Effect of the blanket supplementary feeding programme on growth velocity, incidence of acute malnutrition and under2 mortality rate during the 2012 hunger season in Magalmé, Chad.

Background:

Moderate Acute Malnutrition (MAM) in children is common during complex emergencies and also during seasonal recurrent hunger periods among populations reliant on subsistence agriculture. It is increasingly recognised that most of the world's cases of undernutrition occur not in acute conflict or natural disasters but during annual hunger seasons. In complex emergencies, around 60% of deaths occur in children under five years; in such situations, acute malnutrition is believed to directly contribute to nearly a quarter of deaths[1][2], with MAM contributing between 60—80% of the overall caseload[3][4].

Supplementary Feeding Programmes (SFPs) have so far been the mainstay of emergency interventions addressing moderate malnutrition[5][6]. However, the effectiveness of SFPs in treating MAM and preventing Severe Acute Malnutrition (SAM) in emergencies has been called into question over the last few years [23][7]. Alternative approaches put forward include blanket feeding, extended general food distribution and cash transfers[8][9]. However, evidence of the effectiveness of these new approaches is limited.

The Emergency Nutrition Network (ENN) has sought and was awarded funding from USAID/OFDA to undertake research into alternatives to targeted SFPs. In addition to an emergency cash transfer intervention in Niger, ENN is overseeing a blanket supplementary feeding programme (BSFP) in Chad being implemented by Oxfam Intermon with WFP. The objective of the Chad study is to assess the effectiveness of alternative approaches to SFPs; more specifically to investigate the effectiveness of blanket supplementary feeding in promoting acceptable growth velocity and preventing the occurrence of acute malnutrition and death.

Why Chad?

Vast and landlocked, the Central African Republic of Chad is considered a low-income and food-deficit country. The country is experiencing a strong demographic growth and a high influx of refugees. However, only 3% of Chad's land mass is considered arable, yet the agricultural sector, which is subject to harsh climatic constraints, has dominated the country's economy for many years. Currently subsistence farming and livestock provide the livelihood for more than 80% of Chad's population. Infant and under-five mortality rates are very high and have not declined substantially in the last 25 years. Illiteracy reaches alarming levels, affecting three-quarters of the population in rural areas. At national level, the food supply barely meets the average energy requirements of the population, and, due to disparities in access to food, many households do not meet their daily energy requirements with the deficit reaching up to 20% in certain zones. Malnutrition is endemic in Chad and in many areas is frequently well above emergency thresholds.

The study is being implemented in Magalmé (Guéra), Chad; a mountainous zone situated in the Chadian Sahel and recurrently affected by seasonal food crisis. The population depend mainly on subsistence farming of cereals (sorghum, millet) and legumes (groundnuts and sesame). Malnutrition is endemic in the region and in general increases during the rainy season.

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BSFP in Magalmé, Chad

Humanitarian organisations and governments are increasingly using BSFPs and family food rations for the prevention of acute malnutrition[10] [11]. However, the effectiveness of these interventions has not yet been well documented. The overall goal of this research is to fill this gap.

The study will be implemented within the context of a blanket programme aiming at preventing the consequence of the 2012 hunger on the nutrition status of vulnerable children (aged 6-23 months), lactating mothers and severely food insecure households.

Study goal and objectives

The overall goal of this research is to assess the effectiveness of several types of interventions (BSFP and family food ration) in reducing mortality, by preventing new cases of acute malnutrition and reducing the incidence and prevalence of acute malnutrition in study populations during the hunger period.

The specific objectives are as follows:

- Assess the impact of BSFP with Supercereal plus in sustaining pre-hunger season growth (weight and height) in participating well-nourished children during the hunger season.
- Assess the effectiveness of BSFP with Supercereal plus in maintaining the increase of GAM (incidence/prevalence) from post-harvest to the hunger season to below 5% among beneficiaries and in the area covered by the intervention.
- Assess the effectiveness of the BSFP with Supercereal plus in reducing changes in the <2 mortality rate during the hunger season compared to the post-harvest season.
- Assess factors associated with growth velocity deceleration or the development of acute malnutrition (also with the success of the intervention) in participating children
- To assess the cost-outcome of BSFP and BSFP plus GFD in preventing new cases of acute malnutrition in Guera, Chad.

Study methods:

To better understand the effectiveness of blanket supplementary feeding in promoting acceptable growth velocity and preventing the occurrence of acute malnutrition and death, a prospective cohort study design is being used. Well-nourished children (MUAC>125 mm and WFH>-2 and no oedema) aged between 6 and 23 months at recruitment from households targeted by the BSFP are enrolled and are being surveyed monthly from May-October 2012 to collect anthropometric, socio-demographic, food security and expenditure data.

Study Cohorts

All enrolled children receive a daily ration of 200g of Supercereal plus for a total period of five months.

Baseline data

In the absence of a concurrent control group, the growth velocity and mortality during the intervention period (hunger period) will be compared to the growth velocity observed and mortality (180 days recall) during the period preceding the hunger season (May). Data will be collected in a representative sample of children aged between 6 and 30 months.

Follow up

Monthly follow up will be carried out at the site of food distribution. Absentees will be followed up at their homes if they miss two consecutive distributions. Children will exit the study when they complete the 6 months follow up or if they move outside the study catchment area or die. Children who develop malnutrition will remain in the cohort up to the end of the study but they will contribute to the denominator for the calculation of the incidence only for the period prior to the diagnosis of acute malnutrition.

Figure 1. Data collection schedule

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Variables	May	June	July	August	September	October
Baseline data collection						
Sampling	X					
Data collection	X	X				
Data analysis		X	X			
Cohort data collection						
Administrative data	X					
Socio-demographic data	X					X
Food security data	X	X	X	X	X	X
Household expenditure data	X	X	X	X	X	X
Food intake and utilisation data	X	X	X	X	X	X
MUAC	X	X	X	X	X	X
Weight	X	X	X	X	X	X
Presence of oedema	X	X	X	X	X	X
Height	X			X		X
Morbidity/Mortality	X	X	X	X	X	X
Follow up of absentees			X	X	X	X
Nutrition survey data						X
Programme cost data						X
Market trend data						X
Mothers data collection						
Weight	X	X	X	X	X	X
MUAC	X	X	X	X	X	X