



Adaptations to SMART surveys in the context of COVID-19 in Cox's Bazar, Bangladesh

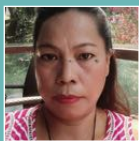
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Survey team leader taking anthropometric measurements, Cox's Bazar

BANGLADESH

What we know: Nutrition programming, including nutrition surveys, has faced significant disruption as a result of the restrictions in movement arising from the COVID-19 pandemic.

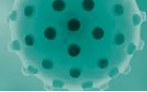
What this article adds: Adaptations to the Standardized Monitoring and Assessment of Relief and Transitions (SMART) survey methodology and operations were made in the context of Cox's Bazar refugee camps in Bangladesh during 2020 to enable data collection to continue in the COVID-19 context. Adaptations included reducing the number of indicators, reducing sample size, addressing myths and fears around COVID-19 through pre-survey community sensitisation; using experienced enumerators to shorten pre-survey training; and use of infection prevention control (IPC) measures by the survey team during the survey. Team members and household members were screened for COVID-19 symptoms regularly and excluded if symptoms were declared. The overall non-respondent rate was very low (5.4%-8.3%) and exclusions due to COVID-19 were low at 1.5%. Adaptations worked to allow the collection of high-quality data. An additional 3 to 5 minutes were required per household to allow for implementation of IPC measures. The experience shows that context-specific adaptations and community sensitisation and mobilisation can enable safe, quality data collection in the COVID-19 context.

Background

Cox's Bazar nutrition context

Cox's Bazar (CXB) is a highly disaster-prone coastal district in Bangladesh and one of 20 of Bangladesh's 64 districts identified as vulnerable with an estimated poverty prevalence rate of 16.6% (Government of Bangladesh, 2017). The CXB district has a host population of 2,290,000 and an additional estimated population of 871,924 refugees residing in 32 makeshift and two registered refugee camps across Ukhia and Teknaf (sub-districts) (Government of Bangladesh-UNHCR, 2021). Since the influx of refugees in 2017, the Nutrition Sector in CXB has been providing comprehensive nutrition services to address the underlying causes of malnutrition across all camps targeting children under five years of age, children over five years of age, adolescent girls and pregnant and lactating women. Although the protracted crisis in CXB has stabilised to some extent, the COVID-19 pandemic has had a significant impact, limiting access to services, which has necessitated adaptations to nutrition programmes. Adaptations to community-based management of acute malnutrition (CMAM) programmes in CXB have been outlined in recent *Field Exchange* articles.¹

¹ <https://www.ennonline.net/fex/63/cmamcxbcovid19adaptations> and <https://www.ennonline.net/fex/63/cxbvitaminsupplementation>



Population representative nutrition surveys

Action Against Hunger (ACF) Bangladesh, with the support of ACF France, the ACF Canada SMART team and the ACF UK coverage team, regularly monitor the nutrition and health situations in both refugee camps and host communities. ACF currently leads the implementation of nutrition surveys in CXB and chairs the Nutrition Sector’s Assessment and Information Management Technical Working Group (AIM-TWG). At the national level, ACF is supporting the formation of a National Assessment Technical Working Group. Since 2009, ACF has conducted 85 nutrition surveys in Bangladesh including 60 Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys, six rapid SMART surveys, six Standardized Expanded Nutrition Surveys (SENS), seven coverage assessments (SQUEAC/SLEAC), three Link Nutrition Causal Analyses (Link NCA) and three health facility assessments. Of these, 54 surveys were conducted in CXB.

SMART surveys by ACF Bangladesh collect data on anthropometry, mortality, morbidity, nutrition supplementation, food assistance, infant and young child feeding practices, food security and livelihoods and Water, sanitation and hygiene (WASH). The data collected informs the formulation of the joint response plan and multi-sector and integrated humanitarian interventions.

Following the release of interim global operational guidance on population level surveys and household level data collection in the COVID-19 context,² ACF Bangladesh, in consultation with the Nutrition Sector and government authorities, adapted the methodology for conducting SMART surveys and tested this in refugee camps and host communities in CXB between November 2020 and February 2021. The objective of this article is to capture the experiences and key lessons learned while implementing this interim guidance in three refugee camps to support its further development and implementation in other contexts given that most countries globally have to adapt their surveys due to COVID-19.

Adapting surveys in CXB in the COVID-19 context

Necessary technical, operational, logistical and HR adaptations were made in order to minimise the risk of COVID-19 transmission for the targeted surveyed populations and survey teams during the implementation of three SMART surveys. The assessment method was endorsed by the National Nutrition Services (NNS), the Institute of Public Health Nutrition (IPHN) through the CXB District Civil Surgeon’s Office and the Office of the Refugee Relief and Repatriation Commissioner. All adaptations, outlined below, were comprehensively discussed and agreed in a series of meetings, webinars and email exchanges with AIM-TWG, the Nutrition Sector, NNS, the Civil Surgeon’s Office and the global SMART team at ACF Canada and ACF France headquarters.

Methodology adaptations

The number of indicators collected was reduced

to include only those critical for programme decision-making including anthropometric data, a few health indicators and mortality data. Indicators related to food security, anaemia and health aspects, which are usually included, were omitted to simplify the approach and limit the interview time in order to reduce the contact time and minimise the risk of COVID-19 transmission.

For sampling, the precision level was kept at the minimum acceptable level as per the SMART guidance³ to limit the sample size thereby reducing further non-essential contacts with the population. A relatively higher non-response rate (NRR) was factored in for refugee populations (Makeshift camp:18%, Nayapara Registered camp:12% and Kutupalong Registered Camp: 18%) compared to similar past surveys to account for the possible refusal and exclusion of households due to COVID-19 related issues.

Operational adaptations

A number of adaptations were made to survey protocols as advised by global guidance, as follows:

Pre-survey training

- All survey enumerators, team leaders, survey managers and advisors were tested for COVID-19 (using a PCR test) three days prior to training.
- Adequate health and safety measures (use of personal protective equipment (PPE), health screening and maintaining proper physical distancing) were taken during training.
- A special session on the COVID-19 pandemic and necessary infection prevention control (IPC) measures was included in the training.

Survey implementation

- During field implementation, all survey team members were provided with surgical face masks and hand sanitiser. Measurer assistants were also provided with hand gloves to disinfect anthropometric equipment between interviews to avoid skin contact with disinfectant. Each team carried a safety disposal bag for used PPE which was properly disposed of at the end of data collection each day.
- All team members sanitised their hands immediately before entering a household and after completing each household data collection using alcohol-based hand sanitiser with at least 60% alcohol.
- During the interview, the interviewer and respondent maintained a distance of at least one metre (when possible in the confines of household spaces), even if wearing a mask, and the number of persons present during the interview was limited to a maximum of three. Respondents and all children over the age of two years were also given a mask to wear during the interview.
- Anthropometric measurements were mostly taken outside in an open, shaded area with enough space for proper physical distancing and air circulation.
- Anthropometric equipment (weighing scales, height boards and blank wooden boards) were disinfected between each household. New mid-

upper arm circumference (MUAC) tapes were used for each household and those previously used were left with each caregiver for use within the Family MUAC approach.⁴ Additional time was allocated to each house-hold to ensure safety measures could be carried out.

- Well-functioning vehicles with enough space were hired for the survey teams to ensure social distancing during the field travel and these were disinfected regularly. All drivers were also provided with a face mask and hand sanitiser.

In consultation with the AIM-TWG and government officials, additional measures over and above the global guidelines were also put in place to further reduce the risk of COVID-19 transmission for these specific surveys including those conducted in camps. Those additional adaptations were as follows:

Pre-survey preparations

- The COVID-19 situation was closely monitored and survey fieldwork was only permitted during periods when positive confirmed cases were low (according to the World Health Organization(WHO) Health Sector epidemiological update).
- Because of fear/stigma/mistrust due to COVID-19, extra efforts were made when conducting advocacy and sensitisation with camp leaders and camp-in-charges (government officials) and community mobilisation prior to the start of each survey. Special emphasis was placed on avoiding any confusion, misinformation, rumours and fear in the community, therefore ensuring maximum participation and cooperation both from the camp management and communities.
- While field testing the questionnaire and methodology, special emphasis was given to the team comprehension and appropriate implementation of IPC health and safety procedures (e.g., wearing PPE, ensuring physical distancing, administering COVID-19 screening checklist etc.) as those were introduced for the first time due to the pandemic.
- Coordination took place with the United Nations High Commission for Refugees (UNHCR) health unit to provide the necessary PPE for the survey team to avoid unwanted procurement delays.

Survey team measures

- The assessment mainly used highly experienced measurers (who had previously participated in at least two surveys and had passed the standardisation test in the last 12 months) in order to skip the standardisation test as recommended by the SMART interim guidelines in order to shorten the training period from five to three days to minimise risk.

² <https://smartmethodology.org/smart-survey-guidance-covid-19/>

³ SMART Manual 2.0, 2017 <https://smartmethodology.org/survey-planning-tools/smart-methodology/smart-methodology-manual/>

⁴ Family MUAC was already implemented within CXB whereby caregivers are trained to screen their own children for wasting using MUAC tapes with self-referral to nutrition centres if severe or moderate wasting is indicated.



Table 1 Health screening checklist for survey team

	Conditions	Morning	Evening
		(Y/N)	(Y/N)
Most common and mild symptoms	1. Did the staff and/or any team member have a high temperature ($\geq 100.4F/38^{\circ}C$) without a dry cough, tiredness?		
	2. Did the staff and/or any team member have high a temperature ($\geq 100.4F/38^{\circ}C$) with dry cough, tiredness?		
Mild and less common symptoms (treated from home)	3. Did the staff and/or any team member have a high temperature ($\geq 100.4F/38^{\circ}C$) without a sore throat, diarrhoea, conjunctivitis, headache, loss of taste or smell, aches and pains?		
	4. Did the staff and/or any team member have a high temperature ($\geq 100.4F/38^{\circ}C$) with a sore throat, diarrhoea, conjunctivitis, headache, loss of taste or smell, aches and pains?		
Serious symptoms (take immediate medical attention)	5. Did the staff and/or any team member have a running nose, sneezing, shortness of breath, chest pain or pressure, loss of speech or movement?		

- The number of survey enumerators was reduced to a minimum of three persons per team (one team leader and lead measurer, one measurer assistant and one interviewer) to limit exposure and allow physical distancing measures.
- An additional six team members were trained and kept on standby to recall at any point if a team member showed COVID-19 symptoms, was placed into quarantine or tested positive.
- All survey team members were put in a residential hotel with full board and were restricted from going outside and interacting with others during the whole training, field testing and data collection to minimise the risk of infection.

- All survey team members monitored their health using a health-screening checklist developed by ACF Bangladesh twice per day (morning and evening) during the survey period. If any individual met any of the conditions outlined in Table 1, they were requested to go into mandatory quarantine and were replaced by a member of the reserve team.

Participant screening

A standard health-screening checklist for interviewees was developed jointly in consultation with the Nutrition Sector and AIM-TWG members for the inclusion and exclusion of children and/or households. Body temperature was measured using an infrared digital thermometer and questions were asked as described in Table 2. If any household

met any of the four conditions as explained in Table 2, the household was excluded from the survey. If any household had multiple eligible children but at least one child without fever or other COVID-19 signs/symptoms and no other family history of COVID-19 infection, these households were included in the survey. Any other household members with a high fever or other signs or symptoms were asked to isolate from the survey team but this was not considered a household exclusion criteria.

Data collection and supervision

- Data was collected on tablets (Lenovo Tab) using the Open Data Kit (ODK) application to reduce the time spent entering data and to check for data quality. All teams carried a back-up tablet and hard copies of the questionnaire in the event of tablet failure.
- Survey teams were supervised daily using a supervision checklist with a minimum of one supervisor or survey manager per team on a rotating basis to ensure consistency in data collection across all teams. All data was uploaded and reviewed daily in order to monitor the quantity and quality of the data collected.
- A daily feedback session using a digital platform was held but reduced from 30 to 10 minutes.

Findings

All three surveys reached the sufficient number of households and children, well above the minimum requirement as per SMART survey guidelines (90% of clusters and 80% of children) to ensure data quality and representativeness (Table 3).

The overall NRR was very low (5.4 to 8.3%) and much lower than anticipated and used for the sample size calculation (12 to 18%) at the protocol development stage. Table 4 shows the different causes of non-response. This indicates that household exclusion due to COVID-19 exclusion criteria was very low (1.5%) in the Makeshift camp with no exclusions in the other two camps.

Although the original plan was to revisit non-response households for inclusion in the survey, this was not required as all three surveys had achieved adequate samples despite the exclusion of some households. The overall data quality for the three surveys was either “good” (Makeshift camp) or “excellent” (the two registered camps) as per the SMART plausibility score. The overall quality of the survey for the Makeshift camp was high but a penalty was given for a standard deviation (SD) of weight-for-height Z-score (WHZ) (SD value ≤ 0.8 ; acceptable) which was due to higher homogeneity in that camp.

Although there was no standardisation test used, most enumerators were highly experienced and skilled and therefore a high level of standardisation was assumed which resulted in very few outliers in the data.

⁵ The sample size was calculated using ENA for SMART software based on different parameters. A two-stage cluster sampling technique was applied in the Makeshift camp whereas a simple random sampling technique was applied in the two-registered camps.

Table 2 Health screening checklist for household inclusion/exclusion

Conditions	Response (Y/N)
1. Did eligible children (6-59 months) have a high temperature ($\geq 100.4F/38^{\circ}C$) and/or others symptoms of COVID-19 (e.g., dry cough, sneezing, shortness of breath, chest pain or pressure, loss of speech or movement etc.?)	
2. Did anyone in this household test positive for COVID-19 within the past 14 days?	
3. Was anyone in this household in close contact with a confirmed COVID-19 positive patient within at least 14 days?	
4. Is anyone in this household currently in home or centre quarantine for isolation?	

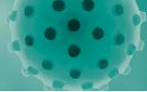
Table 3 Proportion of households and children included in SMART surveys

Survey location	Targeted ⁵ households	Households achieved	Targeted children	Children achieved	Non-response rate (NRR)
Makeshift camp	611	578 [94.6%]	492	488 [99.2%]	33 [5.4%]
Nayapara registered camp	585	552 [94.4%]	362	305 [84.3%]	33 [5.6%]
Kutupalong registered camp	709	650 [91.7%]	334	346 [103.6%]	59 [8.3%]

Table 4 Distribution of non-response households by cause

Survey area	Absent	Refused	Excluded due to children's high fever	Others*	Total non-response rate (NRR)
Makeshift camp	23 [3.8%]	0 [0%]	9 [1.5%]	1 [0.1%]	33 [5.4%]
Nayapara registered camp	7 [1.2%]	1 [0.2%]	0 [0%]	25 [4.3%]	33 [5.6%]
Kutupalong registered camp	26 [3.7%]	33 [4.6%]	0 [0%]	0 [0%]	59 [8.3%] [0%]

*Wrong address/moved to another place



The data collection time of 15 minutes for each household, as recommended by the SMART operational guidelines, was not feasible in this context. A minimum of 20 to 25 minutes was required on average per household with the anthropometry and mortality components. Administration of the health screening checklist, measuring of body temperature, asking/putting on masks for household members and disinfecting equipment added to the time required. There was no refusal related to fear of COVID-19 and health and safety measures were well accepted by community members. Almost all households already had facemasks and other PPE that they were willing to use. However, it was often very challenging to maintain a distance of at least one metre especially in the Makeshift camp due to the very limited space available in and around the households.

All survey team members tested negative for COVID-19 prior to the survey and no one developed other signs/symptoms of COVID-19 or became unwell during the survey implementation.

Reflections and key lessons learned

Weighing up the risks and benefits of conducting surveys during the COVID-19 pandemic is important. That was aided in this experience by a

thorough series of discussions with Nutrition and Health Sector partners and local health and administration authorities and a constant review of local epidemiological trends around COVID-19. Gaining an understanding of the local context and community perceptions around COVID-19, including stigma, fear and misconceptions, was also important prior to embarking on the survey in this context. This understanding informed community sensitisation prior to the survey and communications during the fieldwork which led to a high level of community compliance with the survey. The selection of locally experienced, skilled enumerators who could understand the context was also important.

There is a high risk that excluding children and households due to high fever will pose a systematic bias by also excluding potentially malnourished children. This could impact the reported malnutrition prevalence and other relevant indicators since there is a general assumption that sick children are more likely to be malnourished. This is unlikely to have affected the results of the three surveys here, given that the exclusion rate was very low, but should be considered as a potential source of bias in SMART surveys in other contexts where COVID-19 rates are higher.

In terms of measures used during the conducting of surveys, several adaptations were made to the interim guidance based on a series of discussions and consultation with the Nutrition Sector, AIM-TWG, NNS, IPHN, the local Civil Surgeon's Office as well as ACF Canada and France headquarters advisors. Since the COVID-19 crisis was new for everyone and there was a great deal of sensitivity around conducting surveys in this period, a large number of stakeholders were hesitant to embark on the process. A lot of the additional recommendations therefore came from multiple partners, organisations and technical experts which were added to the global guidance particularly for the specific CXB context but which would not necessarily be needed in other settings.

The interim guidelines on SMART surveys recommend the use of both hand gloves and sanitiser for team members. However, using both items proved to be time consuming, resource-heavy and had the potential to create an extra waste management burden at field level. It was therefore decided to only use hand sanitiser (aside from the use of gloves for those cleaning equipment) so as to reduce the resources needed. This appeared to have no negative impact on transmission rates in the context of these three surveys.

Experience from this survey showed that the standard facemask size was difficult to use with children. The recommended 15 minutes allocated for each household was not adequate to complete the anthropometry and mortality components of the survey and apply IPC measures. On the basis of this experience, several recommendations are made to partners who would like to conduct SMART surveys in COVID-19 context, as described in Box 1.

Conclusion

Experience from conducting three SMART surveys in the context of COVID-19 in CXB showed context-specific adaptations can enable the proper application of SMART survey guidelines. In this context, community mobilisation that took into account prevailing community COVID-19 myths and concerns prior to the survey enabled a good response rate and IPC measures prevented virus transmission among respondents and survey team members. This enabled the collection of information to inform the nutrition response. It is recommended that surveys continue to be conducted despite the extra efforts and resources needed to minimise the risk of virus transmission.

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Box 1 Recommendations to implement SMART surveys in the context of COVID-19

Pre-survey preparation

1. Critically review and monitor the COVID-19 situation in the context before embarking on a decision to conduct a SMART or other population level survey that requires household level data collection.
2. Inform and consult with local authorities (e.g., local government, law enforcement authorities, camp management committees and the Health and Nutrition Sectors) prior to conducting any survey during the COVID-19 pandemic. This is particularly important during the pandemic as internal and in-country rules and regulations may be imposed including movement restrictions due to the pandemic. Consultation with the relevant authorities is critical to gain the necessary approvals and full cooperation to successfully conduct the survey.
3. Use local in-country expertise in technical and management survey aspects wherever possible to ensure both quality data collection and the community's health and safety in the COVID-19 context.
4. Invest in community mobilisation and advocacy prior to the survey to address rumours and misinformation around COVID-19 in the community.
5. Adequate funding and time should be planned for the proper adaptation of IPC health guidance, the procurement of necessary disinfectant and PPE items and any unforeseen contingency measures required to make the survey as safe as possible in the COVID-19 context.
6. Organisations and the Sector/Cluster should focus on the minimum key indicators required in the survey questionnaire to enable sufficient nutrition situation monitoring and evaluation and decision-making in the context. All additional non-essential indicators should not be included in surveys implemented in the COVID-19 context to reduce exposure time to the survey population and households.
7. Carefully adapt and contextualise the global guidance (e.g., interim global operational guidance on population level surveys and household level data collection in the COVID-19 context) with a group of experts through a technical committee (e.g., AIM-TWG, Sector/Cluster) to ensure that the guidelines suit the unique context in which they are being applied.
8. The NRR should be carefully estimated during sample size calculations. Child fever prevalence based on a two-week recall period should not be directly used for COVID-19 related NRR for sample size calculations as it may unnecessarily inflate the NRR.

Survey implementation

9. Review the allocated time per household based on field testing while taking into consideration extra time for health screening and IPC measures during household visits.
10. Very close monitoring of daily survey field activities by the responsible survey manager is needed to ensure adherence to IPC guidance, data quality, the health and wellbeing of the survey team members and the number of non-responses either due to COVID-19 related rejection or exclusion.
11. Additional survey days (e.g., two to three days) should be planned for during the COVID-19 pandemic to revisit all missed or excluded households either due to high fever or absenteeism. This will minimise the possible high NRR that may happen if many children and/or mothers/caregivers are found with fever on the designated days of data collection.