Vaccination coverage survey for diphtheria, Streptococcus pneumoniae, polio and tetanus in Rohingya refugee settlements in Ukhiya and Teknaf Upazilas, Cox's Bazar, Bangladesh

Vaccination coverage survey for ~~measles, cholera and polio~~diphtheria, Streptococcus pneumoniae, polio and tetanus in ~~Balukhali and Kutupalong~~Rohingya refugee settlements in Ukhiya and Teknaf Upazilas, Cox's Bazar, Bangladesh

---

Study protocol

27~~09~~.12.2017

Version 1

Monique Pereboom, Field Epidemiologist, MSF-OCA
John Guzek, Field Epidemiologist, MSF-OCA

First version	~~12~~27.12.2017
Study design	Age stratified simple random sampling
Study type	Retrospective prevalence survey
Study participants	~~Measles~~Diphtheria (pentavalent): Children aged 6 ~~months~~ weeks to ~~15~~6 years ~~Cholera~~Diphtheria and tetanus (dT): Children aged 7~~0~~ to 15~~59 months~~years Polio: Children aged 6 weeks to 6 years Streptococcus pneumoniae: Children aged 6 weeks to 6 years~~0 to 59 months~~
Study period	~~December~~ December 2017 – January 2018~~2017~~
Study site	Balukhali and Kutupalong settlement camps, Cox's Bazar, Bangladesh
Principal investigator	Monique Pereboom, EPIET field epidemiologist, MSF-OCA Email: cxb-epi2@oca.msf.org
Co-investigators	Kate White, Emergency Health Manager, MSF-OCA Crystal Van Leeuwen, Emergency Medical Coordinator, MSF-OCA Ruby Siddiqui, Epidemiology Advisor, MSF-OCA John Guzek, Field epidemiologist MSF-OCA Mitchell Sangma, Medical Coordinator, MSF-OCA Ministry of Health

CONTENTS

LIST OF ABBREVIATIONS

CFR	Case Fatality Ratio
dT	Diphtheria and tetanus vaccine
EPI	Extended Programme of Immunization
95% CI	95% confidence interval
MVC	Mass Vaccination Campaign
MoH	Ministry of Health
MSF	Médecins sans Frontières
MSF-OCA	Médecins sans Frontières – Operational Centre Amsterdam
NID	National Immunization Day
~~OCV~~	~~Oral cholera vaccine~~
bOPV	Bivalent ~~O~~oral poliovirus vaccine
PCV	Pneumococcal conjugate vaccine
Penta	Pentavalent
SIA	Supplementary Immunization Activities
UNICEF	United Nations International Children's Emergency Fund
VCS	Vaccination coverage survey
WHO	World Health Organization

1. INTRODUCTION

1.1. COUNTRY INFORMATION

Balukhali, Balukhali 2, ~~and~~ Kutupalong, Thangkhali, Moynarghona, Jamtoli, Hakimpara and Unchiprang settlement camps are situated in Ukhiya Upzila, Cox's Bazar, Bangladesh. In this protocol we refer to the settlements collectively, as Rohingya settlement camps. The settlements are home to over 600,000~~492,000~~ Rohingya refugees, the majority of whom were displaced following the recent violence in Rakhine State, Myanmar. In total, it is estimated that 640,000 Rohingya have arrived in Bangladesh since 25th August 2017.

The living conditions in the settlements are poor, with very high population density and poor water and sanitation conditions. Furthermore, vaccination coverage in the population appears to be low, with few, if any,~~23.2% of~~ children under the age of 5 years reportedly vaccinated for ~~measles~~ diphtheria (pentavalent) according to ~~in~~ a recent health survey. This low vaccination coverage, together with the dense living conditions, provide a context of high risk for communicable disease outbreaks. Indeed, a large-scale ~~measles~~ diphtheria outbreak is currently taking place in the settlements, with over 2,~~0~~100 suspected cases presenting to MSF health facilities between epi weeks 45~~39~~ and 45~~29~~. ~~In addition, a diphtheria outbreak commenced in the settlements in epi week 48.~~

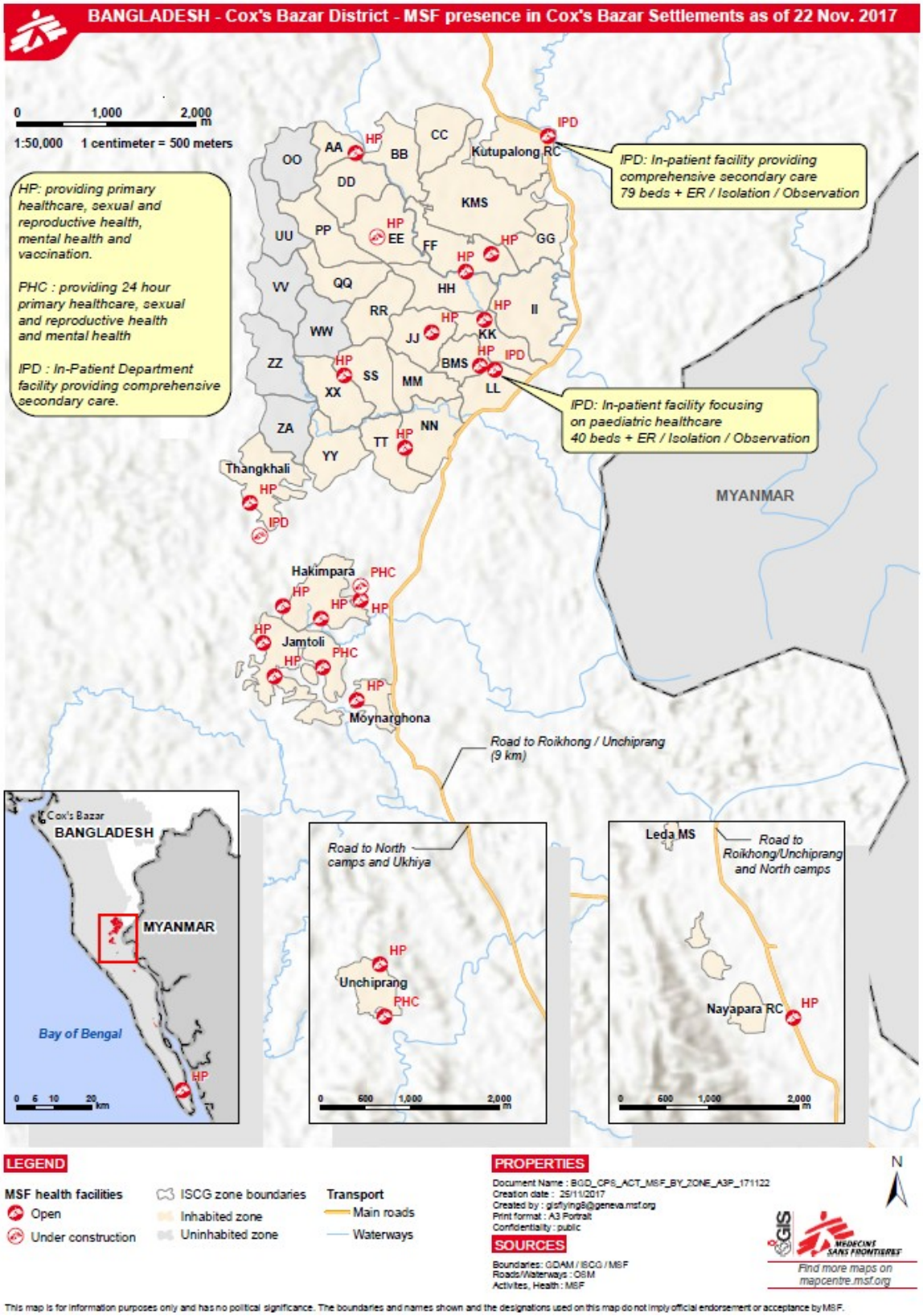

Figure 1 Refugee settlements in Cox's Bazar, Bangladesh

1.2. ~~*MEASLES*~~ *DIPHTHERIA, PNEUMONIA, POLIO AND TETANUS*~~*CHOLERA AND POLIO*~~ IN THE ROHINGYA POPULATION

Vaccination coverage for the Rohingya population is low, with a recent health survey in Balukhali and Kutupalong settlements reporting that no children~~23.2% of children~~ aged <5 years were vaccinated for ~~measles~~diphtheria (pentavalent) and 2.3% had received the PCV vaccine. Polio vaccination coverage is higher, with 49.9% in children aged <5 years vaccinated~~, and cholera vaccination coverage is 68.3% amongst children aged <5 years of age~~. ~~Cholera and p~~Polio vaccination coverage is higher due to a recent mass vaccination campaign which targeted children <5 years of age for polio. However, health survey estimates of the vaccination coverage are likely to be underestimated as the survey took place during the second round of these vaccination campaigns.

~~Between 12 November and 6 December, a~~A large-scale ~~measles~~ diphtheria, polio, PCV and tetanus vaccination campaign ~~took place~~is currently taking place, commencing 12 December, in response to the ~~measles~~ diphtheria outbreak, and was implemented by the Ministry of Health (MoH), with support from the World Health Organisation (WHO) and the United Nations International Children's Emergency Fund (UNICEF). The final campaign target~~ed~~ is not currently available to MSF. At the time of writing (27 December) the campaign had reportedly delivered 82,127 pentavalent, pneumococcal vaccine (PCV) and bivalent oral polio vaccine (bOPV) vaccinations to children aged 6 weeks to 6 years, and 82,163 dT vaccines to children aged 7 to 14 years in Ukhiya Upazila and 23,017 pentavalent, PCV and bOPV vaccines to children aged 6 weeks to 6 years, and 19,863 dT vaccines to children aged 7 to 14 years in ~~270,800 children aged 6 months to 14 years in Ukhiya Upzila and 66,143 in~~ Teknaf.

In the early months of the displacement in to Bangladesh, there was little organisation and no formal reception centre and therefore no Extended Programme of Immunization (EPI) was available for the population. Hence, the risk of further outbreaks remains high, in addition to the current measles and diphtheria outbreaks in the settlements.

2. RATIONALE

A vaccine coverage survey (VCS) is proposed to

a) *document the impact of the mass ~~measles~~ diphtheria vaccination campaign in the settlements, in order to understand the current phase of the ongoing outbreak and assess future outbreak risk;*

b) *document the impact of the ~~recent~~ concurrent ~~Oral cholera vaccine (OCV) and~~ bivalent oral poliovirus vaccine (bOPV) and Pneumococcal conjugate vaccine (PCV) vaccination campaigns in order to understand future outbreak risk;*

Accurate vaccination coverage is needed to measure the likely impact of vaccination campaign interventions on the ~~epidemic~~ outbreak and to allow for appropriate calculation of vaccine effectiveness in post-vaccination cases.

3. OBJECTIVES

3.1. PRIMARY OBJECTIVES

a) *To describe the vaccine coverage (penta / dT) in children aged 6 months to 14 years for ~~measles~~ diphtheria in ~~Balukhali and Kutupalong~~the Rohingya Settlement Camps;*

3.2. SECONDARY OBJECTIVES

- *To describe the vaccine coverage of pentavalent, bOPV and PCV ~~oral polio~~ vaccine~~s and oral cholera vaccine~~ in children ~~under~~ aged 6 weeks to 6 years~~5 years~~ of age in ~~Balukhali and Kutupalong~~the Rohingya Settlement Camps;*
- *To describe the vaccine coverage for ~~measles~~ diphtheria and tetanus vaccination~~, oral polio vaccination, and oral cholera vaccination~~ among 7 - 14~~15~~ year olds to assess ~~over-~~vaccination rates in this age-group in ~~Balukhali and Kutupalong~~the Rohingya Settlement Camps*

4. SURVEY DESIGN

Vaccination coverage survey using

a) *simple random sampling, a method by which households are selected by chance*

Determination of vaccine status will be done by interview, examination of individual vaccination cards which record EPI vaccinations for those under 5 years of age, recent vaccine ink markings of fingers (if evidence of marking persists) and verbal reporting of vaccination status.

5. TARGET POPULATION

All *people* living in households in ~~Kutupalong and Balukhali~~the Rohingya Settlement Camps during the time of the survey will be candidates to be included.

5.1. INCLUSION AND EXCLUSION CRITERIA

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

- Living in the randomly selected household *(see chapter 6.1. for the definition of a household)*

and

- Informed consent has been given *(see chapter 9.1. for details on the informed consent)*

and

- The person interviewed is ≥18 years of age

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

or

- No household member is ≥18 years of age

6. DEFINITIONS

6.1. HOUSEHOLD DEFINITIONS

Definition of household

A household will be defined as a group of people who *slept under the same roof the previous night*. All members of the household meeting the age inclusion criteria will be included, no matter the relation with the other members of the household.

Definition of head of household

The head of household is defined as follows:

- adult household member ≥18 years, *and*
- who can give accurate information on all demographic issues in his/her household *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 of these criteria.

6.2. VACCINATION DEFINITIONS

~~*Following definitions are typically used for measles vaccine coverage studies. They need to be adapted to the disease and context of the survey.*~~

~~*Measles*~~ *Diphtheria Mass Vaccination Campaign (MVC)*

- *MVC-Vaccinated by card*
  - *An individual aged 6 ~~months~~ weeks to ~~14~~ 6 years who received one dose of ~~measles~~ pentavalent ~~containing~~ vaccine ~~during the measles MVC~~OR~~:~~ an individual aged 7 to 14 years who received one dose of dT vaccine during the diphtheria MVC. This is confirmed on interview by a marked finger or presentation of a vaccination card*
- *MVC-Vaccinated by verbal confirmation*
  - *An individual aged 6 weeks to 6 years who received one dose of pentavalent vaccine OR an individual aged 7 to 14 years who received one dose of dT vaccine during the diphtheria MVC. ~~An individual aged 6 months to 14 years who received one dose of measles containing vaccine during the MVC.~~ This is confirmed on interview by verbal history of the participant or his/her parents/guardians/caretakers, but without verification using marked finger or vaccination card.*
- *MVC-Not vaccinated*
  - *An individual aged 6 weeks to ~~months to~~ 14 years who had no written vaccination record. This is confirmed on interview by the participant or his/her parents/guardians/caretakers stating that no ~~measles~~ diphtheria vaccination was received.*
- *MVC-Unknown*

- *An individual or his/her parents/guardians/caretakers do not recall if the survey participant was vaccinated during the MVC AND there is no marking of the finger suggesting that the vaccination took place nor any other available proof (i.e. health passport).*

~~*OCV (Mass Vaccination Campaign)*~~

- ~~*OCV-Vaccinated by card*~~
  - ~~*An individual aged <5 years who received one dose of cholera containing vaccine during the OCV. This is confirmed on interview by a marked finger or presentation of a vaccination card*~~
- ~~*OCV-Vaccinated by verbal confirmation*~~
  - ~~*An individual aged <5 years who received one dose of cholera containing vaccine during the OCV. This is confirmed on interview by verbal history of the participant or his/her parents/guardians/caretakers, but without verification using marked finger or vaccination card.*~~
- ~~*OCV-Not vaccinated*~~
  - ~~*An individual aged <5 years who had no written vaccination record. This is confirmed on interview by the participant or his/her parents/guardians/caretakers stating that no measles vaccination was received.*~~
- ~~*OCV-Unknown*~~
  - ~~*An individual or his/her parents/guardians/caretakers do not recall if the survey participant was vaccinated during the OCV AND there is no marking of the finger suggesting that the vaccination took place nor any other available proof (i.e. health passport).*~~

~~*OPV (Mass Vaccination Campaign)*~~

- ~~*OPV-Vaccinated by card*~~
  - ~~*An individual aged <5 years who received one dose of polio containing vaccine during the OPV. This is confirmed on interview by a marked finger or presentation of a vaccination card*~~
- ~~*OPV-Vaccinated by verbal confirmation*~~
  - ~~*An individual aged <5 years who received one dose of polio containing vaccine during the OPV. This is confirmed on interview by verbal history of the participant or his/her parents/guardians/caretakers, but without verification using marked finger or vaccination card.*~~
- ~~*OPV-Not vaccinated*~~
  - ~~*An individual aged <5 years who had no written vaccination record. This is confirmed on interview by the participant or his/her parents/guardians/caretakers stating that no measles vaccination was received.*~~
- ~~*OPV-Unknown*~~
  - ~~*An individual or his/her parents/guardians/caretakers do not recall if the survey participant was vaccinated during the OPV AND there is no marking of the finger suggesting that the vaccination took place nor any other available proof (i.e. health passport).*~~

Total Number of doses

- The total number of doses received in the lifetime of the surveyed person will be recorded, per verbal or written documentation. This includes doses received through mass vaccination campaigns (MVC), routine vaccination and Supplementary Immunization Activities (SIAs).

7. SAMPLE SIZE AND SAMPLING

7.1. SAMPLE SIZE CALCULATION[1]

For the sample size calculation, an expected vaccination coverage of ~~23%~~ 75%, an alpha error of 0.05 (confidence level of 95%), a precision of 5% and a design effect of 1 will be assumed. 75% was used as a conservative estimate of vaccination coverage achieved by the MVC based on the number of vaccinations administered at the time of writing (164,289) in Kutupalong and Balukhali settlements and population estimates from an MSF population count conducted in October 2017. This estimate was used based on the a lack of any other data on which to as a basis for base the sample size calculations. The total sample size for the age group of children 6 ~~months~~ weeks to 14 years of age will be 2~~72~~88.

Table 1 : Sample size calculations for ~~measles~~ diphtheria coverage studies after ~~measles~~ diphtheria **vaccination campaigns (MVCs)**

Criteria	
Expected vaccination coverage	~~23~~75%
Confidence level	95%
Design effect	1
Precision	+ / - 5%
No. children to be sampled	288~~72~~
Proportion of the population in target age group (%)	46%
Average household size	5.1
Proportion non-response households	10%
No. households to be sampled	13~~61~~

Sample size was calculated with the help of “OpenEpiMenu"[2].

Based on a reported average household size of 5.1 with 46% of the population aged 6 ~~months~~ weeks to 14 years, we can expect on average a frequency of 2.3 children aged 6 months to 14 years per household.

To include 288~~72~~ children under 1~~4~~5 years of age, 13~~1~~6 households need to be included in each survey. In total, ~~five~~ nine surveys will be performed, in Balukhali (Makeshift Camp, Balukhali and Expansion), Balukhali 2, Kutupalong (Makeshift Camp, Kutupalong and Expansion), Kutupalong Registered Camp, Thangkhali, Moynarghona, Jamtoli, Hakimpara and Unchiprang~~Balukhali Makeshift Settlement, Balukhali Expansion, Kutupalong Makeshift Settlement, Kutupalong Expansion and the Kutupalong Refugee Camp~~. Conducting the survey in nine~~four~~ areas we will require ~~655~~ 1,224 household interviews.

7.2. SAMPLING PROCEDURE

Simple random sampling of households will be carried out using randomly-generated GPS coordinates. Using GIS or conducting a perimeter walk around the study area, an electronic outline of a village can be replicated in software such as Google earth or Epop[3]. Using this

[1] 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)
[2] http://www.openepi.com/Menu/OE_Menu.htm (accessed June 16, 2015)
[3] Epop population estimation software, Epicentre (v0.1.0.343 viewed 7th March 2017)

outline, the software can create random points within this perimeter corresponding to the number of households that need to be visited inside that area. Teams using either GPS receivers or android phones with GPS localisation functionality, will visit the households that are identified to be physically closest to randomly generated GPS points and interview these households. This does create a bias as households in rural areas, with large distances between households, are more likely to be selected than householdls in densely packed urban areas. However in this setting where the distances are fairly similar, the bias becomes negligible.

If for unforeseen reasons a selected household cannot be visited, it will be replaced by the household at another randomly-generated GPS coordinate. This will be reported as a limitation of the survey.

8. DATA COLLECTION

The survey team, with support from community volunteers, ~~will inform community leaders about the purpose of the survey before interviews are conducted. If there are instances where the community has very recently arrived and no community leader is yet in place, or the community leader cannot be located,~~ will explain the purpose of the survey ~~will be explained~~ to the head of the household in the language in which s/he is familiar. It will be clearly explained to the heads of households during the consent process, that they are freely allowed to decline participation without any consequences or penalty. If the head of household agrees, oral consent will be obtained to conduct the interviews (see section 10.1. for details on the informed consent form). If s/he declines to participate this will be accepted, written down and the next household approached; the number of household refusals should be noted and a household participation ratio included in the study report.

All people in the target age groups for each vaccination in the identified households in the target population will be included in the survey, including in the final household of a cluster, even if this exceeds the total target of children for the cluster.

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
- Reasons for non-vaccination
- History of disease

9. DATA ENTRY AND ANALYSIS

Data will be entered into ~~EpiData~~ the web application Dharma (an online-survey tool) by the study investigators if collected on ~~paper formssmart~~ phones. If collected electronically, databases will be automatically generated ~~so EpiData will not be needed~~in a Microsoft Excel csv. database. All data will be anonymised (names are not being collected) and electronic files stored password-protected by MSF. Only study investigators will have access to these data files. Data cleaning will be done to check for inconsistencies in data entry and responses. Data analysis will be conducted using STATA 13 (StataCorp, College Station, TX, USA).

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 paper versions of the questionnaires (paper versions) and the electronic database will be stored at the MSF Headquarters or country management level for 5 years after the survey. Access to the electronic and paper version of the survey will be restricted to the co-investigators of the study and the Medical Coordinator. After 5 years the paper copies of all the questionnaires will be destroyed.

The main outcome of the analysis will be the overall vaccination coverage in each relevant age group. Secondary outcomes will be the percentage of people in the target age group vaccinated by each vaccination campaign and reasons for non-vaccination. All indicators (i.e. sex and age of the survey population) will be calculated as proportions with 95% confidence intervals (95%CI). Estimates of actual design (cluster) effect will also be calculated for each variable and those with effects greater than 1 will be reported. Where appropriate, differences in proportions will be measured using Pearson $\chi 2$ 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[4] and International Ethical Guidelines for Epidemiological Studies[5].

The MSF Ethics Review Board approved the standardized survey protocol used in this study. The MSF-OCA Medical Director determined that this particular survey met the MSF Ethics Review Board's criteria exempting it from further review by the MSF ERB. It will also be presented locally for appropriate MoH approval.

Authorities and communities (such as village heads, religious leaders, opinion makers) 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 the distribution of posters that show the survey results in the health clinics. The MSF medical team will decide about the best venues to display the results.

The MSF medical responsible in the field will advise the study team on the emergency and non-emergency referral practices when finding sick people in the study villages, and whether to refer unvaccinated participants to a specific health structure to receive missed vaccines or advise them to attend any mop-up campaign that might be offered.

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

[4] 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

[5] 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

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 survey. Participant names will not be recorded on questionnaires, and individual person records will be linked only to a household number throughout the data entry and analysis process. Any 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 participants. Nevertheless, asking the interviewees about personal information may feel intrusive and in village contexts there may be limited privacy. Using local staff and careful training on interview-techniques can mitigate this.

There is also the risk to communities of breach of confidentiality and/or stigmatisation and/or harm perpetrated by hostile actors at community level.

However, benefits can be seen both at the study participant level and at the community level. A better understanding of the vaccination coverage ratios and causes of non-vaccination in the area will allow better tailored programming and more efficient use of resources. Accurate data on vaccination status are of tremendous importance for advocacy on national and international level.

11. COLLABORATION

This survey will be carried out by MSF-OCA, MSF-OCP and MSF-OCBA.

MSF-OCA, MSF-OCP ad MSF-OCBA are~~is~~ the study sponsors and are~~is~~ responsible for the funding. ~~It~~ They oversee~~s~~ the field part of the survey, the analysis and report writing.

Survey results will belong to MSF-OCA and the MoH of Bangladesh, the country where the survey will be conducted.

A final report will be disseminated within 2 weeks of completion of the study.

Abstract submission for conferences/external meetings will be led by the principal investigator and based on the concept paper and protocol (if appropriate)

Results will be communicated to the community via posters in MSF clinics.

12. IMPLEMENTATION OF THE SURVEY IN THE FIELD

12.1. SELECTION AND TASKS OF THE SURVEY TEAMS

The task of the interviewers will be to collect the necessary data for the survey.

Each survey team is composed of two interviewers. To finalise the field part in a reasonable time we need 10 survey teams of two people each for each participating MSF sectionMSF OCA, MSF OCBA, and for MSF OCP (see also chapter 12.5.).

Usually 1 survey team can complete around 10 household interviews per day. Therefore with ~~1~~30 teams, ~~1~~300 households can be visited in one day and the total data collection period will be ~~6~~5 days.

General selection criteria for all interviewers:

- Able to read and write in English, and
- Fluent in the local languages Rohingya and Burmese, and
- Available for the ENTIRE time of the survey (training and interview days), *and*
- Motivated to participate in the survey, *and*
- Have no known conflict of interest, *and*
- Experience with interviews in difficult settings and survey populations 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

- Administrative support for survey preparation at the field level and during field part, such as payment of survey teams and preparation of survey documentation;
- Logistic support for survey preparation at the field level and during field part, such as transport for the study supervisor to and from the field.

12.4. TRAINING OF THE SURVEY TEAM AND PRE-TESTING OF THE QUESTIONNAIRES

One day of training will be given to all interviewers to familiarise them with the background of the survey, the questionnaires, and the information to be given to the survey participants or their parents/guardians/caretakers. The training will be given in English, with translation support for conveying any details not clearly understood during the training, by the principal investigator. It consists of an intensive review of the questionnaires and the information to be given to the survey participants or their parents/guardians/caretakers and should include role-plays. As the interviews will be held in the local language, the principal investigator should ensure that all interviewers are using the same and correct wording for providing information to the households and for the interviews.

The ~~2-days~~ training will be finished with a pilot survey in a place which is outside of the survey area. The pilot survey allows for the testing and possible final adjustment of the questionnaires to field conditions.

A 'training' meeting will be held with associated staff such as logisticians, community liaisons, drivers and data clerks to explain the overall study and their roles and expectations.

12.5. TIMEFRAME IN THE FIELD

See table 2 for a preliminary plan of the field part of the survey.

Table 2 Preliminary plan of the field part of the vaccination coverage survey, ~~Kutupalong and Balukhali Settlements~~Rohingya Settlement Camps, Cox's Bazar, Ukhiya upazilla, Bangladesh, 2017

Date [2017]	Day	Nr. of days	To do
~~11~~30/12/2017	~~Mon~~Sat	2	Final preparation of the survey
01~~13~~/01~~12~~/201	Mon~~Wed~~	1	Training including the pilot survey
02~~14~~/~~1~~012/201	Tue~~hur~~	~~6~~5	Field part
07~~21~~/~~12~~01/201	~~Thur~~Sun	2	Buffer days / debriefing
~~23~~09/01~~12~~/201	~~Sat~~Tue	2	Data analysis and report writing
		Total: 1~~3~~2 days	

13. LOGISTIC

13.1. SUPPLY NEEDED

Supplies for the conduct of the survey will be purchased via the ~~Kutupalong~~ relevant project supply logisticians. See table 3 for a list of required supplies.

Vaccination coverage questionnaires will be developed by the principal investigator.

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, ~~Kutupalong and Balukhali~~Rohingya Settlement Camps, Cox's Bazar, Ukhiya and Teknaf upazillas, Bangladesh, 2017

Item	No. needed per team	No. needed for 310 teams + three supervisors
GP-equipped smartphone	1	11330
Battery pack for smartphone	1	13310
Identification with MSF logo	2	23620
~~Plastic folder (for protection of questionnaires against rain and dust)~~	~~2~~	620
Backpack	1	13

13.2. TRANSPORT NEEDED

One car to transport the principal investigator to and from the study sites each day.