

VACCINATION COVERAGE BASELINE SURVEY AMONG INTERNALLY DISPLACED CHILDREN AGED 6 WEEKS-23 MONTHS IN BUHIMBA AND MUGUNGA HEALTH AREAS OF GOMA AND KARISIMBI HEALTH ZONES, NORD-KIVU PROVINCE, DEMOCRATIC REPUBLIC OF CONGO

Study protocol

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| **Study site** | Buhimba and Mugunga health areas, North-Kivu, DRC  |
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# LIST OF ABBREVIATIONS

**95% CI** 95% confidence interval

**BCG** Bacile Calmette-Guerin

**CFR** Case Fatality Ratio

**CHW** Community Health Workers

**CI** confidence interval

**cVDPV2** vaccine derived poliovirus type 2

**DTP**  Diphtheria – Tetanus – Pertussis

**EPI** Extended Programme of Immunization

**HAO**  Humanitarian Affairs Office

**Hep B** Hepatitis B birth dose

**Hib** Haemophilus influenza type B

**HPV** Human Papillomavirus

**IDP** Internally Displaced Person

**INGO** International Non-Governmental Organization

**IPV** Inactivated Polio Vaccine

**MCV** Measles containing vaccine

**MenA**  Meningococcal A conjugate vaccine

**MoH**  Ministry of Health

**MSF** Médecins sans Frontières

**MSF-OCA** Médecins sans Frontières – Operational Centre Amsterdam

**MVC** Mass Vaccination Campaign

**NID**  National Immunization Day

**OCHA** Office of the Coordination of Humanitarian Affairs

**OPD** Outpatient Department

**OPV** Oral Polio Vaccine

**PCV** Pneumococcal Conjugate Vaccine

**PHC**  Primary Health Centres

**SIA** Supplementary Immunization Activities

**TB** Tuberculosis

**Td** Tetanus and diphtheria vaccine

**VCS**  Vaccination coverage survey

**VCS** Vaccination coverage survey

**WHO**  World Health Organization

# 1. INTRODUCTION

## 1.1 Country Information

The Democratic Republic of Congo (DRC), about the size of Western Europe, is the largest country in Sub-Saharan Africa, and among the five poorest nations in the world. Nearly 62% of Congolese, around 60 million people, live on less than $2.15 a day[[1]](#footnote-2).

A long history of conflict, political upheaval and instability have led to an ongoing humanitarian crisis with forced displacement of populations. The country has 5.2 million internally displaced people, some 1.4 million returnees and 527,000 refugees and asylum seekers from neighbouring countries. Internal displacements are mainly caused by attacks or armed clashes and land and inter-community conflicts[[2]](#footnote-3).

The DRC has a very high burden of infectious diseases and is prone to recurrent epidemics. The country is currently dealing with outbreaks of cholera, measles, monkey pox and vaccine-derived polio. Malaria is the principal cause of morbidity and mortality, accounting for more than 40 percent of all outpatient visits and for 19 percent of deaths among children under five years of age. The eastern provinces have also seen recurrent outbreaks of Ebola. The DRC’s health systems, already impacted by the protracted conflicts, are inadequately equipped to deal with the periodic epidemics: in 2020 close to 23 million children missed out on routine vaccinations due to the burden of the COVID-19 pandemic on health services[[3]](#footnote-4).

The province of Nord-Kivu, with the capital of Goma and a population of about 10 million, borders the province of Sud-Kivu to the south, Maniema and Tshope to the west, and Ituri to the north. To the east it borders Rwanda and Uganda. The capital Goma lies on the northern shore of Lake Kivu, one of the African Great Lakes.

**Figure 1** *GOMA MAP*



## 1.2 Profile of the Goma IDP camps

Since the beginning of 2023, MSF Holland has been delivering primary and secondary healthcare alongside WASH services to the internally displaced persons (IDPs) in Western Goma, who have fled a resurgence of violent conflicts in the Rutshuru and Masisi regions of Nord-Kivu, areas about 60 km to the west and northwest of Goma. The North Kivu province has long been de-stabilized by war, and in the last years has also been in the middle of complex political turmoil and undergoing regular attacks from various militia groups.

Fighting between military and rebel groups in Rutshuru and Masisi territories of Nord-Kivu, DRC, has provoked significant population movements into the Goma area, with the creation of large IDP camps on the outskirts of Goma since January 2023. The population of the five main IDP camps in western Goma was estimated at 340,000 in March 2024, with almost a quarter of these IDPs having arrived after Jan 2024. It is thought that in the same period an additional 850,000 IDPs have found refuge with host families or in other accommodation in the resident urban population of Goma.

## 1.3 Vaccine-preventable diseases

As part of the emergency interventions for cholera and measles in the IDP camps MSF has been operating an outpatient clinic in the Bulengo camp From February to August 2023. Between February and June 2023 the clinic has seen around 1,400 patients per week, with 30% children under the age of 5.

In children under five years, 70% of the diagnosis refer to partially or fully vaccine preventable diseases: acute watery diarrhoea, measles, meningitis, fevers, and upper and lower respiratory tract infections (other frequent conditions include malaria, eye infections, skin diseases and malnutrition).

Data from MSF health facilities in 2023, from Bulengo and Lushagala camps also shows that more than 80% of children under 5 treated in the clinics were not vaccinated or had an incomplete vaccination status. Vaccination coverage in the areas of origin of the majority of the camp residents (Masisi and Rutshuru regions) is known to be low.

## 1.4 Disease outbreaks in IDP camps

The IDP camps in western Goma have experienced two significant disease outbreaks in 2023: a cholera epidemic (March-June 2023) with a total of 5,500 cases and 17 deaths, the second outbreak started in November 2023 and a measles outbreak over the same period with 1,700 cases. A retrospective mortality survey in the camps carried out by MSF-OCA in April 2023 identified measles as one of the main causes of death in the camp population during the first 3 months of 2023. Mortality levels for communicable diseases found in the survey were far higher than mortality estimates derived from health service data, pointing to a significant level of unidentified morbidity and mortality in the camp community that is not captured in routine monitoring.

## 1.5 Childhood vaccination schedule and the current multi-antigen vaccination campaign

The DRC vaccination calendar is based on 6 vaccination events between birth and 15 months of age: vaccinations against polio (OPV) and TB (BCG) at birth, followed by a second event at 6 weeks including polio, DTwP-HepB-HiB (Penta), pneumococcus (PCV) and rotavirus (RV), a third event at 10 weeks covering second doses of polio, DTwP-HepB-HiB (Penta), pneumococcus and rotavirus, a fourth event at 14 weeks for the third doses of these plus another type of polio vaccine (IPV), the fifth one at 9 months for measles (MCV1) and yellow fever (YF) vaccinations, and the final event at 15 month for Measles (MCV2).

 **Table 1: Vaccination schedule for children from-0 to 15 month in DRC**



**Table 2: Target diseases and vaccine administration for children**



In the camp areas, four vacciation campaigns have taken place between April and June 2023: a measles vaccination campaign by OCP (in Shabindu and Rusayo IDP camps), a measles vaccination campaign by PEV/BCZ (province-wide), an Ebola vaccination campaign for health staff and Ebola first responders by PEV/BCZ (province-wide), and a polio vaccination campaign by PEV/BCZ (part of the national polio vaccination campaigns scheme).

The OCP measles campaign faced a number of issues (low coverage rate, a dispute over the workload of vaccinators, etc.). Separately, the province- and country-wide campaigns were implemented successfully but pushed back a long-planned multi-antigen catch-up campaign.

The first phase of that three-phase multi-antigen campaign, with MSF-OCA support, were carry out in mid-July 2023.The campaign covered IDP camps and resident populations in two Aires de Santé of western Goma: Aire de Santé Buhimba (which includes the IDP camps of Bulengo and Heloïm), and Aire de Santé de Mugunga (which includes the IDP camps of Lushagala and Shabindu).

The campaign has provided BCG vaccinations to all children under 1 year, as well as DTwP-HepB-HiB, polio, measles, rotavirus and yellow fever vaccines to all children up to 59month. In the extension of the vaccination age range for rotavirus (beyond the WHO recommended age limit of 23 months) the campaign followed DRC national guidelines.

# 2. RATIONALE

To avert disease outbreaks and safeguard the health of an already vulnerable population, MSF -OCA is supporting the DRC Ministry of Health and the National Vaccination Programme (Programme Elargi de Vaccination PEV) in conducting a catch-up multi-antigen mass vaccination campaign in three phases, covering all routine antigens outlined in the national immunization schedule for both the camps and the general urban population of the area.

To ascertain the target for the vaccination campaign, the required vaccine doses and all resources for the campaign, a vaccination coverage survey to estimate the percentage of zero-dose and under-immunized children (defined as those who have not received the first dose of diphtheria, tetanus, and pertussis-containing vaccine (DTP1), and those who did not receive the third dose of DTP3 respectively) will be carried out. Simultaneously, the survey will gather shelter and household size data to generate a population estimate for the camps.

The indicators on baseline vaccine coverage will aid us to provide and indication of vaccines needed for the intervention and assess the impact of intervention in terms of coverage.

. There are no clear targets for what an adequate vaccine coverage in these situations (muti-antigen campaign in IDP contexts) would be. For this reason, the results of ths survey, together with the results of a post vaccination coverage survey, will help to gather indicators to better understand what can be expected from these interventions, in terms of reduction of percentage of zero dose children.

# 3. OBJECTIVES

## 3.1. Primary objectives

To estimate DTP1 and DTP3 coverage for children aged 6 weeks-11months and 12-23 months living in the IDP camps in Western Goma, and in the resident population of Buhimba and Mugunga Health areas.

## 3.2. Secondary objectives

* To provide recommendations for vaccination strategies and surveillance in this
 context and similar ones
* To estimate camp population sizes living in the targeted IDP camps.

# 4. Survey Design

Vaccination coverage survey using age and area stratified random sampling using GPS points. The age strata will be 6 weeks to 11 months and 12 to 23 months. The are starta will be the resident populations of Buhimba and Mugunga Health areas and the IDP populations.

The determination of the vaccination history will be done by interview with the heads of camp households of the targeted children, examination of the individual home-based records (vaccination cards) for children 6 week to 23 months are recorded, and the verbal report of the vaccination history.

# 5. Target population

All children aged 6 to 23 months living in the IDP camps of Buhimba, CBCA, 8ème CPAC, Lwashi, Eloim Lushagala, Lushagala Extension and Shabindu; and those in the health areas of Buhimba and Mugunga the time of the survey will be included.

## 5.1. Inclusion and exclusion criteria

Persons will be included in the survey if they satisfy all the following criteria:

* Living in the randomly selected househol*d and* Informed consent has been given by the persons themselves or their parents/guardians/caretakers.
* Are in the 6 to 23 months age range.
* Informed consent has been given by the parents / guardians / caretakers of the children of the age group concerned.

Persons will be excluded from the survey if they satisfy one of the following criteria:

* Refusal to participate in the survey (persons themselves or their parent/guardian/caretaker)

*Or*

* Inability to locate the selected participant after two attempts to trace him/her

# 6. DEFINITIONS

## 6.1. Household Definitions

*Definition of household*

A household will be defined as a group of people who were under the responsibility of one person or head of household.

Definition of head of household

The head of household is defined as follows:

* Adult household member >18 years, and
* Can give accurate information on all demographic issues in his/her
household (or can identify authorise another member of the household who can provide this information) *and*
* Is present at the time of the survey

A household will be excluded from the survey if none of the household members fulfil all these criteria.

## 6.2. Vaccination definitions

* Vaccination for DTwP-HepB-HiB (child aged 6 weeks to 23 months) during the interview by the presentation of a vaccination card.
* Vaccination for DTwP-HepB-HiB confirmed during the interview by the verbal history of the parents / guardians / caretakers of the subject (child 6 weeks to 23 months), but without verification using a vaccination card.
* Not vaccinated: A person who does not have a written vaccination record and is reported not to have received the vaccination during a vaccination campaign. This is confirmed in an interview with the parent/guardian/caretakers of the subject (child 6 weeks to 23 months) stating that no vaccination has been received.
* Vaccination status unknown: a child whose parents / guardians / caretakers do not remember if the survey subject was vaccinated and there is no other evidence available (e.g. vaccination card).

# 7. SAMPLE SIZE AND SAMPLING

## 7.1. Sample size Calculation[[4]](#footnote-5)

The sample size was calculated with the help of ENA .This survey will have two strata with different sample sizes; one from the IDP and one from the host community.

**Sample size strata IDP- camps**

**Children 0 to 11 months**

For the sample size calculation in children 6 weeks to 11 months in the IDP camps, an expected vaccination coverage of 0.6, an alpha error of 0.05 (confidence level of 95%), and a precision of 9% will be used. The total sample size for this strata will be 113.8 children

Based on a reported average household size of 5 with 4% of population of age 6 weeks to 11 months, we can expect on average a frequency of 0.2 children per household. The expected response rate will be 25%.This will result in **798** households to visit.

All the parameters considered are based on the findings of the recent survey (April 2023, in Bulengo and Lushagala)

**Children 12 to 23 months**

Considering the same parameters as above and assuming that will expect the same average of children 12 to 23 months per household (0.2), we should be able to find the 113.8 children 12 to 23 months by visiting the same **798** households.

**Sample size strata 2 – resident population**

**Children 0 to 11 months**

For the sample size calculation in children 6 weeks to 11 months in the IDP camps, an expected vaccination coverage of 0.65, an alpha error of 0.05 (confidence level of 95%), and a precision of 10% will be used. The total sample size for this strata will be 87.4 children.

Based on a reported average household size of 7 with 3% of population of age 6 weeks to 11 months, we can expect on average a frequency of 0.2 children per household. The expected response rate will be 10%.This will result in 463 households to visit.

All the parameters considered are based on the findings of the recent survey (April 2023, in Bulengo and Lushagala) and findings from previous surveys in Eastern DRC.

**Children 12 to 23 months**

Considering the same parameters as above and assuming that will expect the same average of children 12 to 23 months per household (0.2), we should be able to find the 87.4 children 12 to 23 months by visiting the same 463 households

## 7.2. Sampling procedure

The sampling units will be shelters in the IDP camps and houses in the resident areas. The number of shelters to visit in each IDP camp and health area are presented in the table 1. Shelters/houses to be visited will be randomly selected within a GIS spatial sampling frame consisting of shelter/house centroids in the camps and resident areas identified through satellite imagery taken on or after 10 April 2024.

In the selected shelter/houses, all eligible children aged 6 weeks to 23 months who are part of the household will be included and the respondent will be the mother or the guardian/caretaker to child. All the children who fulfil the eligibility criteria and living in that household will be included no matter the relation with the other members.

**Tableau 1. Distribution of household to visit per IDP camp and health are**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Estimated number of shelters** | **Estimated Population** | **N=759 HH** | **Shelters to Visit**  |
| IDP camps |
| Bulengo | 18,664 | 67,190 | 20% | 155 |
| Lushagala | 8,536 | 30,730 | 9% | 71 |
| Buhimba + Mabanga | 13,234 | 47,642 | 14% | 110 |
| SamSam | 6,688 | 24,077 | 7% | 56 |
| 8e CEPAC | 5,053 | 18,191 | 6% | 42 |
| CBCA + REGO | 7,739 | 27,860 | 8% | 65 |
| Lwashi | 4,016 | 14,458 | 4% | 34 |
| Shabindu | 13,858 | 49,889 | 15% | 115 |
| Elohim | 1,636 | 5,890 | 2% | 14 |
| Lushagala Extension | 12,252 | 44,107 | 13% | 102 |
| **TOTAL** | **91,676** | **330,034** |  | **798** |
| Health Areas  |   |   | N= 462 HH |   |
| Buhimba |   | 18339 | 0.29 | 134 |
| Mugunga |   | 45023 | 0.71 | 329 |

**Selection of shelters in the IDP camps**

In each IDP camp, the number of shelters in the table 1 will be selected randomly from the existing GIS sampling frame, containing a point (centroid) for each shelter identified from satellite imagery. The location of shelters will be found using the mobile application OsmAnd. If no head of household is available, the teams will revisit the point at least 2 additional times during the course of data collection and if still absent the form will be completed as ‘’*non responding’.* No replacement of shelters will be done in the IDP camps and a selected shelter will be considered individually for the population estimate. For the vaccination coverage, all the children aged 6 to 23 months living in other shelters who are part of the same household as the sampled shelter, will be interviewed.

Teams will conduct a brief questionnaire with the head of household and data will be collected using a standardized questionnaire on a mobile device. Information to collect will include:

* Total number of people in the household (Household members should be counted even if not present; teams will be provided guidance on obtaining accurate counts during discussion with the head of household. The data will be used to estimate the household size and distribution by age group, which will be combined with the number of shelters (identified from satellite images) to arrive at a total population estimate).
* Age of each person
* Number of eligible target population (Children aged from 6 weeks-23month)
* Vaccination status on DTP1 and DTP3 for each eligible children (any child aged 6-23 who has received the 3 doses of this vaccine on the left thigh is completely vaccinated (for DTP) and eligible child who has never received at least one dose of this vaccine should be consider as zero dose)

**Selection of households in the resident community (health areas)**

In the resident population, we shall use the same approach described above for IDP camps within, except for compound/building with two or more households. In that case the household will be numbered from 1 to x on small papers and one will be selected randomly and visited.

A household found in a compound will be included even if the respondent identifies her/himself as an IDP. If a family hosts another family of IDP, they will be included in the household roaster and all the eligible children for vaccination coverage interviewed, if they all identify themselves as a single household (according to the definition abovementioned).

In the case that the GIS sampling frame for the resident area is not ready by the time of the survey an alternative sampling approach will be used: GPS points will be randomly selected within the polygon of the resident areas (in this case they will not necessarily correspond with houses and they may fall in empty areas, like streets, fields, etc.). The interviewers will place themselves in the given GPS positions, once there, they will identify the house/compound that is closest to them, and that will be the house to be visited (in this case they will only consider houses, not schools, shops, etc.). Once the house/compound has been identified the procedure explained above will be followed (i.e. if more than one household is living in the compound, one will be selected randomly to be identified). To reduce the bias selection towards the less densely populated areas (inherent to this sampling approach) points with no houses in a radius of 15 metres will be discarded and replace by other points

# 8. DATA COLLECTION

The survey will be implemented by 6 teams of two interviewers each, who will need a maximum of 9 days to visit all the 1221 households. That means that every day, each team will visit an average of 25 GPS points. The 6 teams will be directly supervised by the PIs.

The purpose of the survey will be explained by the study interviewerstothe camp management team on the day of the survey before conducting interviews.

In the households randomly selected according to the above methodology, the interviewer team will explain the purpose of the survey to the head of the household/survey participant or the parents/guardians/caretakers in the language he or she is familiar with and verbal consent will be obtained to conduct the interviews and documented on the questionnaire. All refusals will be recorded and those forms retained to document participation rate.

All children in the identified households in the target population will be included in the survey, including in the final household sampled, even if this exceeds the total target of children in the IDP camps or the health areas.

A standardized pre-piloted questionnaire will be used to collect the following data for each child of the cohort at recruitment:

* Demographic data: age, sex, number of children in the household
* Vaccination status: verbal and card confirmation

# 9. DATA ENTRY AND ANALYSIS

Two Smart phone applications will be use:

* OsmAnd : for household and Shelters identification
* Kobo-collect: for data entry.

Data will be entered into Kobo Collect forms on smartphones by the interviewers and will be uploaded daily on the MSF KoBoToolbox server (hosted by MSF Brussels). Data cleaning will be done to check for inconsistencies in data entry and responses. Data analysis will be conducted using R studio version 3.3.0.

No name-related data will be collected during the survey, reducing the risk that participants will be identifiable after the survey has been completed. An electronic database will be generated from the paper questionnaires and this database will be password protected. The electronic database will be stored at the MSF Headquarters or country management level for 5 years after the survey. Access to the electronic version of the survey will be restricted to the co-investigators of the study and the Medical Coordinator.

|  |  |
| --- | --- |
| In what format will questionnaire data be captured (e.g. paper, electronic)? | Electronic questionnaire |
| How will data security of the questionnaires be assured? | the databases will be password protected and only the study research team will have access to them |
| How will the data quality of the questionnaires be assured? | Intense training and close supervision will be provided. In addition, we will test all the questionnaires through a pre-survey session to check the consistency between the data collected (database) and the electronic questionnaires. |
| How will the questionnaire data be transposed into a database (e.g. entry into Epidata, automatic transfer from electronic format)? | Automatic transfer from electronic format to Excel, from KoBo then analyse using R. |
| What roles are involved in data protection (specify all roles from field to office)? | At field level and headquarters level, the Principal Investigator and Study Coordinator, respectively, will be responsible.  |

The main outcome of the analysis will be the overall vaccination coverage for DTP1 and DTP3. All indicators (i.e. sex and age of the survey population) will be calculated as proportions with 95% confidence intervals (95%CI). Where appropriate, differences in proportions will be measured using Pearson χ2 test and p-value (p) will be presented.

# 10. ETHICAL PRINCIPLES

The survey will be conducted in accordance with the Council for International Organisations of Medical Sciences (CIOMS) International Ethical Guidelines for Biomedical Research Involving Human Subjects[[5]](#footnote-6) and International Ethical Guidelines for Epidemiological Studies[[6]](#footnote-7).

The MSF Ethics Review Board approved the standardized survey protocol used in this study. The MSF-OCA Medical Director determined that this survey meets the MSF Ethics Review Board’s criteria exempting it from further review by the MSF ERB. It will also be submitted locally to the ethical review board of the DPS, the office of health ethics ( le bureau d’éthique de la santé).

Authorities and communities (such as camp management, bloc leaders, and Aire de Santé authorities) in the survey area will be informed about the purpose of the survey. An information sheet will be provided and their endorsement will be sought. Community engagement shows respect to the community and should improve survey content relevance and enhance security for both survey staff and participants.

MSF-OCA commits to sharing survey results with everybody who has participated in the survey. The local community will be involved and informed through sharing of the end of survey report with the BCZ as well as production of summary of the survey report translated into Swahili and shared with community leaders. The MSF medical team will decide about the best venues to display the results.

The MSF Medical Coordinator for the Goma Emergency mission will advise the study team on the emergency and non-emergency referral practices when finding sick people in the study population, and whether to refer unvaccinated participants to a specific health structure to receive missed vaccines or advise them to attend in further phases of the vaccination campaign.

The Principal Investigator is overall responsible for ethical compliance of the study. Participant privacy will be respected during the interviewing process. Staff will be trained in how to assess for appropriate conditions to help maintain confidentiality during the interview process, including choosing the optimal location when a setting makes privacy difficult (e.g. single room dwelling)

## 10.1. Verbal consent form

Verbal consent will be sought from every household, with the designated head of household answering the questionnaire for all relevant members of the household. He/she may choose to delegate answering the questionnaire to another member of the household, or to individuals regarding their own vaccination status if relevant.

Privacy and confidentiality in the data collected from the participants will be ensured both during and after the conduct of the surveyAny data that could be combined with other data sources to make individual records potentially identifiable will not be distributed outside the survey location, or appear in any report or publication. All participants included in the survey will have the survey activity explained to them in a language with which they are familiar. Everyone will be offered the opportunity to refuse participation in the survey at any time without penalty and no incentives or inducements will be provided to any respondents. Everyone approached for the survey is completely free to participate or not.

## 10.2. Risks and benefits of the study and contingency plans

The vaccination coverage survey does not cause any physical harm to the participants. Nevertheless, asking respondents for personal information can seem intrusive and in post-conflict and IPP camp contexts, confidentiality can be limited. Using local staff and extensive training in interview techniques can mitigate this.

There is also a risk for communities of breach of confidentiality and/or stigmatization and/or harm perpetrated by hostile actors at the community level. However, benefits can be seen at both the study participant level and the community level. A better understanding of vaccination coverage ratios and causes of non-vaccination in the area will allow for better adapted programming and more efficient use of resources. Accurate data on vaccination status are of tremendous importance for advocacy at national and international levels.

An external threat could be security issues due to an unstable environment, which could lead to the exclusion of parts of the study area. Due to the inability to foresee or end security issues, the team will closely monitor to ensure that appropriate steps are taken to secure team members in the event of any issues of insecurity.

# 11. COLLABORATION

This survey will be carried out in collaboration between MSF-OCA, DPS, BZC, PEV and the Aires de Santé of Mugunga and Buhimba, Goma DRC. MSF-OCA is the sponsor of the study and is responsible for funding. MSF-OCA will work with experienced interviewers from its pool of data collectors who will carry out data collection under MSF-OCA supervision. MSF-OCA data and research teams will be responsible for data analysis and report writing. Permission to publish must be obtained from MSF-OCA and the Ministry of Health. Survey results will belong to MSF-OCA and the DRC Ministry of Health.

# 12. IMPLEMENTATION OF THE SURVEY IN THE FIELD

## 12.1. Selection and tasks of the survey teams

This survey will take place in May 2024 and will be implemented by 6 teams composed 2 members each and 2 supervisors. They will be assigned the number GIS special frames to visit prior to the date of the survey implementation.

A training will be organized before the survey with a practical exercise which would allow identifying questionnaire issues and ensure the way to complete the questionnaire is fully understood by the teams.

**General selection criteria for all investigators are:**

* Know how to read and write in French (Minimum State Diploma)
* Fluent in the local language (Swahili), AND
* Available for the whole duration of the survey (training and interview days), AND
* Willing and able to work Saturdays for the duration of the survey, AND
* Motivated to participate in the survey, AND
* Have no known conflict of interest, AND
* Experience of interviewing in difficult contexts would be an advantage.

## 12.2. Supervision

The principal investigator is the overall responsible for the final version of the protocol, the quality of the research, the data analysis and report writing.

The principal investigator will ensure that the following tasks are performed:

* Preparation of all necessary documents (protocol, questionnaires) for the survey
* Secure the necessary local approvals (including that of the local ethics committee if needed)
* Preparation of the field component of the survey (training of the study teams, logistics, materials) together with the MSF team in the field
* Follow-up of the field component of the survey
* Data entry or training of a data entry clerk
* Data quality checking and analysis
* Report writing
* Ensuring ethical compliance during implementation of the study through supervision and training

## 12.3. Suggested MSF support in the field

* Technical and administrative support for the preparation of the survey and during the field part, such as the supervision of the remote teams, the payment of the survey teams and the reservation of accommodation for the surveyors;
* Human resources support, such as hiring survey team members;
* Logistical support for the preparation of the survey training and during the field part such as the supply of smartphones, the printing of the random number tables, the facilities for the training days, the supply of water and lunch where appropriate.

## 12.4. Training of the survey team and pre-testing of the questionnaires

A four-day training will be provided to all interviewers to familiarize them with the survey context, the questionnaire and the information to be provided to survey participants or their parents/guardians. The training will be provided in French and enriched in the local language (Swahili). The training consists of an in-depth review of the questionnaires and information to be provided to survey participants or their parents/guardians and would include role-playing. As interviews will be conducted in the local language, the lead interviewer will ensure that all interviewers use the same correct wording when providing information to households and for interviews.

The theoretical training will be 3 days followed by 1-day practical training (pre-survey: a pilot survey) in a place outside the survey area. The pilot survey makes it possible to test and possibly adapt the questionnaires to field conditions.

## 12.5. Timeframe in the field

**Table 2** Preliminary plan of the field part of the vaccination coverage survey, *GOMA project, region, DRC, Africa, 2024*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 2024 | Day | Nr. of days | To do |
|  |  |  |  |
|  | *1st -5May* | *5* | Draft protocol and budget |
|  | *6-10 May* | *5* | Validation of protocol and budget |
|  | *10 May*  | *1* | Validation of questionnaire |
|  | *14-26 May*  | *12* | ERB Approval |
|  | *16-17 May*  | *2* | Mapping and household selection  |
|  | *8-10 May* | *4* | pre-test of GPS point with OsAmand applocation |
|  | *18-20 May* | *3* | Household information |
|  | *18-19 May* | *2* | Finalization and testing of tools |
|  | *13-14Jun* | *1* | Orde of survey training materials |
|  | *10Jun* | *1* | Recruitment of Enumerators and sup |
|  | *22-24 May* | *6* | Enumerators training |
|  | *24 Jun* | *1* | Preparation of household lists |
|  | *24 Jun* | *1* | Selection of households to be surveyed |
|  | *27May -5Jun* | *10* | Household survey |
|  | *27May -5Jun* | *10* | Receipt and checking of forms |
|  | *27May-5Jun* | *10* | Debriefing |
|  | *3 Jun - 6 Jun* | *4* | Data analysis |
|  | *6 Jun*  | *1* | Presentation of results |
|  | *5Jun -7Jun* | *3* | Report preparation |
|  | *8-9Jun*  | *2* | Share final report |
|  |  |  |  |
|  |  |  |  |
|  |  | Total: *42* days |

# 13. LOGISTIC

## 13.1. Supply needed

See table 3 for a list of required supplies.

Vaccination coverage questionnaires will be developed by the principal investigator. Photocopies of all necessary documents will be done in *Goma.*

A computer data entry form will be prepared by the principal investigator.

**Table 3** Supplies needed for the field part of the vaccination coverage survey, *GOMA project, region, DRC, Africa, 2024*

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Item | No. neededper team | No. needed for teams (Including supervisors) |
|  |  |  |
| Back pack | 1 | *14* |
| Smart phone | 1 | *8* |
| Pencil | 2 | 14 |
| Eraser | 2 | 14 |
| Pens | 2 | 14 |
| Vest/bib with MSF logo | 2 | 14 |
| Plastic folder (for protection of questionnaires against rain and dust) | 1 | 9 |
|  |  |  |

## 13.2. Transport needed

3 vehicles and 3 drivers be made available throughout the survey period. Supervisors can either join these movements. The survey teams will be dropped in their respective villages in the morning to work for the day and again collected in the evening.

# 14- APPENDIX:

* Budget
* Chronogram
* Questionnaire
* Consent Paper
* Information Sheet



1. https://www.worldbank.org/en/country/drc/overview [↑](#footnote-ref-2)
2. https://www.cfr.org/global-conflict-tracker/conflict/violence-democratic-republic-congo [↑](#footnote-ref-3)
3. DEMOCRATIC REPUBLIC OF THE CONGO, Improving aid coordination in the health sector

https://apps.who.int/iris/bitstream/handle/10665/186673/WHO\_HIS\_HGF\_CaseStudy\_15.4\_eng.pdf?sequence=1 [↑](#footnote-ref-4)
4. Note that WHO guidance on sampling has been updated since the 2005 Coverage Cluster Survey: Reference Manual – Please refer instead to Annex B1 of the 2015 reference manual (footnote 4 below) [↑](#footnote-ref-5)
5. Council for International Organizations of Medical Sciences (CIOMS). International Ethical Guidelines for Biomedical Research Involving Human Subjects. CIOMS Geneva 2002. http://www.cioms.ch/index.php/publications/printablev3/541/view\_bl/65/bioethics-and-health-policy-guidelines-and-other-normative-documents/19/international-ethical-guidelines-for-biomedical-research-involving-human-subjects?tab=getmybooksTab&is\_show\_data=1 (accessed July 13, 2023). [↑](#footnote-ref-6)
6. Council for International Organizations of Medical Sciences (CIOMS). International Ethical Guidelines for Epidemiological studies. CIOMS Geneva 2009. <http://www.cioms.ch/index.php/publications/printablev3/541/view_bl/65/bioethics-and-health-policy-guidelines-and-other-normative-documents/47/international-ethical-guidelines-for-epidemiological-studies?tab=getmybooksTab&is_show_data=1> (accessed July 13, 2023) [↑](#footnote-ref-7)