampled households are called at frequent intervals for short (10 to 15 minutes) phone interviews. Responses are recorded by interviewers via a data entry application on desktop computers, laptops, tablets or mobile phones
- Data that are entered are continuously uploaded to a cloud server
- After each wave of calls, data are compiled and prepared for analysis
- Data are analyzed and results are disseminated before the completion of the next wave of calls.

Calls are made to households on a monthly or more frequent basis, typically for a duration of 12 months. Periodicity of calls can be increased or decreased, for instance to every two weeks. The duration of MICS Plus can be extended or shortened.

Compared to traditional phone surveys, MICS Plus introduces the following advantages:

- Ability to use the rich data from MICS as the baseline, and to progressively build a longitudinal database
- Use of a sample frame (the MICS households) that is well-defined and known to be representative of the general population
- Ability to assess the representativeness (or possible biases) of the sample, based on analysis of characteristics of the participating and non-participating households, from the MICS data

MICS Plus has the following features that are not applicable to MICS:

- Produce results on a real-time basis
- Follow indicators over time, both for tracking changes and controlling for seasonality
- Collect data at low cost
- Ask questions on topics not covered in MICS

# 1

## Conduct a MICS, collect phone numbers

A regular MICS is completed, during which (multiple) phone numbers are collected from households, and consent is sought for “returning” at a later stage. Households that provide consent and phone numbers form the sample frame of MICS Plus.

One variant of collecting phone numbers during the fieldwork of MICS is to collect phone numbers during the listing operation (updating of the sample frame, usually the list of enumeration areas). While this can be used to create a larger sample frame for possible use, the link between MICS results and MICS Plus is lost, since most households listed for MICS will not have been interviewed.

In cases when phone numbers were not collected during the MICS, a possible approach to “constructing” a MICS sample frame with phone numbers is to obtain phone numbers from other sources (such as telecommunication companies or the National Statistics Offices’ own records) and match these phone numbers with each of the households interviewed during MICS. This is a complicated process for various practical, ethical and legal reasons, and risks the creation of an imperfect sample frame for MICS Plus, as matching of the two databases may not be achieved at a satisfactory level.

Any household survey with phone numbers or any database of households with phone numbers (such as population registers) can be used as a sample frame for MICS Plus. While this is perfectly possible, in such cases, the linkage to the contents of a MICS survey will be lost, and the cross-analysis of MICS results with data collected during MICS Plus will not be possible.

For the rest of this document, a regular MICS with phone numbers is assumed to form the sample frame of MICS Plus.

## Select the MICS Plus sample(s)

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By using probabilistic sample selection techniques, a subsample of households is selected and forms the MICS Plus sample.

Sample selection probabilities, response codes and sample weights from MICS should be available, in detailed form. High response and completion rates in MICS improve the quality and representativeness of MICS Plus. If consent for MICS Plus or phone coverage is low in the country, MICS Plus will not yield representative results. In such cases, options such as conducting MICS Plus only in urban areas or in certain regions of a country can be considered as alternatives.

Multiple sub-samples may be selected from MICS, to run concurrent MICS Plus surveys, though the standard, simplest and most straightforward design is to use only one sub-sample

Design of the MICS Plus sample is largely conditioned by the design of the MICS. However, some modifications, design changes and different allocation approaches may be possible, such as “removing” oversampling in MICS and introducing oversampling in MICS Plus. Stratification and clusters in MICS remain largely the same, although combining strata is possible.

Replacement households, if desired, should be selected at this stage. This is to compensate for attrition during MICS Plus, as discussed later.

The MICS Plus sample is representative of MICS households with phone numbers that have consented to be contacted later, ideally for MICS Plus calls. MICS Plus will work best in settings where telephone (landline or mobile) use is almost universal. Households without phone numbers are of concern in terms of the representativeness of MICS Plus of the population. However, the bias introduced by the exclusion of such households, as well as by those who have not consented, can be “estimated” by using the characteristics of the MICS households.

### **Decide on indicators and design questionnaire(s).**

The content of MICS Plus should be decided well in advance based on the objectives. MICS Plus is flexible in covering topics already in MICS, to construct MICS indicators on a longitudinal basis and capture seasonality, as well as those which are not in MICS.

If MICS Plus is conducted immediately after the regular MICS, then savings will be made from collecting background information from households (such as assets used to construct the wealth index or list of household members) through simple validation of information available from MICS.

It is important to have an indicator and questionnaire plan for all waves of calls – in particular, for the first several waves. The plan should outline which indicators will be collected and in which months. However, MICS Plus is flexible in making changes over time, and consequently, the timetable of indicators can be changed as progress is made with successive waves.

MICS Plus questionnaires can be designed to collect the same information in all waves during the course of MICS Plus; cross-sectional data may be collected in only one or two waves, or topics/questions can be alternated in successive waves, if information on some indicators does not need to be collected at frequent intervals.

Salt testing, anthropometric measurements, foundational learning skills tests cannot be included in MICS Plus, as these depend on objective measurements and direct observations during face-to-face interviews. Highly personal questions such as those related to sexual behavior and experiences of intimate partner violence should be avoided. Questions need to be simple and clear; in the absence of face-to-face interaction and the limitations in the establishment of good rapport with the respondent, probing will be very limited. The total duration of a call should typically not exceed 10 to 15 minutes – although this needs to be tested before MICS Plus begins.

Highest response rates and lowest attrition are obtained by targeting only one proxy respondent per household, typically any knowledgeable adult household member, who will respond to questions on behalf of/about all household members. Targeting individuals with specific characteristics within households (for example, mothers of under-5s) has been tested by the MICS programme and evidence suggests that success in reaching the same individual over a long period is very challenging.

Regular MICS surveys use multiple questionnaires. In MICS Plus, it is recommended that only one questionnaire is used, for reasons of simplicity and flexibility to be able to report on a real-time basis. Using multiple questionnaires will typically require contacting the same individuals, and/or complicate sample weight calculations, which will inevitably delay the reporting and dissemination of results.

## Human Resources and Training

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At country level, a survey manager, a supervisor, a cadre of interviewers, a MICS Plus Data Processing Team and a sampling expert are required, at a minimum.

The survey manager has the overall responsibility of the management of MICS Plus, as the senior team member responsible for its successful implementation. Coordination and communication with the Global MICS team, other units of the implementing agency and other sectors in the country are among the responsibilities of the survey manager. Intimate knowledge of the survey manager of MICS is an asset.

The supervisor manages the Supervisor's System (see below) and supervises all interviewers, providing training and feedback to the interviewers as needed. The supervisor should be competent in the management of teams and familiar with MICS and/or similar household surveys.

The number of interviewers who place the calls is dependent on the size of the sample (the total number of calls to be made during a wave), the frequency of waves, and the length of the questionnaires. As with regular MICS, MICS Plus managers should ensure that pressure should not be put on interviewers to complete too many calls per day, as this will have adverse effects on data quality. Good supervision of interviewers is required to ensure efficiency and good quality.

Interviewers should preferably be selected from among those individuals who worked as interviewers during the MICS. If MICS Plus calls will be made in multiple languages, interviewers with the corresponding language skills should be selected.

The MICS Plus Data Processing Team in the implementing agency is established to ensure the seamless flow of all data processing activities such as the central office management, continuous update of the digital questionnaire application for each wave, remote training, remote trouble shooting, creating progress and data quality reports, exporting data and creating analysis files and final results.

The sampling expert of the implementing agency should be familiar with the sample frame (the regular MICS), the MICS sample design and the MICS Plus methodology, and is expected to work closely with the sampling expert of the global MICS team.

As part of the technical collaboration framework, the UNICEF MICS Data Processing team provides the standard MICS Plus data collection application, guidance on the application use, maintenance and updating, example training material related to setting up call centers, use of equipment and applications, templates for sample management, household assignments, templates and applications for automatic calculation of sample weights and the draft model of SPSS analysis programs. Furthermore, technical collaboration would entail continuous technical support in critical phases of the project, such as the start and finalization of each wave, as well as remote support during main (initial) training and remote trouble shooting related to any possible issue that may arise.

The Global MICS Programme assigns a MICS Plus focal point from the Global MICS Team and a sampling expert from the beginning to the end of the MICS Plus process.

Training is provided to the supervisor and interviewers by the Survey Manager, with support from Global MICS Team members. If remote training is used, this can be carried out by using online applications such as Skype or Zoom. Training includes the management of the data collection tools, such as the use of the data collection application, and on the contents of MICS Plus, and can be completed in 2-3 days, before the first wave. For subsequent waves, training is still needed especially if there are any changes in the questionnaires and can take one day or less, depending on the extent of changes.

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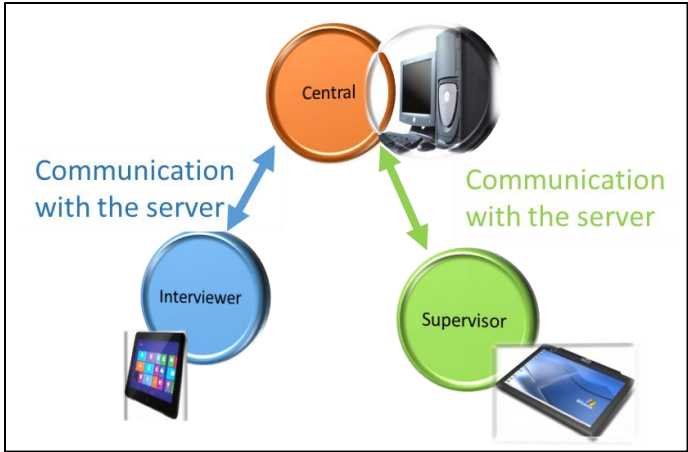
## Set up the MICS Plus Digital Data Collection System

Three sub-systems are set up as the main components of the MICS Plus Digital Data Collection System: The Central Office System, the Supervisor’s System, and the Interviewers’ System.

The MICS Plus Digital Data Collection System relies on conducting remote voice interviews (calls) placed from any location with phone coverage and/or internet availability.

While talking with the respondent, interviewers simultaneously record respondents’ answers into electronic format. This process is facilitated through the MICS Plus data collection application, developed in CSPro.

The system is composed of 3 sub-systems: The **Central Office System** for centralized data processing, the **Supervisor’s System** for monitoring and controlling data collection activities, and the **Interviewers’ System** for facilitating the data collection process. Detailed tasks of each of the 3 sub-systems is provided in Annex I.



A **cloud-based server** needs to be set up. MICS Plus recommends that IFSS (Internet File Streaming System) is used, hosted on the UNICEF Azure server.

The system has both capabilities of working online and offline and allows utilization of multiple languages. However, at a minimum, periodic internet access is needed, in order to ensure communication with the central server.

**Hardware requirements** include the following: A desktop or laptop computer running on a Windows platform, for the Central Office System; desktop or laptop computers (Windows) or Windows or Android tablets for Supervisors and interviewers; cell phones with accompanied headsets for each interviewer, if calls will be made by telephones. More details on hardware and software requirements is provided in Annex II.

**Calls** can be made via a physical call center, where the supervisor and interviewers will be working on a daily basis. Alternatively, calls can be made from separate locations by interviewers (for example, from homes).



Calls can be made via phones or computers/tablets (by using Skype, Zoom and similar applications), depending on the availability of internet.

Interviewers record responses via manual entry on their computers/laptops, or tablets.

The Interviewers' System automatically assigns calls to each interviewer daily and automatically decides, for instance, to assign a new substitute household to an interviewer.

Completed and in-progress interviews are uploaded to the cloud server by the Interviewers' System, whenever internet connectivity is present. In case of intermittent internet connectivity, the Interviewers' System has the functionality to trigger the upload of data collected off-line to the central server.

**The Supervisor's System** can access daily household assignments for each interviewer, as well as completed and in-progress interviews from the central server, via internet connectivity. The supervisor can view completed and in-progress interviews and provide guidance to the interviewers. Daily progress reports are produced by the Supervisor's System.

The **Central Office System** creates monitoring reports on a continuous basis. These include daily progress reports and data quality tables. At the end of each wave of calls, the system exports data to SPSS, Stata or another software that is used for data analysis. With an automated process, sample weights are appended to the data sets.

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### Testing, Piloting and Calls

Before calls begin, every effort should be made to ensure that all systems are functional and MICS Plus interviewers gain experience and fluency in making calls and using the various aspects of the digital data collection system.

The MICS Plus Digital Data Collection System should be rigorously tested to ensure that all component sub-systems are functional. Every effort should also be made to pilot-test the questionnaires, and train interviewers in initiating the calls, interviewing respondents and recording the responses.

For this purpose, a small set of households from the MICS could be selected. These households should be those that are not selected for the main MICS Plus sample(s). The CSPro application has functionality to record interviewers, which can be used to assess their performance.

If calls are being made from a physical call center by using phones, the supervisor is able to “observe” the interview, but his/her participation in the call will not be possible. However, if online applications such as Skype or Zoom are used, supervisors will be able to participate and listen to both to respondent and interviewers, provided that consent is obtained from the respondent.

In cases when calls will be made from separate locations, recordings of interviewers through the CSPro application will be possible. Supervisors will only be able to participate in calls if online applications are used.

Observations by supervisors is very important during the piloting stage but should continue after the calls to the main sample of households begin. The supervisor is responsible for providing feedback to the interviewers and ensuring the quality of calls and data collected throughout the MICS Plus survey process.

The MICS Plus Digital Data Collection system automatically assigns calls to each interviewer daily, based on designed protocols and information collected by interviewers during incomplete calls, such as appointments for re-calls obtained from respondents.

Making calls and asking the same questions can be a very repetitive process. Interviewers should be able to build rapport with the respondents as much as possible, introducing themselves with as friendly a voice as possible, asking for consent, and administering questions in a non-mechanical manner.

MICS Plus can be designed to collect data over any period of choice, but preferably not shorter than 6 months to ensure that a longitudinal dataset with sufficient content to track changes can be obtained. MICS Plus should not be continued for a period longer than 2 years, since the representativeness of MICS Plus will diminish with time, as the population from which the initial MICS sample was selected will be changing and will not be covered by the MICS Plus sample.

Typically, MICS Plus waves will be on a monthly basis. However, it is possible to increase the periodicity of waves, for instance, to be able to detect rapid changes. This should nevertheless be carefully considered before implementation, as too frequent calls may result in increases in attrition. Any changes in the frequency of calls should be agreed with respondents before the change is put in place, since the respondents will have agreed to receive calls at a frequency indicated at the first call.

Attrition is a concern in longitudinal data collection and can quickly deplete the sample, resulting in bias and loss of analytical power. MICS Plus incorporates replacement protocols, whereby households that are not contactable for 3 days during a wave, with 5 attempts on each day, are replaced with a substitute household pre-selected at the sampling stage. Substitute households are selected from the same clusters as the selected households, to ensure that households with

entirely different characteristics do not enter MICS Plus. Interviewers are assigned replacement households automatically by the Digital Data Collection system.

The very first call to each household is of critical importance. It is during this call that households agree to participate and should therefore be provided with a clear explanation of the objectives of MICS Plus, the frequency with which they will be called, the expected duration of the calls, and the confidentiality and anonymity of the interviews.

This applies to households who previously provided consent during the MICS to be called at a later date, by providing their phone numbers. If consent to “return” at a later stage was not sought during the MICS but phone numbers were collected, consent will need to be sought from households at the beginning of the very first call during the first wave of MICS Plus calls.

Consent should be asked of respondents at the beginning of each call, although this will be shorter, mostly in the form of re-confirmation, especially in the case of respondents who have been interviewed in previous waves.

## Data analysis

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The data analysis phase starts immediately after the completion of the wave and is carried out concurrently with the implementation of the next wave. The goal is to produce analysis data files and the MICS Plus result tables on an automated and almost real-time basis.

To prepare for data analysis, the Central Office System merges all data files created by all interviewers and exports the data to SPSS or the software of choice for analysis. Recoding of variables is performed through a collaboration between the survey manager, the supervisor, the data processing expert and the MICS Plus focal point from the UNICEF MICS Plus team. The system automatically calculates sample weights and appends to the data files. Recoded variables that are needed for analysis are also appended to the data sets at this stage.

Prior to each wave, programming (in SPSS or other software) should be prepared and reviewed using partial data. At the end of the wave, programs are run by the data processing expert to obtain the tabulations pertaining to the wave. Tabulations include the substantive findings of the wave and data quality tables, as well as metadata on the wave, such as call durations, response rates, number of call attempts, indicators on interviewer performance and the like.

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## Reporting and Dissemination

Reporting and dissemination of MICS Plus results should be carried out on a real-time basis. Delays in reporting with highly will diminish the value of data collected.

Reporting and dissemination of the results are carried out using Tableau, a free software that can be used to visually display results with appropriate mechanisms for showing disaggregates, typical in MICS tables.

Tableau can display micro-data and apply sample weights. Hence, creating tables in SPSS is not required. For this, the data processing team should create a data file with 1) outcome variables, 2) disaggregate variables and 3) sample weights. This file can be in SPSS or Excel, based on the preference on the dashboard designer.

Based on the schedule of indicators, a dashboard can be prepared and progressively populated over time. Design of the dashboard should be simple, intuitive and easily adjustable over the different waves of MICS Plus. Major indicators would always be included, including the wave variable (which indicates when data were collected) and suitable disaggregates. Disaggregates that produce figures based on less than 50 unweighted cases should be avoided.

If Tableau is not available at the implementing agency, a consultant may be hired for this purpose to work on a long-term, part-time basis during MICS Plus. Tableau dashboards can be easily embedded into websites such as those of the implementing agency or the global MICS programme. A press release with key findings should accompany the release of new results through the dashboard.

# A1

## Annex I - Tasks of the Digital Data Collection Sub-systems

### The Central Office System

- Create daily household assignments, by assigning specific households in the sample to each interviewer, and automatically upload assignments to the central server via internet connectivity
- Remove/correct household assignments
- Update the sample
- Download completed and in-progress interviews from the central server via internet connectivity
- Create monitoring reports, such as progress reports and data quality tables
- Export collected data to SPSS, Stata or other software used for data analysis
- After each wave, export final datasets to SPSS, Stata or other software used for data analysis
- Append sample weights to datasets

### The Supervisor's System

- Access daily household assignments for each interviewer from the central server via internet connectivity
- Access completed and in-progress interviews from the central server via internet connectivity
- View completed and in-progress interviews and provide guidance to the interviewers
- Create daily progress reports

### The Interviewers' System

- For each interviewer, access daily household assignments
- Automatically place internet calls via the application on the device (including Skype, Zoom) depending on the availability of the internet in the interviewer's home and the platform used to place the calls (phones versus computers or tablets)
- Data capture via manual entry on the computer or tablet
- Create alerts related to downloading available updates
- Automatically allocate household's management, such as possibility to automatically access substitute household upon 3 unsuccessful call attempts
- Automatically upload completed and in-progress interviews, in cases when continuous internet connectivity is enabled
- Functionality to trigger upload of off-line collected and in-progress data to the central server once internet connectivity is established, in cases when intermittent internet connectivity is expected

# A2

## Annex II - Hardware and Software Requirements

### Hardware Requirements

- For the Central Office System, a desktop or laptop computer, running on the Microsoft Windows operating system.
- For supervisors and interviewers, desktop or laptop computers, running on the Microsoft Windows operating system, or Windows or Android tablets if calls are placed from phones.
- Separate tablet/computer needs need to be determined and assigned to each supervisor and interviewer, and an additional 20 percent of equipment should be available in case replacements may be required.
- Cell phones with accompanying headsets should be provided to each interviewer, if calls will be made via telephones,.
- A cloud-based server, with the option of using IFSS (Internet File Streaming System) hosted on the UNICEF HQ Azure server, with the following characteristics:
  - Automated client application
  - Control center client application
  - Dedicated web service

### Software Requirements

- CSPro version 7.3
- SPSS version 18 or higher
- Skype, Skype for Business, Google Hangouts, WhatsApp, or Zoom for remote training and placing internet calls in case phones are not used
- Tableau
- Microsoft Office