



– A Technical Brief for Breakthrough ACTION Field Teams –

USING SMS- AND IVR-BASED SURVEYS DURING COVID-19

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This technical brief is intended to serve as guidance for systematically administering Short Message Service (SMS) and Interactive Voice Response (IVR)-based surveys to collect data¹ from a stratified sample of participants. The brief includes a number of reference documents and resource people to contact for additional information.

This document is not intended to guide push or blast messaging, or opt-in texting to a short code. It is important to distinguish between SMS and IVR efforts that push or disseminate information or educational messages or collect data from opt-in self-selecting samples.

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Why use an SMS- or IVR-based survey?

In the midst of the COVID-19 pandemic it is unsafe (and may be unlawful) to send data collectors into communities to collect information face-to-face from potential respondents. Alternative means of data collection must be employed. SMS- and IVR-based surveys provide a way to remotely collect survey data without endangering enumerators and respondents.

The very limited time available in emergency contexts calls for data that can provide rapid insights into behavior determinants when more formal formative research is not feasible. Among other things, it is critical to understand the public's level of trust in various information sources, level of confidence in their ability to protect themselves, and level of fear of infection. Such information enables swift development and refinement of communication messages and materials addressing these issues in order to contain the infection and/or prevent its spread. SMS- and IVR-based surveys can also be used to track and manage a response to rumors and misinformation (see "[Creating a Real-time Rumor Management System during COVID-19: Technical Brief](#)").

Consider

When literacy is an issue, live voice calls using [computer-assisted telephone interviewing \(CATI\)](#) can be an option. Trained telephone operators interview respondents by phone.

What are SMS- and IVR-based surveys?¹

SMS- and IVR-based surveys are remotely administered mobile surveys for rapidly collecting concise data from general and specific segments of the population (e.g., women, youth, etc.) This method of remote data collection works best when a substantial proportion of the intended population owns or has access to a mobile phone. Inherent in SMS- and IVR-based surveys is the limitation posed by access to mobile phones².

SMS- and IVR-based surveys are not a substitute for probability-based population surveys because:

1. They are limited to people with access to phones and the sample of potential respondents is drawn from phone registration records, which are **not representative of the general population**.

2. Those who receive the message may decline to participate, thus creating an additional bias in the sample.
3. The remote administration of the survey makes it difficult to verify the demographics of the participant or that the person responding is, in fact, the intended person to be reached.

However, for emergency situations like COVID-19, SMS- and IVR-based surveys provide a means to collect data rapidly and remotely from a stratified sample of the public. For gender and other ethical considerations related to surveys using cell phones, see [Phone surveys in developing countries need an abundance of caution](#) by the International Initiative for Impact Evaluation.

¹ The content in this guidance document draws heavily from the [SMS-based Surveys Technical Note](#) that is part of the Program Understanding and Learning Suite resources. The complete Technical Note contains an example and additional references.

² For gender and other ethical considerations related to surveys using cell phones, see [Phone surveys in developing countries need an abundance of caution](#) by the International Initiative for Impact Evaluation.

How can SMS- and IVR-based surveys help with the COVID-19 response?

Remote mobile data collection offers a way to rapidly collect key data to support decision-making, which is especially needed during a pandemic. SMS- or IVR-based data collection can reach respondents in near real time and provide results from a stratified sample that aligns with national demographics within days. Furthermore, regular data collection, such as multiple rounds of surveys, offers a means by which to reassess the situation on the ground; identify progress on key determinants, or lack thereof; and potentially explore how the communication efforts impacted behaviors over time.

Consider

As with any instance of data collection, ethical issues must be considered and approval from a review board will need to be obtained.

When, how, and why use SMS- or IVR-based surveys?

Before proposing an SMS- or IVR-based survey, consider the types of data you need. SMS and IVR methods can collect both quantitative and qualitative data, but given their limited space for questions they are best used for quantitative data collection. Think about the population from whom you want to collect data. You can solicit information from the general public with a sample that aligns with national demographic statistics, or you can decide to only gather responses from certain populations (e.g., men, women, young people, one province or district). Think also about the level of literacy of the population you want to reach. If literacy is low, you will do better using the IVR modality.

Given their remote attribute, SMS- or IVR-based surveys can be used very expeditiously for 1) gathering community insights and information gathering about behaviors; or 2) monitoring exposure to the program and changes in expected behaviors over time. Some considerations for their use include: (overleaf)

Case Study

See a description of SMS surveys implemented in Liberia during the Ebola epidemic: [Use of SMS-based surveys in the rapid response to the Ebola outbreak in Liberia. Opening community dialogue](#)

When, how, and why use SMS- or IVR-based surveys?

(Continued)

1) For gathering community insights and information about behaviors of interest

Consider which factors (determinants) need to be explored about the intended behaviors. In other words, what does the program need to know to develop a focused social or behavior change intervention? During the 2014 Ebola epidemic several SMS-based surveys were used. One of them collected data from 1,000 respondents on various behavioral determinants, in just three days. A second survey collected data on a similar sample about trusted sources of information, and a third one gathered people's opinions on creating a memorial for those that died due to the Ebola virus disease. In the case of COVID-19, questions could be focused on knowledge people have about prevention measures (all of them), whether people have access to resources such as water and soap, as well as their sense of self-efficacy to act on such recommended behaviors. Information on this and other determinants of behaviors can help programs decide whether they need to develop advocacy activities, create partnerships to address lack of resources, increase people's sense of efficacy, or identify ways to practice such behaviors given the limitations in each context. For example, if lack of water is identified as a major constraint, social and behavior change programs may need to work with organizations that can supply soap so promotion of handwashing becomes a realistic option.

2) For program monitoring

Several rounds of data collection using SMS- and IVR-based surveys can be used to gather ongoing information about the program's progress. For example, a first round of data can be used to explore whether messages are reaching the intended population, and the reactions people may have to such messages. Additional rounds of data can continue to explore the increased reach of the program, as well as the extent to which the population is practicing the expected preventive COVID-19 behaviors and the limitations for doing so, such as attitudes (e.g., COVID-19 is not real). Rapid availability of these data will allow programs to adjust their messages, or to focus them toward population groups that may need them most.

Mobile-based group discussions: In addition to SMS- and IVR-based surveys, mobile-based [Market Research Online Communities](#) are now an option to conduct group discussions without the need for participants to be present in the same place. Using mobile phones, this type of group discussion can be organized to gain additional insights into behavior determinants and other contextual factors, and to obtain feedback about program messages similar to pretesting.

Requirements for implementing SMS- or IVR-based surveys



Data Collection Firm

The team will need to contract with a firm that has access to mobile numbers. There are some firms that have ongoing agreements with phone companies, allowing easy access to phone users. Firms without such agreements will need to buy a random set of numbers from the phone company or do random digit dialing in order to develop the survey sample. For SMS, data collection is usually completed within 3–4 days (for 1,000 respondents) but may take a week depending on the sample size. For IVR, data collection may take 1–3 weeks. The database is usually ready within 2–3 days after the number of desired interviews is reached.

An increasing number of companies offer SMS- and IVR-based surveys, but a key consideration must be the methodology they use and the firm’s understanding of what rigor and accuracy represents in data collection. GeoPoll offers SMS, IVR, and CATI services in multiple countries in Africa and Southeast Asia, while Gallup is a provider of these types of surveys in Latin American countries. Other companies such as Viamo offer IVR solutions.

Consider

Crafting the questions requires a unique skillset. If using SMS as opposed to IVR, you must limit questions to 160 characters or fewer. Questions with pre-coded answer choices are best to eliminate time needed to respond and to analyze. However, response options need to allow for most potential answers.



The Team

Program and monitoring staff should develop the questions to ensure that key questions required for message and activity development are asked. Since the length of the questionnaire is generally limited to 10–12 questions, some decisions may need to be made about which questions to ask first. Preferably, the same monitoring staff that develop the questions should be involved in the data analysis in order to expedite program staff’s access to results. The data collection firm can provide the data in a .csv or Microsoft Excel file, which can be used for the analysis, or the data can be imported into statistical software such as STATA or SPSS for analysis. If the local team does not have the capacity to conduct data analysis, they can ask the data collection firm to deliver results in a specified format or display them in a dashboard.

The monitoring staff should also be available to liaise with the data collection firm to ensure provision of a proper sample. SMS and IVR platforms also have the capability to track data such as the number of messages sent, delivered, opened, completed (partially or fully), and undelivered, which can be used as part of the survey report.

Requirements for implementing SMS- or IVR-based surveys (Continued)



The Questionnaire

Developing the SMS or IVR questionnaire can be challenging and warrants special considerations:

- Each question with its response options has a 160-character limit for SMS or a reasonable time limit for IVR.
- Need to include sociodemographic questions about the respondent in order to screen survey eligibility, as phone records do not provide this information.
- Questions should be simply phrased and easy to understand.
- Dichotomous questions (e.g., yes/no; true/false; agree/disagree) work best.
- Avoid skip patterns as they can be a challenge to manage.
- Fewer response options of about 4–5 choices, to limit scrolling, are easier for small-screen phones.
- If open-ended questions are needed, they must be designed to solicit very short answer phrases.
- Limit the use of space-saving abbreviations, unless they are universally understood.

Crafting the questions

Crafting questions for this type of survey is an important and challenging step. It can be difficult to adapt questionnaires to fit an SMS or IVR format. Ideally, surveys should be 10–12 questions in length. Ensure you have pre-coded answer choices included in the question. For example, a questionnaire could ask the following:

1. Is COVID-19 contagious? Reply 1 for very contagious, 2 for somewhat contagious, 3 for not contagious.
2. How is COVID-19 spread? Reply 1 for touching, 2 for saliva, 3 for mosquitoes, 4 for coughing.

This example uses two questions when you could combine them and only use one question out of the recommended 10–12 question survey:

1. How is COVID-19 spread? Reply 1 for touching, 2 for saliva, 3 for mosquitoes, 4 for coughing, 5 for cannot be spread.

This is an example of the ways in which questions can be carefully crafted to extract the most information possible with a limited amount of questions. While you can use SMS-based surveys to collect qualitative data, this method works better for quantitative data collection given the limited space for questions and answers.

Advantages and disadvantages

As with any data collection method, there are strengths and limitations to consider in using SMS- or IVR-based surveys as opposed to traditional face-to-face surveys. During a pandemic, when fielding face-to-face surveys is not an option, mobile surveys can offer the best alternative for gathering data. However, it is important to understand what mobile surveys can and cannot offer before using them. Below is a brief summary of the main pros and cons of remote and mobile data collection.

SMS vs. IVR

SMS- and IVR-based surveys share many of the same strengths and limitations, as mentioned above. There are differences, however—namely cost and timeline. SMS is significantly less expensive and produces faster results. IVR tends to be more accessible for low-literate populations, as indicated above.

	SMS	IVR	
Pros	Reach	Can be used with hard-to-reach populations Scale is limited only by the size of mobile network operators	
	Timeliness	Near real-time results Feedback to programs within days of receiving results	Few days lag for receiving results. Feedback to programs within a week or two of receiving results
	Sampling	Allows for sampling of population groups of interest to the program (e.g., women, men, adults, youth) for more focused program design and monitoring	
	Anonymity	Anonymous responses can help accuracy of data provided	
	End user cost	Always free to the end user (respondent) with an option to send top-up credit	
	Cost	Inexpensive compared to other types of surveys	2–3 times more expensive than using SMS but still relatively inexpensive
	Literacy	Participant literacy required to be able to read questions	A better option for low-literate/illiterate populations
Cons	Reach	Only reaches those with access to mobile phones (skewed slightly towards male and young)	
	Number of questions	Limited number of questions/responses (recommend surveys with 10–12 questions)	
	Accuracy	Cannot guarantee respondents are who they say they are	
	Question length	Each question limited to 160 characters	Each question limited to 10–20 seconds
	Privacy concerns	People with low literacy may need assistance to read and answer the questions	More likely that an individual can complete the survey on his/her own

Timelines and cost

Both SMS- and IVR-based surveys are relatively inexpensive compared to face-to-face household surveys, with SMS being the less expensive of the two to reach a large number of respondents in near real time. However, costs may vary depending on the provider and their structure. Some providers have direct access to cell numbers while others need to pay for such access. Given widespread cell phone access in many countries, it is also a convenient way to gather rapid information from a sample that, while not representative in statistical terms, can reflect the main demographics of the population of interest. Total cost increases with increasing sample size and number of questions. But cost per respondent is lower after the first round if doing more than one round of data collection. For example, a ten-question SMS-based survey with 1,000 completed responses and four rounds of data collection (monthly perhaps), for a total of 4,000 respondents, can cost approximately \$17,000–\$18,000 (depending on country). IVR is significantly more expensive, at approximately \$40,000–\$55,000 (depending on country) for the same sample size and rounds, but has the potential to reach individuals where literacy is an issue. GeoPoll offers SMS, IVR, and CATI solutions. Viamo offers IVR (at a slightly higher price). Methodology differs between companies, so it is important to speak with researchers to discuss best options and to get detailed quotes from the different companies.

Estimate 2–5 weeks from the start to conducting of preliminary analysis. This includes headquarters and local institutional review board approvals, three days for survey development, two days for pretesting, 1–2 weeks for survey implementation and data collection, and three days for preliminary data analysis.

CCP resources

- [Amanda Berman](#)
- [Kuur Kumoji](#)
- [Maria Elena Figueroa](#)

Online resources

- [COVID-19 Communication Network](#) (Breakthrough ACTION)
- [Send surveys through SMS](#) (GeoPoll)
- [Administer surveys through live voice calls](#) (GeoPoll)
- [Mobile Surveys](#) (Viamo)
- [Market Research Online Communities In Africa](#) (GeoPoll)
- [Use of SMS-Based Surveys in the Rapid Response to the Ebola Outbreak in Liberia: Opening Community Dialogue](#) (CCP)
- [Use of short message service for monitoring Zika-related behaviors in four Latin American countries: lessons learned from the field](#) (CCP)
- [Zika Prevention Knowledge and Behaviors in Dominican Republic, El Salvador, Guatemala and Honduras](#) (CCP)
- [Monitoring Outcomes for Zika Prevention Knowledge and Behaviors in Dominican Republic, El Salvador, Guatemala and Honduras SMS Monitoring Survey: Final Report](#) (CCP)

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