Project Overview

[Also refer to the Evaluation Plan section]

Introduction

To address the high burden of diarrhoeal disease among children under five in Chad, this pilot project will introduce the distribution and promotion of oral rehydration salts and zinc (ORSZ) in Moulko District, leveraging the existing Seasonal Malaria Chemoprevention (SMC) platform. This integrated intervention has been co-designed by Clear Solutions (CS) and Malaria Consortium (MC), bringing together complementary expertise. CS contributes its successful experience of implementing ORSZ distribution in Nigeria, with established tools, messaging, and delivery models. MC team brings in-depth knowledge of the Chadian context, including local health systems, community structures, language and delivery mechanisms, and extensive experience of delivering SMC across diverse regions of Chad.

The project aims to reduce childhood morbidity and mortality through a cost-effective and community-led model that builds on an already trusted platform. The existing Seasonal Malaria Chemoprevention (SMC) campaign will serve as the delivery mechanism for ORSZ, ensuring efficient reach to caregivers during routine household visits by trained Community Relays (CRs). In addition to distribution, the project emphasises building caregiver knowledge on when and how to use ORSZ to treat diarrhoea, through brief but effective health education provided at the point of contact.

Layering ORSZ onto SMC Distribution

SMC is delivered in Chad through a door-to-door campaign that runs across four monthly cycles from July to October. SMC provides SPAQ (sulfadoxine pyrimethamine and amodiaquine) to children aged 03–59 months to protect them from malaria during the high transmission season. Each cycle, pairs of trained community relays (CRs, known locally as ReCos) visit households over a four-day period to administer SPAQ and record delivery.

In the pilot, the same CRs will also distribute co-packaged Oral Rehydration Salts and Zinc (ORSZ) alongside SMC, using the campaign platform to reach caregivers with simple and clear messaging about when and how to use the treatment for diarrhoea in young children. ORSZ will not be administered on the spot like SPAQ, but handed to caregivers with guidance on recognising symptoms, correct usage, safe storage, and when to seek further care.

Pilot Purpose

The pilot aims to provide the children of Moulko district reached by MC SMC program with an additional highly-effective health intervention - ORS and Zinc treatment for diarrhoea - and provide important learnings in the process.

Key learning goals include determining:

1. Is layering ORS and zinc delivery onto Malaria Consortium's SMC program feasible without negatively impacting SMC coverage and quality of delivery?
2. Does free-delivery of ORS and zinc as part of the SMC program increase ORS coverage in the 3 months following the deliveries?
    a. How much does the impact of the ORSZ intervention change as time passes after the deliveries are made?
3. How much does layering on ORS and zinc delivery to Malaria Consortium's SMC program cost? What is the cost per additional case treated with ORS and modelled cost per death averted?
4. Behavioral, contextual, and operational factors that influence the acceptability, understanding, and use of ORS and zinc

Main responsibilities of the Parties

Clear Solutions will provide the necessary funds to execute the ORSZ project. CS will also provide oversight and domain-specific knowledge related to this project related to ORSZ.

Malaria Consortium will be responsible for all logistics and execution of the project on the ground. MC will also provide the domain-specific knowledge required to execute this related to SMC and working in Chad. MC will share regular field updates with CS, including monitoring and evaluation data, to enable informed collaboration and decision-making.

CS and MC will work together to co-create the required training and supervision materials, as well as co-design monitoring and evaluation plans with external evaluators.

Project Structure and Timeline

Phased Implementation

The pilot will perform distribution in two phases to reach full coverage of the district, with a total of 9 health facilities and an estimated 13,376 eligible children.

1. Operational Test: SMC Cycle 1, (provisional dates July 14–17, 2025)

A small-scale pilot will be conducted in one selected health facility catchment area of Moulko District. This phase will test the feasibility of the integrated model, identify operational challenges, and gather feedback from both CRs and caregivers.

2. District-wide Pilot: SMC Cycle 4, (provisional dates October 9-12, 2025)

The project will expand to all remaining SMC program health facility catchment areas within Moulko district in a refined and scaled-up second phase, incorporating practical learnings from the Operational Test. Training, messaging, supervision, and logistics will be adjusted in response to feedback and monitoring data collected in the first phase to ensure improved delivery and stronger community uptake.

Importantly, each health facility catchment area will receive ORSZ distribution only once during the pilot. Areas included in the Operational Test will not be revisited for ORSZ in District-wide Pilot. Rather, District-wide Pilot will target additional health facility areas, allowing the project to test the refined model in a different setting while expanding overall reach.

Pilot phase	**Health Facilities**	**Estimated Children under-5 reached**
Operational Test SMC Cycle 1	Moulkou Urbain	2,837

Pilot phase	Health Facilities	Estimated Children under-5 reached
District Pilot SMC Cycle 4	Al Afia (Privé), Bahawaliassou, Guizandjoro, Koumakayam, Ngournaida, Sarkaye, Soudio, Tchikali	10,539
Total	All 9 health facilities in Moulko District	13,376

Timeline overview

Activity	Date
Finalisation of training materials (EN/FR)	Early May 2025
Training at district level	Late May
Complete procurement process. ORSZ available in Chad ready for distribution.	Late June
Training of CRs and supervisors	July 7 -13, 2025
Cycle 1 distribution (Operational Test)	July 14–17, 2025
Mid-term learning and revision. Finalisation of the M&E plan for Cycle 4	August 2025
Cycle 4 distribution (District-wide Pilot)	October 9-12, 2025
Endline survey, FGDs, KIIs	November - January 2025
Final reporting and dissemination	February 2025

Activities Elaborated

Training and Supervision

Training is a critical component of the model. All CRs involved in either pilot phase will participate in a one-day training in July, which will be delivered on the same day as the existing SMC training. The ORSZ component will be integrated into the SMC agenda. This integrated approach leverages the established SMC training structure and cascade model, creating efficiencies in planning and delivery.

The training will focus on practical demonstrations of how to explain ORSZ use to caregivers, alongside key messages on safe storage, when and how to administer treatment and record-keeping. Pre and post-knowledge tests will be conducted to assess CRs' understanding and retention of ORSZ-specific content.

Additionally, CRs participating in District-wide Pilot (Cycle 4, October 9-12, 2025) will receive an additional half-day refresher to reinforce ORSZ protocols. As there is no SMC training scheduled at that point to build on, this refresher must be developed and delivered as a stand-alone session, with associated costs charged to the ORSZ project implementation budget.

Supervision will be embedded throughout the campaign, building on the existing supervisor structures established under the SMC programme. This approach leverages the SMC supervisory model. Each supervisor will support four CR teams, providing oversight before, during, and after each distribution day. Their role includes assisting with CR training at the health facility level, distributing drugs and supplies, monitoring household visits, and collecting and verifying data in the afternoon. Supervisors will also support end-of-cycle reconciliation and reporting processes at the health facility level.

To ensure government engagement, a separate orientation session will be delivered at the district level for key Ministry of Health stakeholders. This will ensure alignment, facilitate local ownership, and establish mechanisms for incorporating learning into future health interventions.

Procurement and Supply Chain

ORSZ co-packs will be secured through a supplier arranged by MC Nigeria team with support from CS. MC Chad team will facilitate customs clearance upon arrival, after which distribution will be coordinated to ensure timely delivery to each health facility involved in the pilot. The budget reflects updated unit costs and transportation expenses for delivery to the community level.

MC will facilitate adequate quality assurance (QA) process throughout the project to ensure that the ORS and zinc being delivered to caregivers are of a standard that aligns with the relevant WHO guidelines. MC will share the QA process with CS including any relevant documentation

such as manufacturer registration status, ORSZ batch certificate of analysis, and lot sampling results (e.g. using process in alignment with ISO 2859-1:1999).

MC will keep accurate records throughout the supply chain process from transportation of ORSZ stock from supplier through to daily handovers of ORSZ stock to CRs. CR Supervisors will record each collection of ORSZ from storage and each handover of ORSZ to CRs as part of their supervisory responsibility.

ORSZ provision during SMC distribution

MC will coordinate the Community Relays (CRs) who perform the SMC campaign are to add an ORSZ component into each household visit, such that each primary caregiver of eligible children within the household is provided:

1. a printed leaflet on ORSZ usage (to be provided digitally by Clear Solutions for print arranged by MC) with a talk-through of the main points on the leaflet,
2. a verbal set of emphasis points on diarrhoea risks and effective treatment,
3. one box of co-packaged ORS and Zinc (1 “co-pack”) for each eligible child that the householder is primary caregiver for.

The additional items above are anticipated to take a total of 1-3 minutes to complete per household and this is to be monitored during the project to inform future programs.

The intention is to distribute one ORSZ co-pack to every eligible child in the district, in Operational Test or District-wide Pilot as per *Phased Implementation*. Should SMC operations require repeat visits to households within a cycle, ORSZ should not be provided on additional occasions.

Eligibility: a child is eligible for ORSZ provision - meaning that their primary caregiver should be provided with an ORSZ co-pack on their behalf - if they are aged 0-59 months, with the primary caregiver and child resident at the household visited by the CR.

CRs are to be provided with sufficient ORSZ to meet anticipated daily distribution needs, using the existing SMC supervisor supply structure.

Monitoring and Evaluation

A comprehensive Monitoring and Evaluation (M&E) framework will accompany the pilot to generate evidence on both the implementation process and project outcomes. MC will coordinate and ensure effective implementation of monitoring on the ground. CS will coordinate

with MC and external evaluators to ensure effective design of the enumeration to achieve the goals outlined above.

MC are to share digitised outputs of the activities below with CS. Should CS receive M&E data directly, without MC access, eg. via survey software cloud storage, CS will share the data with MC.

Qualitative Assessments

MC will implement informal interviews of caregivers and health staff prior to the Cycle 1 distribution. This will focus on understanding the existing knowledge and perception of diarrhoea, ORS, zinc, and the current project concept. This will inform the tailoring of the educational materials and community mobilisation plans.

Direct Observations and Spotchecks

During the SMC/ORSZ distribution, direct observations and spotchecks at households after visits will be carried out during the distribution period. Supervisors will shadow CR teams to assess the quality of interaction between CRs and caregivers, with a focus on whether messages are delivered clearly and consistently and the time required to deliver ORSZ to the caregivers. The plan is to observe 20–30 CR-caregiver interactions.

LQAS

The Lot Quality Assurance Sampling (LQAS) surveys conducted by MC after SMC cycles will be extended with a small number of ORSZ-specific questions. This approach will enable efficient, streamlined and cost-effective monitoring by leveraging established SMC systems.

ORSZ Usage Evaluation Surveys

Refer to the Evaluation Plan

Evaluation Plan

[Also refer to the Project Overview section]

Overview of research to test the effectiveness of layering on ORS+zinc delivery with Malaria Consortium's seasonal malaria chemoprevention program

Background: ORS is an extremely effective treatment for child diarrhea, but hundreds of thousands of children continue to die from diarrhea each year because they are not treated with ORS. As a result, there is broad interest from funders and governments in ways to increase ORS use to reduce child mortality.

One promising approach is to give caretakers ORS for free ahead of illness so that they have ORS stored in their home ready to use when their child comes down with diarrhea. There are several potential ways of encouraging pre-emptive home storage of ORS including hiring teams to deliver ORS directly to the home, layer ORS delivery on to existing programs that make home visits, and distributing ORS for free at routine clinic visits. Understanding which approaches are most effective and cost-effective is essential for directing global health resources towards increasing ORS use.

This study will test a novel approach of layering ORS home delivery onto Malaria Consortium's existing seasonal malaria chemoprevention (SMC) program, which makes home visits to administer antimalarial drugs to children during peak malaria seasons.

Research Questions:

1. Is layering on ORS+zinc delivery to Malaria Consortium's SMC program feasible without negatively affecting SMC coverage and quality of delivery?
2. Does free-delivery of ORS+zinc as part of the SMC program increase ORS coverage in the 3 months following the deliveries?
3. How much does the impact of the intervention change over time as more time passes since the deliveries are made?
4. How much does layering on ORS+zinc delivery to Malaria Consortium's SMC program cost? What is the cost per additional case treated with ORS and cost per death averted?
5. Explore the behavioral, contextual, and operational factors that influence the acceptability, understanding, and use of ORS+zinc

Research strategy

Setting: This study will be conducted in Chad, which has one of the highest diarrhea mortality rates in the world due to high prevalence and low ORS use. We will enroll one SMC cluster in Chad that covers about 10,000 children to also receive the free ORS+zinc delivery intervention. We will select another neighboring district that receives the SMC intervention only to be a control group.

Intervention: The SMC community distributors will deliver one co-pack of ORS+zinc per child and provide instructions on how to use the treatments. This will be done during their routine household visits during SMC cycle 4 distribution in October 2025.

Data collection: We will collect baseline data from the treatment and control group in September of 2025. Baseline data will capture 1) whether a child had diarrhea in the past 4 weeks and 2) whether the case of diarrhea was treated with ORS, and 3) whether the child received SMC. We will conduct the same survey starting 4 weeks after the deliveries end to record how ORS coverage changes in the treatment group compared to the control group. Caretakers in households with a child under-5 years old will be consented to complete the survey and longer surveys will be conducted if a child had a case of diarrhea.

In addition, a qualitative component will be conducted in both intervention and control areas to explore caregivers' understanding, perceptions, and practices regarding the use of ORS+zinc, as well as to assess the feasibility and acceptability of the intervention from the perspective of both caregivers and community distributors. This will include semi-structured interviews and focus group discussions carried out during the post-intervention phase.

Analytical Approach: We will use a difference-in-differences approach that compares 1) how ORS coverage changes in the treatment group from before to after the ORS+zinc deliveries are made and 2) how ORS coverage changes in the control group over the same period. Taking the difference between these two changes controls for the temporal trends in ORS use if temporal trends are comparable between the treatment and control areas.

Selecting a comparison district for the DiD: We will compare the change in ORS use from baseline to endline in Moulko region, where the ORS+zinc deliveries will be implemented, to the change in ORS over the same period in a comparison region where Malaria Consortium conducts the SMC intervention but where the ORS+zinc deliveries will not be implemented. Ideally the comparison district will look identical to the treatment district on have the same underlying trend in key characteristics and outcomes, in particular, ORS use. To identify a

comparison region we use a propensity score matching approach using Malaria Consortium monitoring data. We estimated propensity scores using child-level, caregiver-level, and household-level characteristics. We identified 2 health districts with very similar propensity scores to Moulko and the Malari Consortium team suggested we select one of these, Guelendeng, because this district was closer in proximity to Moulko, is more accessible than some other regions, and the MC team has a good working relationship with the local health team in this area.

In the end, we are using a DiD design so all that matters for causal inference is that trends in ORS use are the same between treatment and control in absence of the intervention. Thus, even if the comparison district is slightly different than the treatment district in ORS use at baseline, this is not a problem. The only problem would be if ORS use is changing differently over time between these two regions. We do not expect trends in ORS use to be changing very much over time in any of the districts over the few months we are assessing impact so this assumption seems reasonable.

Primary Outcome: Was a case of diarrhea that occurred within the last 4 weeks treated with ORS?

Sample Size and Power: There will be two waves of data collection (baseline and endline) and each wave will include 800 cases of diarrhea (1600 cases total across the two waves; 800 in each group). This will allow us to detect a 10-percentage point difference in ORS use between the treatment and control group assuming a base ORS use rate of 40%. To achieve this, we expect we will need to screen at least 3,000 households with children under-5 per wave and conduct longer caretaker surveys for around 700 households per wave (some households will have multiple cases of diarrhea).

Costs:

Refer to attached document in the email for quotes from one of the survey firms.