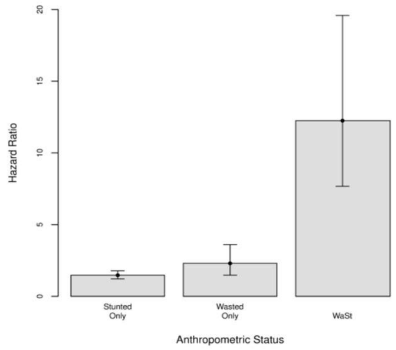

# Research announcement: Bringing new evidence on undernutrition and mortality risk into practice.

The ENN and partners, with funding from USAID/OFDA and the Global Health Bureau, are embarking on a research project to incorporate new evidence relating to the relationship between wasting and stunting and their combined impact on mortality into existing programme practices. This briefing note provides information about why this research is important, what the approach will be, and how you can stay engaged with the project as it progresses.

## Why this is important

The ENN co-ordinated Wasting and Stunting Technical Interest Group (WaSt TIG) have been investigating the relationship between wasting and stunting since 2014 examining whether the current separation between these manifestations of undernutrition within research, programmes, policy, and funding is justified. Recently published analyses by the group (illustrated below) have highlighted the very high risk of death in children who are simultaneously (concurrently) wasted and stunted (WaSt). The level of mortality risk is comparable with that of a child with severe acute malnutrition who would normally be therapeutically treated. Analysis carried out using cohort study data from Senegal indicates that weight-for-age (WFA) and MUAC when used independently identify all children with nutritional deficits who are at risk of near-term mortality including those who are simultaneously wasted and stunted, severely wasted (by either MUAC or WHZ), and severely stunted. Although WFA has been eclipsed in recent years by separate measures of wasting and stunting, it has remained in use in many child health and growth monitoring and promotion systems. There is, therefore, an opportunity to test how WFA may be usefully re-integrated into programme approaches (e.g. CMAM) for child survival and development. This study aims to test whether WFA and MUAC can be effectively (and cost-effectively) utilised in existing programmes to capture these children with single and dual deficits and reach considerably more children at a high risk of death.

Pooled hazard ratio for anthropometric status and all-cause mortality estimated using cohort data from 10 countries




Based on results presented in McDonald CM et al. (2013)

## The questions we are asking and what we will do

This study aims to answer the following three questions in sequence, each building on the results of the previous question:

1. Which combination of anthropometric indicators and associated thresholds best identify children aged 6-59m at risk of malnutrition-related death across different contexts.
2. What intensity, duration of treatment, and discharge criteria are appropriate for children identified using the combinations of the indicators / thresholds identified in 1 (above)?

3. How can the findings of 1 and 2 (above) be operationalised in existing programmes?

**To answer question 1,** we will use existing data from 10 historical cohort studies that tracked anthropometry and outcomes (including mortality) among untreated children to test whether the Senegal findings are repeatable in other country contexts.

**To answer question 2**, we will first review available survey data and clinical data from therapeutic feeding programmes to examine:

- The likely change in caseload and burden for therapeutic programmes when adding a WFA admission criteria.
- The characteristics and near term mortality risk of children with different combinations of anthropometric deficits in MUAC and WFA (i.e. low WFA only, low MUAC only, both low WFA and low MUAC) according to the thresholds identified in answer to question 1.
- Response to treatment in children with different combinations of anthropometric deficits receiving the existing standard treatment protocol.

This information will inform a subsequent clinical study (comprised of a small set of limited sample size cohort studies) to determine the appropriate intensity, duration of treatment, and discharge criteria for children identified using the above indicators and thresholds. It is envisaged that this study could be run out of the paediatric department of a district hospital.

**To answer question 3** we will design and establish an operational study within a health district, informed by questions 1 and 2 and adapted to the local context and potential caseloads (informed by known coverage and prevalence data). This study will provide information on practicability, coverage, caseloads, effectiveness, and cost effectiveness of the programme paying particular attention to the addition of WFA in programme settings.

The outputs will include:

- Operational guidance for programmes to support improved coverage of treatment for children at a high risk of death
- Peer review publication of the mortality cohort analysis
- A generic research protocol for answering questions 1 and 2 in any context
- A country specific research protocol for answering question 3
- Peer review publication of the case-series, operational study and cost-effectiveness analysis

At each stage of the study and for each output, the results will be shared and discussed widely with national and international stakeholders.

## How we will do it

A partnership will be formed between USAID-OFDA/Global Health Bureau, ENN and Implementing Partner/s (IP/s) to carry out this study liaising with national and local ministries of health. In-country discussions will introduce and discuss the research objectives, plans and potential collaboration with national stakeholders and will define roles and responsibilities as well as the detailed study plan.

An ENN study team will design, oversee and support the research study, working closely with high level experts from the WaSt TIG on elements of design and analysis. Country level IP/s will conduct the operational research and support close liaison between the full study team and all relevant in-country bodies/stakeholders to ensure all elements are appropriate to the context and national priorities.

All necessary registration and permissions for the study will be sought both in the UK/USA and in country.

This project, which started in September 2018 will conclude in 2021. The project is funded by the USAID-Office of US Foreign Disaster Assistance (OFDA) and Global Health Bureau.

### Contact for more information:

For periodic progress updates on this project (and other related ENN activities), please contact the study co-ordinator Kate Sadler on kate@ennonline.net or visit the ENN website.

### References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