MANGO RESEARCH

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RESEARCH PROJECT

MODELLING AN ALTERNATIVE NUTRITION PROTOCOL GENERALIZABLE TO OUTPATIENT (MANGO)

PRIMARY OBJECTIVE:

To assess the **effectiveness of an optimized RUTF dosage** on the recovery of children aged 6 to 59 months with uncomplicated severe acute malnutrition.

PROPOSED PROJECT DURATION:

1 April 2014 to 1 June 2018

BACKGROUND

Treatment for severe acute malnutrition (SAM) significantly improved from protein rich diets ('50s) to F-75 and F-100 formula in hospital based treatment to Ready-to-Use Therapeutic Foods (RUTF) for the Community-based Management of Acute Malnutrition (CMAM). Despite these significant changes in treatment formulation and service delivery, the dose of RUTF for SAM treatment has not been revised since. Today, RUTF is dosed according to body weight and does not take into account possible reduced needs as the child is recovering.

In 2009, due to RUTF pipeline problems and increased caseload, SAM children in Myanmar were successfully treated through an alternative protocol (recovery rate 90.2%). Children admitted with SAM who were already partly recovered (i.e. WHZ >-3 and MUAC>110mm) were treated with a single dose of RUTF (1 sachet) for the end of the treatment until discharge. This treatment change was delivered through enhanced quality of services, which could have contributed to the success and high recovery rate.

RESEARCH OBJECTIVES

1. To compare **speed of recovery** (i.e. weight gain velocity) between SAM children 6-59 months of age receiving the standard treatment dosage and those receiving the optimized one
2. To assess the **cost effectiveness** of this optimized RUTF dosage versus the standard one
3. To assess the effects of both the standard and optimized RUTF dosage on **vitamin A and iron status** in SAM children under 5
4. To assess the **food intake** of SAM children during treatment
5. To compare the **body composition** in SAM children enrolled in the 2 groups particularly the increase of lean body mass

METHODOLOGY

Stage 1: Dose determination

To explore the velocity of anthropometric catch up throughout the treatment and determine the dose of RUTF according to nutritional recovery and status of the child.

Funding: This project is funded by CIFF, ECHO, HIF and ACF.

CIFF CHILDREN'S INVESTMENT FUND FOUNDATION

Stage 2: Field implementation

Children under 5, diagnosed with uncomplicated SAM

> Randomized controlled trial

- Control: standard RUTF dosage
- Intervention: optimized RUTF dosage

HIF humanitarian innovation fund elrha

MANGO project is supported by the Humanitarian Innovation Fund, a programme managed by ELRHA (Enhancing Learning and Research for Humanitarian Assistance)

Humanitarian aid and Civil Protection

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Operational arguments

At field level the following problems have been identified, which call for a revised approach in the treatment of SAM:

- **Stagnant gain of weight or MUAC** in uncomplicated SAM children despite the high calorie treatment. This supports either (1) the assumption that sharing and/or selling is a common phenomenon or (2) the hypothesis of a **reduced anthropometrical response to treatment**, especially regarding weight gain and MUAC due to underlying physiological processes not well known (lean versus fat mass deposit, etc.).
- **Selling and sharing** of RUTF is a common problem. The provided quantity of RUTF corresponds to a high daily caloric intake which could be too much for the child to consume at some end point in the treatment.
- **Supply issues** due to several reasons– creating non adherence to treatment and low utilization of services by families. The required quantity of RUTF is often unavailable at different levels in some areas.

Decision makers and policy arguments

Funding for humanitarian assistance is decreasing (economic crisis). This leads to the need for better cost-effective SAM treatment.

Optimizing the quantity of RUTF per beneficiary may lead to more funding to **treat more SAM children hence ensuring them a better equity for accessing treatment**.

Partnership

A **scientific partnership** has been established with the Department of Nutrition, Exercise and Sports within the University of Copenhagen, and Center for Disease Control & Prevention, USA.

UNIVERSITY OF COPENHAGEN

Research arguments

WHO (2013 Update) identified the need for research on '**the impact of different feeding approaches to management of severe acute malnutrition in integrated severe acute malnutrition services**". In addition to this acknowledgement, there is a global lack of evidence on response to treatment in terms of:

- The current protocol does not account for physiological changes of the SAM child during his/her recovery and its changed nutritional needs.
- Even though weight gain velocity slows down after the initial weeks of treatment, RUTF quantity is maintained high, maybe not adapted to fit the needs of the child.
- Catch up growth in SAM children : this is inadequately described in the current literature.

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Please contact us to know more about MANGO:

Cecile SALPETEUR—Nutrition research project coordinator
csalpeteur@actioncontrelafaim.org

XX—Head of Project MANGO
to be recruited in 2015

Project implementation plan (indicative)

Milestone	Potential start date – end date	Expected outputs
Phase 1: Dose determination	Sept'14 – Dec '15	New dosage table
Feasibility study	Jan '16 – Mar'16	Feasibility study done and protocol adjusted to results
Phase 2: Enrollment of children with SAM and follow up	Apr'16 – Mar'17	Field implementation, enrollment of children, quality data collection
Data analysis	Jan'16 – Dec'17	Results / internal report
Valorization of results	Jan'18 – Dec '18	Publications / Dissemination of results in workshops & conferences/ Recommendations