Meilleur Accès Aux Soins de santé (M.A. SANTE)
Siege :Yaoundé, BiyemAssi, face Wisdom Academic Complex
B.P.: 33.490 Yaoundé Cameroun Tel: +237222311647, 673931521; 655966326
Fax: +237222311647
E-mail: masante.pc@masante-cm.org; Site web:www.masante-cm.org)

ORAL CHOLERA VACCINE IMMUNIZATION CAMPAIGN (OCV)

MONITRING &EVALUATION PLAN

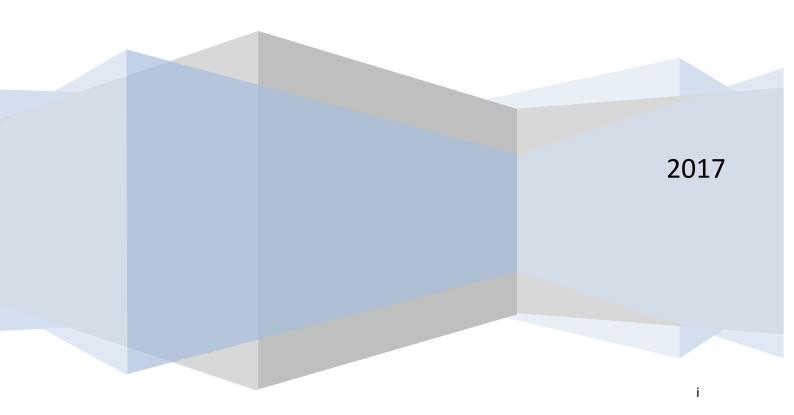**PI : Dr Jérôme ATEUDJIEU, MD, MPH, PhD**
Supervision : Pr David A SACK

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List of abbreviations

AEFI: Adverse Events Following Immunization

CFR: Case Fatality Rate

KAP: Knowledge, Attitudes and Practices

M&E: Monitoring and Evaluation

OCV: Oral Cholera Vaccine

SMS: Short Messaging System

WaSH: Water Sanitation and Hygiene

Involved team

- **Dr Jerome ATEUDJIEU, MD, MPH, PhD**

Projects coordination at M.A. SANTE; Senior lecturer of Epidemiology and public University of Dschad; Deputy Head of clinical research unit; Division of health operations Research Cameroon, ministry of public health
 Tel: 699701011
Email: jerome.ateudjieu@masante-cm.org

- **M. YAKUM Martin Ndinakie; MPH**
Monitoring and Evaluation officer at M.A. SANTE
Email: martin.yakum@masante-cm.org
Tel: +237694792362

- **Mlle TSAKAM Suzanne Valérie, MPH in community health**
Intern at M.A. SANTE
Tel: 696 17 80 37
Email: suzanne.tsakam@masante-cm.org

- **Mlle KANGMO SIELINOU Corine B., B. Sc, M. sc in Epidemiology**
Intern at M.A. SANTE
Tel: +237 697 08 13 54
Email : corine.kangmo@masant-cm.org

- **M. Gnodjom Victorin, MPH in Epidemiology**

Intern at M.A. SANTE
Tel: +237 678 25 40 47
Email : victorin.gnodjom@masante-cm.org;

- **M. GOURA André Pascal, MPH in Epidemiology**
Data manager at M.A. SANTE
Tel: +237 655 07 04 57
Email: pascal.goura@masante-cm.org

- **Kiadjeu Franck F.**
Deputy data manager at M.A. SANTE
Tel: +237 694 10 40 43
Email: frank.dieumo@masante-cm.org

- **Pr David A SACK**

Professor, department of international health; joint Appointment, Department of Epidemiology; the Johns Hopkins Bloomberg School of Public Health
615N. Wolfe Street, E5537
Baltimore, Maryland 21205
Tel: 443-287-8795
Email : dsack1@jhu.edu

Implimenting institution

- **Meilleur accès aux soins de santé (M.A. SANTE)**

Email: masante.pc@masante-cm.org

BP: 33490 Yaounde Cameroon

Funder

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1- Introduction

1.1- Context and justification

Over the years from 1971 to 2015, Cameroon has registered several cholera outbreaks Characterized by seasonality and spontaneity of epidemics. The most affected region is the Far North which registered the highest attack and case fatality rates. The last majors of these epidemics occurred from 2011 to 2014 with 26621 cases of cholera and 1031deaths, given a case fatality rate (CFR) of 4%. Reasons behind the time of occurrence, origin of index cases, the speed and the direction of the propagation of the outbreak are still unclear although several studies index limited access to water and sanitation and risky population behavior. It is thus difficult to predict cholera outbreaks occurring in Cameroon and implement in time control measures. The constant cholera high case fatality rate could be explained by limited access of the population to quality care[1].

The Ministry of Public Health and his partners have been putting tremendous efforts responding to cholera outbreak and to a lesser extent preventing subsequent outbreaks. The interventions are centered on improving access to water, sanitation and hygiene (WASH), education of the population, and treatment of cases. Recently in 2015, Cameroon has assisted to the use of oral cholera vaccine (OCV) in the Minawao refugee camp in Mokolohealth district organized by "Médecins Sans Frontières" (MSF).

Mogode is one of the cholera endemic districts, with persistently high number of cholera cases and deaths during outbreaks of cholera in Cameroon. From 2009-2015, annual attack rates in Mogode district ranged from 10.6 to 1 096 per 100 000 population and annual CFR from 4.5 to 18.6%. The most recent 2 cholera outbreaks in Cameroon started in Mogode Health district. This is suspected to be due to high level of population movements (migration of nomadic populations and high flow of refugees from Nigeria). Mogode receives a high flow of refugees fleeing Boko Haram violence in Borno and Adamawa states of Nigeria, many of whom are on their way to Minawao refugee camp in neighboring Mokolo district. For Many cholera outbreaks, the first cases had recently crossed the border from Nigeria to receive cholera treatment in Cameroon. The combination of low access to care and safe water, sanitation and hygiene, WASH, and the high insecurity in Mogode and trans-border areas contribute to high cholera morbidity and mortality[1].

A risk assessment of cholera outbreak was conducted in Cameroon identifying Mogode Health District as the most vulnerable and eligible in receiving OCV in Cameroon. An OCV immunization campaign is planned by the Ministry of Public Health and his partners as a pre-emptive campaign to target 126619 persons in the Mogode Health District (HD). Mindful of

the fact that it is the largest OCV campaign organized in Cameroon and the first by the Ministry of Health, couples with fact that OCV was just recently integrated into the National Cholera Outbreak Contingency plan in the country, the Monitoring and Evaluation process has be recommended to be conducted to generate useful information to improve immunization coverage and necessary to guide subsequent campaigns.

The oral vaccination campaign against cholera in Mogode health district will be conducted in two rounds. The first round, starting from May 10 to 16 (with vaccination properly starting from the 12th to 16th) and second round running from May 27 to 04 of June (with vaccination properly starting from the 31st of May to the 04th of June). The main vaccination strategy is door-to-door with persons and household markings.

Immunization strategies adopted include: fixed posts (in health facilities), door-to-door, outreach (in schools, markets, places of worship ...) and mobile strategy to increase vaccination coverage. Also, to promote the importance of hygiene in the community, a bar of soap will be distributed in each household during the second round vaccination.

The coordination of activities is leaded by the sub-directorate in charge of immunization of the Cameroon Ministry of Public Health (MoH), with the assistance of Centers for Disease Control and Prevention (CDC) and International Medical Corps (IMC). The following activities will be part of the campaign: micro-planning, training, logistics and vaccine supply, social mobilization, supervision activities, vaccination activities, WASH activities, population sensitization on WASH and monitoring and evaluation.

1.2- General objective

To provide timely, accurate and useful information that will guide decision taking so as to maximize the coverage and impact of the OCV immunization campaign planned to be organized in Mogode in May, 2017 and those of future campaigns.

1.3- Specific objectives

a- To assess the achievement rate and quality of preparative and campaign activities of Mogode 2017 OCV immunization campaign;

b- To estimate the cost of vaccination per person vaccinated for the Mogode immunization campaign;

c- To assess the coverage rate of Mogode 2017 OCV campaign activities;

d- To assess household access to WASH and Knowledge, Attitude, and Practice (KAP) regarding cholera prevention including vaccination;

e- To organize the detection and reporting of adverse events following immunization (AEFI) and contribute in the investigation of serious cases;

f- To implement a post campaign health facility-based surveillance of cholera in Mogode health district ;

g- To provide timely results of assessment to campaign organizers for a decision-making process.

2- Methodology

It will include the use of different designs to evaluate several activities involving different targets.

Data collection tools will be adapted from those existing in the OCV stockpile web site to collect and analyze data; and results on coordination, micro-planning, training, social mobilization, supervision, logistics and vaccination activities promptly shared. A simplified grid will be adapted from that developed by IVI and WHO for DOVE project to collect data that will be used to estimate cost per activity and per immunized person. A community based two steps cluster survey will be conducted to estimate the immunization coverage, social mobilization (coverage), household access toWASH and KAP regarding cholera prevention and the incidence of AEFI and of diarrhea. Personnel will be trained and assisted in detecting, reporting, investigating and treating cases of AEFI and cholera; and conducting causality assessment of AEFI. For each activity, field data will be collected and sent electronically, analyzed and results rapidly shared for timely decision taking.

2.1- **Assessment of the achievement rate and quality of preparative and campaign activities**
This includes coordination, micro-planning, training, social mobilization, supervision, logistics and vaccination activities.

a- Coordination and micro-planning

A grid will be developed and validated to review reports, agenda, recommendations, participating institutions, coordinating structures S and micro-planning meetings.

b- Trainings

A monitor will be trained to collect data necessary for the evaluation. Evaluation will be carried out by documentary review and through participation in the training sessions. The review will target the selection process of facilitators and participants; the attendance lists, and the training agenda. Observation will concern the training methodology, the contents of the training, the timing allocated for presentations, discussions and practical.

c- Social mobilization

Communication channels per type of social mobilization will be listed and data on implementation process collected using a pre-developed grid. The coverage rate of social mobilization will be determined by community survey.

d- Supervision

A grid will be developed to assess the availability of supervisors per target and per activity, the availability of planned supervisors and supervision tools per activity and the coverage of supervision per activity and per target.

e- Logistics

In-depth interviews and review of vaccine transportation and storage documents will be used to collect information on batch lifting, adequacy of cold chains during transportation and storage of the vaccines.

A grid will be developed to assess accordance between the distribution of planned target population, operational distribution of vaccines (per health area, per vaccination strategy and per vaccination team) and the population reached.

f- Vaccination activities

Each health area will have a monitor who will collect data on composition of vaccination team, distance covered, the availability of vaccination package, the duration of vaccination teams on the field, duration of vaccination of one person, the vaccination strategies, sheet tallying, individuals' and household coverage labelling.

2.2- Assessment of campaign activities' coverage rate

Survey will target households, randomly selected by a stratified two steps cluster sampling.

All households in Mogode health district will be eligible. Households where the head do not accept to participate in the study will be excluded.

Estimating the sample size, we will assume:

- 50% vaccination coverage to be safe;
- Design effect of 2;
- Precision of 7%;
- 95% confidence interval;
- At least one participant per target group; and
- Aresponse rate of 80%.

Planning to estimate the immunization coverage in adult men and women and children under 5, the minimum needed sample size per group will 490; summing up to 1470 households. 120

clusters of 13 households each will be allocated to villages proportionally to their total population. Villages with one cluster, the list of household will be done and one randomly selected as well as the direction to recruit the 12 other subsequent households. In villages with more than one cluster will be divided into sections equivalent to the clusters and selection will be done following the process above.

Data will be collected using two tools. The first questionnaire will target all the people eligible for immunization in the household. It will collect data on immunization and social mobilization coverages, reasons for non-vaccination, the incidence of AEFI and diarrhea. The second questionnaire will target head of households to collect data on KAP on WASH and cholera prevention.

24 surveyors will be assigned proportionally to health areas based on the number of clusters. Each health area will have one supervisor, monitoring and reporting their activities to the central supervisor. Data will be collected with smartphones and in ODK collect forms and sent to the central data base via SMS. The data quality will be monitored on daily basis and feed-back sent to the field team for correction.

The survey for the first round will last for 03 days, starting 01 day after the campaign and key indicators will be estimated and sent to campaign team one week later for a better planning of the second round. The survey after the second round will be conducted as on the first round and, key indicators sent to campaign teams a week after for the planning of any catch-up.

The sampling process of the two rounds will be independent.

2.2- Assessment of the impact of the campaign

a- Surveillance of suspected cases of diarrhea

Surveillance will be conducted in 52 weeks starting with campaign. This will be health facilities based surveillance to detect, report and investigated all suspected cases of cholera The case definition will be any person of at least 1 year presenting with acute watery diarrhea (AWD) and dehydration, or somebody who died from severe dehydration. The detection will cover all health facilities and will be done by trained nurses. Suspected cases will be reported using the national validated case report form in electronic and paper forms. The paper forms and collected stool samples will follow the routine surveillance system[2]. Electronic forms will be sent on ODK interface via SMS to the central database.

 A fraction of collected stool samples will be tested at health facilities using an enriched cholera dipstick test[3] and a portion conserved on filter papers for polymerase chain reaction (PCR). Results will be immediately communicated to health authorities.

A nurse will supervise on monthly basis and supplied with needed supplies.

b- AEFI surveillance

AEFI surveillance will be health facility-based and will start on the first day of the first round and will last for 14 days after the second round. Trained nurses will detect, treat, report and start investigation of AEFI. Surveillance will be conducted following passive and active detection systems. For the passive detection, all health facilities will be provided with standardized AEFI reporting forms. And will be asked to filled and submit daily to AEFI focal point at the health facility.

Minor AEFI will be reported by the focal point at weekly basis to the nation committee for AEFI surveillance through the District Health Service (DHS). Serious AEFI will be reported by the focal point to the health district immediately. He will also collect samples needed for investigation and send them to national laboratory (Centre Pasteur de Garoua) through the DHS.

For active surveillance, a column will be inserted in all health facilities registers in which the OCV vaccination status of patients will be noted. The focal point at daily basis will check the consultation registers to detect missed cases and report them as stated above.

A rapid reporting system via SMS will be parallel to the above described systems. In this system, all AEFI will be reported via SMS to the central database for timely analysis and results shared. Focal point will be supervised at weekly basis.

A national committee for AEFI surveillance exists in Cameroon Ministry of Public Health. It is charged to adapt the OCV campaign surveillance guide to the Cameroon context and will assist the selection and training of AEFI focal points and charged to classify reported cases, complete investigations, conduct causality assessment and report.

3- Dissemination of results

For the preparatory phase and first round campaign, key indicators of M&E will be estimated and results shared with the organizing team for a better preparation of the second round.

For the second round vaccination, key indicators of M&E will be estimated and results shared with the organizing team for catch-up and preparation of future campaign.

The OCV stockpile form on Minimum M&E information will also be filled at the end of the campaign and shared with campaign organizing team. This form will be amended to collect more detailed data on the cost of the campaign.

A general report of M&E will be available within 3 months following the campaign and presented to the organizing committee during a meeting with the sub-directorate of immunization of Cameroon Ministry of Public Health.

4- Collaborators

The planning, implementation and coordination of monitoring and evaluation activities will be done by "MeilleurAccès aux soins de santé" (M.A. SANTE) under the supervision of DOVE project and the Cameroon Ministry of Public Health. Financial supports will also be provided by the DOVE project with funding from Bill and Melinda Gates foundation.

Fields activities will be organized with the assistance of

- Far North regional delegation of public health;
- Mogode health district services;
- Heads of hospitals and health centers;
- Local health committees
- Administrative and traditionalauthorities.

References

1. Cameroon Ministry of Public Health. *nationale surveillance systeme*.

2. Cameroon Ministry of Public Health. *Guide Technique Pour la Surveillance Intégrée de la Maladie et la Riposte au Cameroun*. (2011).

3. Debes, A. K. *et al.*Correction: Evaluation in Cameroon of a Novel, Simplified Methodology to Assist Molecular Microbiological Analysis of V. cholerae in Resource-Limited Settings. *PLoS Negl. Trop. Dis.***10,** e0004537 (2016).

4. World health organization. Oral cholera vaccine stockpile: Monitoring and Evaluation (M&E). Access online on the 17th March, 2017. At http://www.who.int/cholera/vaccines/ocv_stockpile_2013/en/

5. Debes AK[1], Ateudjieu J[2], Guenou E[2], Ebile W[2], Sonkoua IT[2], Njimbia AC[2], Steinwald P[2], Ram M[2], Sack DA[2].Clinical and Environmental Surveillance for Vibrio cholerae in Resource Constrained Areas: Application During a 1-Year Surveillance in the Far North Region of Cameroon.Am J Trop Med Hyg. 2016 Mar;94(3):537-43. doi: 10.4269/ajtmh.15-0496. Epub 2016 Jan 11