DATA COLLECTION METHODS TO USE DURING THE COVID-19 PANDEMIC AND BEYOND

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INTRODUCTION

Traditionally, most research and training carried out involves face-to-face interaction with respondents, data collectors, and investigators. However, in an era of social distancing, it is challenging to continue to collect data in the 'traditional ways'. Given the risk of infection, coupled with the contexts in which data collection activities are carried out, we have to adapt the way in which we operate.

It is clear that there is a need to utilize alternative and innovative ways of conducting field work to replace traditional methods for community engagement, training of research assistants, consenting processes, obtaining the sampling frame, data collection, and dissemination of research findings to key stakeholders.

1.1 OBJECTIVE

Our objective is to propose best-practice models and options that research teams can make use of to effectively implement projects at APHRC to prevent the spread of COVID-19 and protect all participants in the research process during the course of this pandemic and other disruptive conditions.

2. OPERATIONAL CONSIDERATIONS

1. How to conduct fieldwork during challenging events such as infectious pandemics, floods, droughts, school closures, and other challenging circumstances.
2. How to engage in necessary pre- and post-data collection activities remotely, such as community engagement, obtaining a sampling frame, dissemination meetings, among others.
3. How to take into account ethical considerations such as ensuring privacy and security of respondent in case of contentious research studies, ensuring assent for minors, obtaining and documenting consent from respondents, collecting data from minors, etc.
4. How to adapt face-to-face date collection methods that still require physical presence (uniqueness ethnography, focus group discussions (FGDs), observation checklists, taking physical measurements etc.)
5. How to implement data collection at a distance in limited resource settings where needed facilities may be lacking,
6. How to ensure security of enumerators, staff members, study participants and other stakeholders in cases of face-to-face data collection and engagements.

Under COVID-19 circumstances, APHRC can carry out studies using online platforms such as Short Message Service (SMS), online surveys (web), computer-assisted telephone interviewing (CATI), and interactive voice response (IVR).

Short message service (SMS)

SMS services allow for high levels of anonymity and accessibility for its users. They can also be designed and deployed in different languages just like traditional face-to-face surveys. However, respondents would need to be literate and SMS-savvy to use this particular method. Research also suggests that in SMS surveys, respondents tend to lose interest more quickly, thus a high rate of survey non-completion.

Telephone surveys

Computer-assisted telephone interviewing (CATI) is a telephone surveying technique in which the interviewer follows a script provided by a software application. It is a structured system of microdata collection by telephone that speeds up the collection and editing of microdata and also permits the interviewer to educate the respondents on the importance of timely and accurate data. The software is able to customize the flow of the questionnaire based on the answers provided, as well as information already known about the participant. This method can be done with any type of phone and does not require literacy on the part of respondents. CATI also has higher response rates than SMS and web surveys (about 30%-40%), but is more expensive than those methods.

The Interactive Voice Response (IVR) survey is a pre-recorded automated phone survey in which the respondent responds vocally to questions or enters numerical responses using a keypad. They provide a way to remotely collect survey data without endangering enumerators and respondents. Although IVR surveys are cost effective, they typically have a longer turnaround time from survey deployment to project completion.

2.1 SELECTION CRITERIA

There are various studies that can adopt the methods outlined above. These include;

1. Collect individual specific data (i.e. Knowledge perceptions, options, habits, practices, behavior);
2. Studies with relatively short questionnaires that last less than 30 minutes or with about 15-30 questions;
3. Studies to understand trends, changes in a dynamic setting and proof of concept (studies that require baseline, midline and, end line information); and
4. Studies with more frequent and/or follow up surveys (i.e. weekly, monthly or even quarterly).

However, it should be noted that the following categories of studies may not be suitable for phone interviews:

i. Large comprehensive household surveys such as in the demographic surveillance system (HDSS);
ii. Data that requires physical measurements such as anthropometrics, blood pressure;
iii. Studies involving interviewing of multiple members of households;
iv. Surveys with modules that are complicated, time-consuming and requiring physical display of something to elicit responses or require visual inspection to confirm certain responses.

2.2 DECISION-MATRIX FOR DETERMINING POSSIBILITIES OF FIELDWORK UNDER A PANDEMIC

Under different levels of pandemic prevalence, rates of infection, and severity, the following decisions, described in Table 1, are recommended for project teams planning to go to the field in all countries where APHRC staff implement projects.

The purpose of the Decision Matrix is to guide APHRC researchers on how to go about making choices on data collection approaches under the "new normal" scenario brought on by the COVID-19 pandemic. The new normal means resuming data collection, training, meetings and other research related activities while the risk of SAR-CoV-2 still exists. The underpinning principles include safety for staff, respondents and general public; through adherence to local and national safety guidelines while maintaining scientific rigor and managing the practicalities in the process.

Level	Condition description	Decision
3 – Severe to Critical	The prevalence of the pandemic is alarming; the virus is in high circulation; number of cases and rates of community level transmission are very high and still rising exponentially. The country is in a very high state of alertness, with substantial national and international monitoring, strong social distancing measures, and enhanced tracing in place. National restrictions on movement are enforced. Healthcare systems are overwhelmed, and the country is under strict lockdown.	Fieldwork is strictly forbidden (non-negotiable)
2 - Substantial	The virus is in general circulation, number of cases and rates of community level transmission are rising. The country is in a state of high alertness, with routine national and international monitoring, strong social distancing measures and enhanced tracing in place; national restrictions on movement are enforced.	Fieldwork can only be done through community/ facility-based data collectors while observing and ensuring very strict standards of safety (PPE and physical distancing) and staying alert for any changes to the scenario of the pandemic. In general, avoid/ minimize face-to-face interviews and engagements unless it is a clinical study with necessary precautions. Alternative data collection approaches should be explored.
1 – Moderate to Safe	The prevalence of the virus and rates of community level transmission are negligible or non-existent. The country is in a state of relaxed alertness, with routine national and international monitoring, minimal social distancing and no tracing activities. There are no restrictions in place.	Fieldwork can commence while observing the minimum standards of safety (PPE and physical distancing) and staying alert for any changes to the scenario of the pandemic. Avoid/ minimize face-to-face interviews and engagements unless it is a clinical study with necessary precautions. Alternative data collection approaches should still be explored. Whilst consideration will be made of the respective government regulations, APHRC judgement will prevail in terms of reading the disease transmission trends and likelihood of the country transitioning into the severe infection stage.

Table 1: Epidemiological considerations

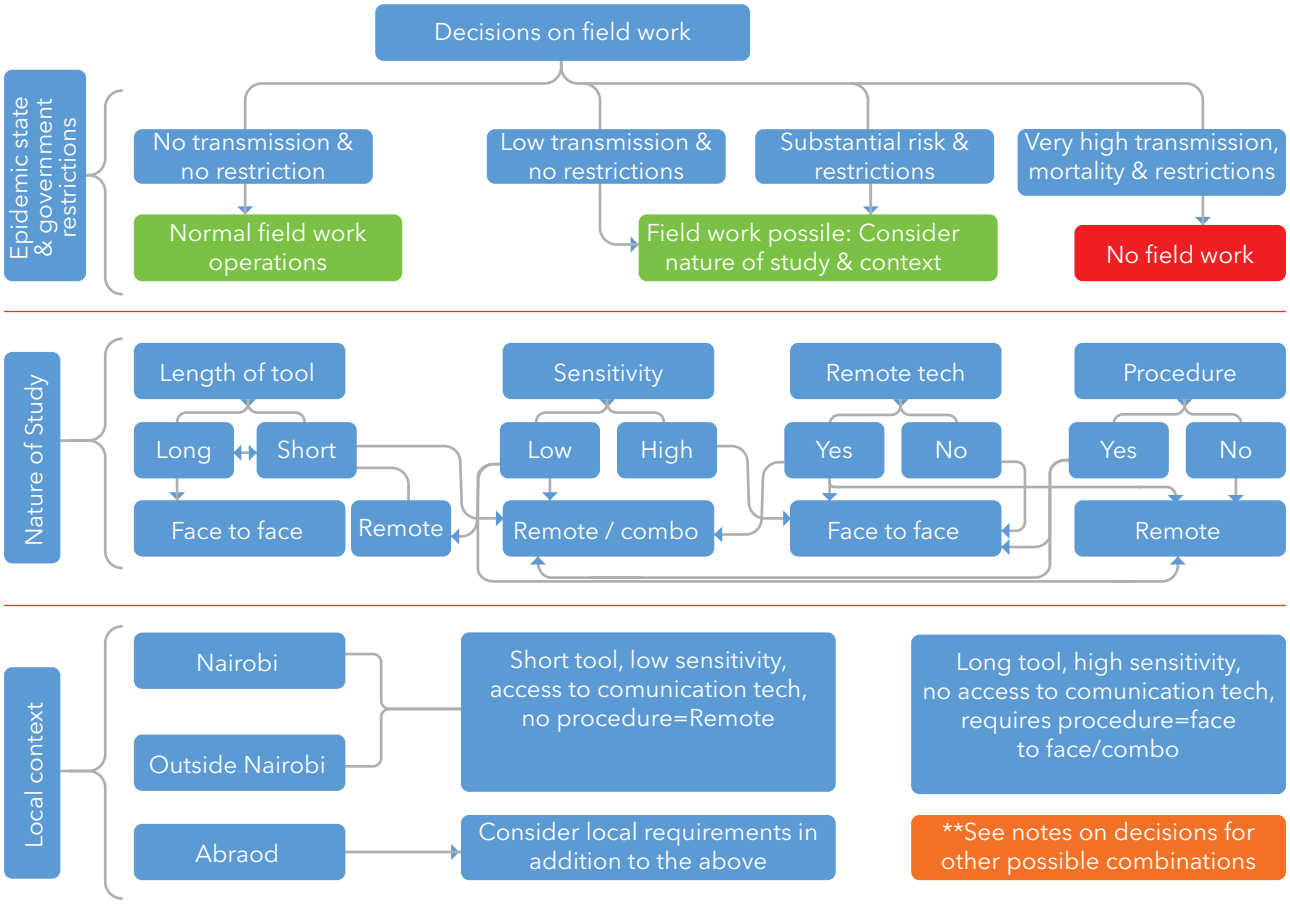
Definitions:

- Epidemic state- as defined by the country and understood by APHRC
- Tool length: Short tool takes 30-45min or less
- Procedure- any data collection activities that involves physically interacting with respondent e.g. collection of specimen, measurements (weight, height, BP etc.), and observations,
- Sensitivity= Stigma or criminalized conditions or behaviour - e.g. HIV/TB status, abortion, sexuality, and substance abuse.

Figure 1 is a summary of the Decision Matrix. It should be noted that this is a highly summarised matrix, and therefore does not cover all possible scenarios in the field. It however, gives insight on what to do in certain situations, and it should be emphasized that its use goes in tandem with usual consultation with the project teams from PI to field teams when key decisions have to be made and implemented.

The key elements include: the epidemic state and associated public health advisories (e.g. prevailing positivity rate, death rates etc), the nature of the study and associated engagements (sensitivity of study, nature of tools, and possibility of using remote engagement); and the local context (place, persons and time) of where the study is being conducted. When all these are taken together a decision can be made: (i) to conduct field work with standard precaution; (ii) no field work, or (iii) data collection using remote approaches.

Decision Tree to guide field work options under the "New Normal"



While APHRC has standard procedures and protocols for all research activities- data collection, trainings, meetings, community engagements, the new normal means that these are no longer adequate. Table 2 gives a comprehensive but non-exhaustive list of things to pay attention to when a decision to work under the new normal is reached, see Decision Tree (Figure 1).

The table lists the issues/challenges and gives guidance on what to look out for and how to address it. These revolve around safe, scientific and ethics and operational efficiency including financial oversight.

Data Collection Method/ Technique	Proposed solutions and way forward
Interviewer guided Questionnaires	Consider adapting all research studies (where possible) to use of: • Voice telephone interviews. • SMS • Electronic forms (online questionnaires sent by email or SMS link) • Video guided communication such as via Skype zoom, etc.
Observation checklists, and Qualitative studies (Ethnographies, In-depth Interviews, and FGDs, physical measurements, sample collection e.g. of blood, sputum, etc)	Researchers should consider the fact that several traditional data collection methods may be impossible to use in the context of disruptions from a pandemic. Our usual default methods of data collection such as FGDs and face-to-face interviews can no longer be considered as the default anymore, even after COVID-19 comes to an end. In proposals submissions, funders are likely to expect to see articulation of preference for new methods rather than the previous default methods. • The rule of thumb is to minimize use of methods that require the researcher to be in close proximity to respondents over extended periods of time. This should be reflected in the proposal if it is a new study. • For already approved studies, consider changing the data collection methods to more appropriate methods through an IRB amendment process. • Another alternative is to consider training and utilizing research assistants and/or Community Health Workers living within study communities, and budget for necessary protective equipment to facilitate data collection through them if it is absolutely necessary to retain the components of the study that require face-to-face engagements. • Where possible, consider using community gatekeepers, e.g. local elders or group leaders, to help in mobilizing potential respondents for studies but these should be limited in number.
Minimum Safety standards for field work operations	The overarching objective of these minimum safety standards is to ensure that field teams, respondents and the general public are protected by minimizing exposure to risk of infection that might be associated with our data collection activities. It is our understanding and principle that safety comes first. No urgency of conducting field work will override APHRC, local, and national safety considerations. These guidelines apply in situations where new cases are being reported (new cases reported over a 14-day period) irrespective of whether there is community transmission or not. It is also important to note that these guidelines are not cast in stone and should be applied according to context taking into account the local and national epidemic control measures, and budgetary considerations.

Issue	Minimum standard	Statements
Public facing interactions	Face shields, N95 face mask, non-surgical gloves, hand sanitizer	Examples include: clinician, or other stationed worker interacting with many clients in a day
Face to face interviews	Face masks, and hand sanitizer for both interviewer and respondent	Social distance must be adhered to
Clinical/physical procedures	N95 face mask for clinician. Ordinary face mask, non-surgical gloves, hand sanitizer for clinician and respondents. Temperature screening for client	
Operations/presence in field for several days	All staff must have carry-on sanitizers	Advise to frequently use
Flu-like symptoms or COVID-19 exposure	If any trainer or trainee has flu-like symptoms, knows that they were recently exposed (contact with confirmed/suspected case), they should be excluded from meeting or data collection activities	Need to screen attendees through a set of questions. Staff will be required to disclose potential exposure/illness

Issue	Minimum standard	Statements
Meetings/training	• Avoid large groups- guided by room size, • Provide adequate sanitary facilities • Limit duration of training each day • Temperature screening • Remind the team the prevention protocols: hand-washing, cough hygiene, avoid face touching, use mask, avoid crowds etc.	Must be observed through the meeting period. Provide materials needed for observing safety
Travel	Adhere to official recommended vehicle capacity.	Long distance travel may require further authorization from team leader
Training rooms	Adhere to recommended and official room capacity. If off APHRC campus, use the recommended 1.5m apart as a guide. Meeting room must be sanitized at least twice daily.	Avoid long interactions with participants in closed or poorly ventilated rooms
Awareness of safety measures	All staff and field workers must be sensitized on the minimum safety standards	Should be integral and part of on-boarding
Stigma/psychological distress	• Avoid sharing other person's health information, • Report if team member or client is distressed,	Actively look out for those they are often not obvious
Staff/participant with pre-existing conditions and or high-risk agebracket.	• Assign tasks with least risk of exposure • Provide additional information	Be careful not to breach privacy. Individuals need not specify the condition they have (provide list)
Staff/team member taken ill with suspected/confirmed COVID-19	• Provide first aid for symptoms like fever and pain using paracetamol, • Call ambulance and transfer to health facility handling COVID-19 • Call off training/field work • Test all contacts and self-quarantine • Sanitize all rooms/facilities shared	Avoid panic, do not abandon patient but take precaution wile handling situation.
Foreseen/unforeseen events like illness with COVID-19, changes in local or national guidelines like local down, or exposure/ contact with COVID-19 patient	• Draw actionable contingent plan • Secure resources to action the plan when need arises- money, important contacts, • Test the plan • Document event and inform PI	Should be a requirement before going to the field

Data Collection Method/ Technique	Proposed solutions and way forward
Training of field data collectors	All field teams have to be trained in use of telephone interviews. Do not assume that everyone has the capacity and skills needed. • Consider conducting online training of field staff on mobile data collection and data management using applications such as SurveyCTO on personal smartphones. • Beware that online trainings may only work well with a small number of trainees. Kindly refer to the APHRC training guidelines for more information on virtual training approaches to deploy.

Data Collection Method/ Technique	Proposed solutions and way forward
Cross-country studies	Consider capacitating in-country partners/collaborators to execute and oversee all study-related activities. • However, find ways of ensuring data collection efficiency and probity when remotely managing partners. This includes having a proactive partner management plan rather than just relying on in-country actors alone. • Ensure that the in-country partners implement and enforce APHRC minimum standards of personal protection and safety for all participants and stakeholders directly involved in the fieldwork. • If the partners' minimum standards are more stringent than those of APHRC, their standards will prevail.
Obtaining a sampling frame and/ or list of phone numbers	For purposes of sampling, consider the following approaches to facilitate pre-data and post-data collection: • Contact numbers from previous surveys: In communities where researchers have already conducted face-to-face interviews, e.g NUHDSS, AWIGEN, etc • Survey firms – In the absence of databases where you already have phone numbers of the participants, a good option is to contract survey firms like Geopoll, who would have access to mobile subscribers if they operate in the country. This option could be relatively more expensive than conducting in-house surveys to obtain sampling frames. But these firms have access to thousands of mobile phone subscribers and have more robust technical capabilities to deploy surveys across different modes. • Service providers – Phone numbers may also be obtained from different service providers such as Safaricom but the Researchers will need to go through and obtain certain approvals before the service providers can grant you access to their phone number data base. • Strategically collect and store mobile data. This requires researchers to include the following statement in the consent form "Your phone number may be used for other studies by APHRC in future." • More phone numbers should also be harvested from non-sampled members of the same community to build up our database of phone numbers. IT will be requested to ensure that this identifying information is stored in a central APHRC database and has a description of the individuals for future research use. • Use of community resource persons such as CHV's, village elders, local staff (nurses in clinics), data collectors from the same community, teachers etc. to collect the telephone numbers from the community. • Localized partnerships – Key resource persons, sub-national technical staff, CBOs, NGOs, Universities, etc., could be identified as collaborators on the study. These can be able to participate in the research process including implementation and dissemination activities in the absence of APHRC staff.
Ethical considerations	Electronic and mobile phone surveys need to undergo the same process of Institutional Review Boards as any type of research involving human subjects. Revised and new study protocols must clearly articulate the ethics dimensions of proposed methods and how any risks to participants will be mitigated. • Before deploying mobile phone surveys, it is important to find out if there are any government regulations that make it illegal for researchers or companies to call or send text messages without expressed consent of the respondents. • For already IRB-approved studies, the lead researcher or Principal Investigator, must amend the protocol, sensitize the community, utilize services of a local resource person to go to listed households and collect phone numbers, conduct the consent process again, and train data collectors on the new method of data collection. • If researchers plan to use contact information (e.g. telephone numbers) of respondents that may have been recorded during face-to-face interviews or completed studies, the good-practice is to seek and record new consent for the upcoming study by use of text or voice calls. • Going forward, the consent form should include an allowance to contact the respond in future by researchers from the same institution with follow-up questions or other studies.

Data Collection Method/ Technique	Proposed solutions and way forward
Obtaining a sampling frame and/ or list of phone numbers	Obtaining informed consent is at the heart of all our primary data collection activities. In fact, without it no data collection involving human subjects should be conducted, save for a few exceptions such as when data are being collected to inform service delivery improvement. Therefore: 1) Prepare the usual standard but concise consenting document that contains information about the project, the procedures, the risks, benefits, confidentiality, voluntary participation, as well as address and contact information of the project principal investigator. This information need to be provided to each participant to the fullest extent possible. 2) Participants need to explicitly know when the consenting process starts. 3) Affirmation of consent: a. If the study is online or short-text, there must be a provision for a checkbox to affirm that the participant fully understands the objectives, risks, and benefits of the study and has voluntarily agreed to participate. b. For audio/video interviews, the participant(s) need to be informed that the affirmation of consent will be recorded. This is irrespective of whether the entire interview is to be recorded or not. The proposed affirmation statement to be read by the interviewer and responded to by the interviewee is as below: "Mr/Ms xxxx, do you confirm that you are the rightful owner of this phone line or you have permission to use it and that you are an adult of at least 18 years of age and that the study objectives and procedures have been explained to you, that you understand the risks and benefits, and you have voluntarily agreed to participate in the study?" For focus group discussions, participants should take turns, saying their name followed by one of them repeating the rest of the statement on their behalf. This should be followed by a similarly recordedconfirmation by the interviewer as summarized in the text below: "I confirm that the study objectives and procedures have been explained to the participant-study ID xxxx, and I am sure/confident that he/she understands the risks and benefits, and that participation is voluntary with no consequences if one chose not to participate". Ensure that the recording equipment is functional and that the actual recording took place. c. Research involving minors: The affirmation process above need to be done for both the parent/guardian. For the minor, the statement is as follows: "Mr/Ms xxxx, do you confirm that Mr. /Ms xxxx is your parent (or guardian) and that he/she is an adult of at least 18 years of age and that the study objectives and procedures have been explained to both of you, that you understand the risks and benefits, and you have voluntarily agreed to participate in the study?" 4) Maintaining confidentiality As researchers, we have a duty to maintain confidentiality of the information shared with us- interview data as well as the consent information. For online or short text interviews, the consent affirmation will/should come as a data element within the synchronized data received at our servers. This data item need to be removed for the analysis data file and kept confidentially in a file with all the other identifying information of each participant. It should be under 'lock and key'. For audio/video interviews, the recording of affirmation by the participant and confirmation by the field interviewer, need to be stored in a secure server and deleted from all devices used for recording the interview. All consent information need to be kept for a period of at least five (5) years. The Project Manager and Principal Investigator are responsible for ensuring that this happens. 5) Waiving Documentation of Informed Consent: In the strict sense of documentation, the proposed procedures above are necessary but not sufficient to certain funders (e.g. NIH) especially for research where the procedures carry substantial risks to the participants. In such cases, necessary amendment will need to be discussed on a case by case basis where plans for obtaining physical signatures can be discussed and arranged. Proposals to be submitted to ERC should consider adding a statement asking for waiver of consent documentation (physical signing on paper or screen using stylus, or scanned copies).

Data Collection Method/ Technique	Proposed solutions and way forward
Response rates	• All project teams will need to consider compensating participants for their air-time/ data as an incentive to complete online or telephone surveys (refer to APHRC Finance Department standard rates for such compensation).. • Consider using a larger proportion of anticipated non-response when computing sample sizes. Typically, 5-10% non-response is considered but for electronic and phone interviews, the researchers may want to consider up to 20% attrition. • Consider increasing the number of recall-backs for "missed respondents". This should be documented in the manual of Operational Procedures (or protocol) for each study.
Avoiding research fatigue	• Consider shorter questionnaires that can be completed in no more than 30 minutes for adults and 20 minutes for young people. • Ensure that questionnaires focus on the key variables without losing the essence of the study objectives. • Repeat interviews – For studies where the questionnaire is difficult to shorten, consider postponing some portions of the questionnaire, by splitting the questionnaire in such a way that the immediate variable that needs to be measured urgently at a certain point is identified, and then administer the rest of the questions periodically or at a later date agreed on with the respondent during the consent process.
Procurement	Research Units and other Divisions at APHRC will need to assess and submit their IT needs in terms of the gadgets they require to actualize the shift from face-to-face data collection to remote data collection. • Coordinated effort will be required to ensure that Research Units and the other Divisions planning to procure similar gadgets do so collectively and gain benefits and economies of scale that arise from bulk purchasing. • The IT department will need to be informed in advance about the needs of different project teams and Units. • Costs of these gadgets will be estimated. • In cases where cellphones are purchased, the lines will belong to APHRC. • In cases where access to internet is not guaranteed for some participants, project teams may consider purchase of modems to be used by the participants/field interviewers and then return them to APHRC once the study is completed.
Longer-term strategies	APHRC will explore the possibility of establishing a national level sampling frame/ platform for surveys using telephone interviews. - The Covid-19 task force will engage service providers (Safaricom) to get information on the requirements and protocols for obtaining access to their large data-base of phone numbers. - Estimation of what it costs to establish a national level sampling frame in Kenya will be made so as to inform the final decision. - The Covid-19 task force will engage GEOPOLL to get information about the capabilities of their platform for surveys and how APHRC could use it. - Options for partnering with GEOPOLL will be explored, and the nature and costs of such partnership will determine the decision to be made on whether or not to partner. - A concept note on how to build the telephone-based data collection infrastructure will be developed. - A scoping study will also be done to find out key drivers for reduced response rates in telephone surveys and how that might be mitigated.
IRB guidelines	In addition to APHRC internal guidelines, researchers will also adhere to guidelines from IRBs and government regulatory bodies responsible for science and technology in the different countries that APHRC staff implement projects. This includes addressing any needed amendments to protocols and any new data collection-related regulations.

SUMMARY OF KEY ISSUES TO LOOK OUT FOR UNDER THE NEW NORMAL:

- Where a shift from face-to-face interviews to telephone interviews is the chosen pathway, amendments to the study protocol will be required to obtain IRB approval.
- Where enumerators had previously been trained for the study, re-training will be required to prepare them for remote data collection, including availability of equipment.
- In cases where face-to-face engagements are unavoidable, there will be a need to budget for infection control and personal protection equipment for all people involved in the activities. There would also be a need to budget for community mobilization and COVID-19 sensitization for some days prior to the resumption of the face-to-face survey.
- In cases of face-to-face surveys, there will be a need to budget for safer transportation of the data collection teams that allows for physical distancing. The same would apply to respondents if they are required to meet in a central place.
- As a result of the changes in data collection timelines, budget adjustments need to be addressed in collaboration with the funder. It is important to obtain approval from the funder on budget variances as agreed in the original contract. Significant changes in scope and approach may require a contract amendment.
- The response rate for telephone surveys is notoriously low. This has to be provided for through targeting bigger sample size.
- Where telephone interviews are the chosen option, it is vital to shorten the questionnaire as much as is practical. The rule of thumb is 30 minutes maximum for adults and 10-20 minutes for young people.
- Some surveys may also cost respondents airtime. Find ways of compensating respondents at least for their air-time. You may also use platforms that cause zero financial costs to the respondents, e.g. use of zero-rated short-codes to send messages so that they can be received and replied to even when respondents do not have airtime.

- Where the training of enumerators cannot be done online, carry out the training in smaller groups to reduce transmission risk, especially if the numbers of field workers involved is large.
- Explore and deploy computer-assisted electronic self-interviews in cases where access to electronic gadgets is assured e.g. something akin to survey-monkey.
- Need to take into account the implications of local and national guidelines and policies around the pandemic on your proposed fieldwork. Align your revised data collection methods to national and local guidelines and policies.
- Consider the option of research assistants using tablets (or smartphones) rather than the traditional paper-based note-books and pens. This will minimize potential transmission through surface contact.
- Where FGDs are planned, keep the number of participants per group to the bare minimum and ensure availability and awareness of PPE for every participant.
- The new normal might require longer than anticipated duration of implementation of research activities, and costs from PPE. This is likely to push the costs up. However, telephone interviews could reduce the costs to some extent as there will be no travel and accommodation costs involved.
- There are cases where the population of interest has a low penetration rate of mobile phones and internet, and thus, remote/online data collection becomes almost impossible, unless the research team finances and purchases phones – with significant budget increases.
- Set up physical spaces that enable realization of safety and protection from the virus in cases where face-to-face engagements such as FGDs are unavoidable.

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