SYNTHESIS REPORT

INTEGRATED PACKAGES: Wasting prevention and treatment in west and central africa

Key messages

- To date, most efforts to address wasting have focused on treating it rather than preventing it. Although treatment reduces child mortality, it does not prevent new cases from happening and absolute number of wasted children keeps increasing. To reduce the number of children becoming wasted, the coverage of life-saving treatment programs needs to occur alongside preventive and protective efforts. **Any intervention to treat wasting should be accompanied with context specific prevention measures.**

- **To ensure services are scaled, it is essential to:**
  - **Improve our understanding of drivers of wasting, as well as impact of interventions**, to develop multi-sectoral programs;
  - **Design integrated programs**, inclusive of multi-sectoral interventions which are measuring impactful outcomes on wasting;
  - **Target households and children through a child-centred approach** based on risk and vulnerability.

- **While doing so, special attention should be given to:**
  - **The life cycle approach**, including on pregnancy and infancy;
  - **A more holistic approach of undernutrition**, taking into consideration the linkages between wasting and stunting, and ensuring that both nutritional outcomes are systematically measured in all undernutrition interventions.

CONTEXT AND JUSTIFICATION

In a region where the absolute number of wasted children keeps increasing and where the coverage of treatment programs is around 30 percent for children receiving the treatment they need, it is urgent to accelerate efforts to prevent new cases of wasting. However, to date most efforts to address this life-threatening condition have focused on treating it rather than preventing it, meaning that our understanding of the drivers of wasting are limited and the interventions to address undernutrition are siloed. **To improve rates of child survival, improvements in the coverage of life-saving treatment programs needs to occur alongside preventive efforts.** Through preventing wasting, it is possible to:

- Reduce the incidence and burden of wasting
- Reduce costs. As stated by the World Bank, "it is entirely possible that preventing wasting would be more cost-effective than treating it, especially given the high costs of treatment. Thus, expanding treatment can be considered to be the cost of mitigating the impact of wasting, rather than preventing wasting."[i]
- Improve rates of stunting and other forms of undernutrition. Evidence suggests that episodes of wasting negatively affect linear growth and, therefore, undermines child growth and development[ii].

In this perspective, **universal prevention should be scaled up for all, and specific undernutrition protection packages should be made available for the most vulnerable.**

PREVENTING WASTING

Whilst important gaps in evidence and knowledge remain on what works to prevent wasting, it is important to accelerate promising interventions. We need to **ensure that systems deliver services simultaneously and predictably, particularly for the most vulnerable. To do so, the following components are important.**

- Systemizing the incorporation of information regarding drivers of wasting for designing interventions that tackle child wasting. This includes contextual and environmental differences and calls for a context specific approach. **Unpacking the complex and locally specific causes of wasting** is necessary to develop appropriate prevention interventions. Contexts and communities are different and a "one size fits all" approach to the implementation of nutrition interventions is ineffective[iii]. There is therefore a need to ensure program designs and policy decisions that are aligned with respective country risk factors.

- Improving the ability to define whether households and communities are targeted by services based on their different levels of vulnerability to wasting. This calls for a **child-centred approach where convergence with stunting reduction initiatives should be found based on high risk and vulnerability.**

- Developing packages of essential nutrition-specific and nutrition-sensitive actions required to address all key drivers to wasting and stunting. This requires aligning and simultaneously delivering nutrition services and ensuring they are being available in full. No single intervention will effectively prevent and treat wasting. Integrated packages must be implemented.

INTEGRATED PACKAGES FOR MANAGING WASTING

Intervention packages must be defined based on the context however may consider the following components, focusing on prevention first followed closely with active detection and referrals to treatment where needed.

1 **Primary Health Care and WaSH:** health in the first 1,000 days is essential for child growth and development. Access to essential services should be encouraged in any integrated intervention. Furthermore, ensuring children can benefit from a hygienic environment at household and community level will also be important to effectively reduce exposure to risks of infection which may provoke episodes of wasting.

2 **Maternal nutrition and wellbeing:** Given the strong association between low birth weight and wasting, as well as maternal mental health and undernutrition, interventions focussed on improving maternal nutrition and wellbeing should be explored. Whilst breastfeeding and appropriate diets in the early years may serve as a protective factor for subsequent wasting episodes for children with low birth weight, efforts should be made to avert low birth weight through promoting and supporting maternal nutrition. Parenting interventions to support caregiver wellbeing and nurturing care between the mother/child dyad can be linked to existing care groups at community level to support improved child growth outcomes.

3 Children's diets, feeding and care practices: ensuring a nutritious diet is important to prevent wasting and stunting from occurring. Nutritional education and Behaviour Change Communication (BCC) to support exclusive breastfeeding and appropriate feeding practices must be scaled up across all contexts. Care groups at community level are effective platforms to encourage mothers and families to instil protective practices at the household level. where access to a healthy diet is not available nutritional supplementation or social protection interventions (e.g. cash transfers) should be explored and made available to families, particularly for children in the first 1,000 days. These supplementation and/or protection interventions have the strongest evidence base to reduce the incidence of wasting and should be systematically considered in high burden areas to relieve the strain on already fragile health systems to treat large numbers of wasted children.

4 Early Detection ensuring timely detection and admission to treatment for wasted children is an essential to ensure quality treatment. Initiatives to improve early detection, such as the Family MUAC approach should be standardised across services. Growth monitoring platforms should be optimised to actively detect for wasting and must be linked to community-based interventions to correct growth faltering in the early stages of the onset of wasting.

5 Treatment of wasting: where all prevention efforts fail, it is essential for wasted children at high risk of mortality to reach lifesaving treatment. Decentralising services to the community, delivered by Community Health Workers, is an opportunity to ensure timely and quality treatment. Generally, simplifying treatment approaches, including an expanded admissions criteria and a single treatment product may also support timely and quality treatment.

Intervention design is crucial to the success of any package and should be closely monitored through routine systems and research where possible. When implementing an integrated package which responds to the wasting drivers identified at local level, it is important to ensure that universal interventions are provided at community level where possible to ensure impact. Furthermore, targeted interventions must be clear and understandable for families to ensure utilisation and uptake.

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EXAMPLES OF INTERVENTIONS FOR WASTING PREVENTION AND TREATMENT

The following table summarises interventions which have taken place over the WCA Region under either operational or research contexts. Interventions from operational contexts have shown promising results, though findings should be interpreted with some caution given that results cannot be considered generalisable. These results are, nonetheless, promising and demonstrate that it is possible to effectively prevent and treat wasting through integrated packages.

STUDY LOCATION AND NAME	INTERVENTIONS	CONTEXT	RESULT	LESSONS LEARNED	STUDY LIMITATIONS
BURKINA FASO: Creating homestead agriculture for nutrition and gender equity (CHANGE) in Burkina Faso [1] (2016)	▶ Village model farms established for teaching purposes ▶ Inputs provided: seeds, seedlings and small tools ▶ BCC strategy used to increase health and nutrition-related knowledge	▶ High rates of U5 anemia ▶ Rates of wasting, stunting and underweight are high	▶ Study finished in 2016 but no results published online	▶ The vegetables produced were new to many farmers in Burkina Faso. ▶ Growing traditional African vegetables (TAVs) can improve nutrition and resilience ▶ Farmers may hesitate to adopt unfamiliar crops like TAVs ▶ In marginal environments, there is little scope for replanting if a crop fails, so many farmers are averse to risks	▶ Data unavailable
BURKINA FASO: "LRRD" program to strengthen the resilience of communities vulnerable to food and nutritional insecurity in northern border areas of Burkina Faso [2] (2019)	▶ Targeting poor rural households. These households receive a combination of four interventions: ▶ Cash Grant ▶ Cash Grant + Asset ▶ Cash grant + asset + nutrition (fortified food) ▶ Community-based intervention ▶ 168 villages randomly assigned to comparison (community-based component only) or participation (randomly assigned to different intervention groupings) group	▶ More than 40% of people in Burkina Faso live on less than $1.90/ day (International benchmark for extreme poverty) ▶ Seasonal agriculture employs 80% of active labor market (leaves many parts of country vulnerable during lean season) ▶ 21% of U5 suffer from chronic malnutrition, 10% of U% suffer from wasting ▶ Child mortality was more than double the global average	▶ Preliminary results include: ▶ Wasting decreased with an average statistical difference only in the cash + livestock + flour group ▶ Household food consumption increased by 54,000 FCFA/year (representing 80% of transfers made) ▶ Improvement in household food diversity (vs. control group) is statistically significant in the Cash Grant group	▶ The multi-sectoral nature of this project results in significant reductions in severe food insecurity, wasting and stunting ▶ The research protocol is generally followed by the implementing partners ▶ The program has the most impact on populations most at risk	▶ Data unavailable
CHAD: Water, livestock, and malnutrition findings from an impact assessment of Community Resilience to Wasting program in Chad [3] (2017)	▶ Nutrition ▶ Health ▶ WASH ▶ Food, income and markets (FIM)	▶ Dar Sila Region of Eastern Chad: ▶ Highly variable rainfall ▶ Seasonal food insecurity ▶ High prevalence of wasting	▶ CRAM children performed significantly better than non-intervention group: ▶ Lower prevalence of wasting ▶ Higher WHZ ▶ Lower prevalence of chronic malnutrition (stunting) ▶ Higher height-for age z-scores (HAZ) ▶ Lower prevalence of illness ▶ Positive WASH indicator outcomes	▶ Continuing high rates of wasting, and the increases seen in the non-intervention settlements, are causes for concern and indicative of the extreme vulnerability of these communities as they emerge from more than a decade of protracted crises ▶ Possible source of water contamination is the concentration of cattle in a village. The association between village cattle density and child nutritional status is a possible explanation of contamination	▶ Study did not follow the same children ▶ Timing of the survey needs improvement - it was assumed that the peak for malnutrition was at the very end of the hunger gap but, in fact, a peak might occur preceding the hunger gap ▶ Sampling strategy used impacts interpretation of findings - inclusion of only the lowest wealth ranking might make it appear as if malnutrition rates are significantly higher than what is found in more representative surveys

1. IFPRI and Helen Keller International (2016). Creating Homestead Agriculture for Nutrition and Gender Equity (CHANGE) in Burkina Faso. https://clinicaltrials.gov/ct2/show/record/NCT02236468?view=record -
2. https://ec.europa.eu/trustfundforafrica/region/sahel-lake-chad/burkina-faso/programme-lrrd-de-renforcement-de-la-resilience-des-communautes_en
3. Marshak, A., Young, H., and Radday, A. (2017). Water, livestock and malnutrition findings from an impact assessment of Community Resilience to Wasting program in Chad.

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DRC: Undernutrition prevention approaches: A case study in Bunyakiri, South Kivu Province, DRC [4] (2019)	▶ WASH ▶ Local agricultural production and food security ▶ Maternal supplementation ▶ Early detection and treatment of wasting	▶ Stunting 71.1% ▶ Low coverage of basic social services ▶ Food insecurity ▶ Low access to land (land conflict), insecurity, poor road conditions ▶ Inappropriate cultural behaviors	▶ Wasting reduced from 7.5% to 4.6% in one year	▶ Multi-stakeholder and multi-sectoral response improved program uptake and impact ▶ Stakeholder coordination and information management improved efficiency and sustainability ▶ Community ownership facilitated a greater stakeholder commitment to the program	▶ Data unavailable
MALI: Incorporating prevention into CMAM (PROMIS project): Insights from Mali and Burkina Faso [5] (2019)	▶ BCC ▶ SQ-LNS ▶ Treatment of SAM	▶ Both health districts have one urban HC; the other HCs are situated in semi-urban or rural settings. ▶ the prevalence of Wasting was 12.9% ▶ the prevalence of SAM is 3.5% (one of highest in Mali)	▶ Number of new cases of wasting reduced in Mali by 29% ▶ Coverage for screening for wasting increased by 20 and 40 percentage points, reaching 48% in Burkina Faso and 63% in Mali	▶ LNS-SQ was a strong incentive for caregivers to visit screenings platforms, increasing program coverage ▶ There is still lack of availability of treatment programs for wasting, creating barriers for children to access care ▶ Community vs. health facility delivery platforms offer different benefits ▶ Further research needs to be conducted to test the operational feasibility and effectiveness of a community-based model	▶ The referral of AM cases by research team (for ethical reasons) during monthly measurements in the longitudinal study might have interfered with usual CMAM activities ▶ The outcomes presented by child age also reflect seasonal variations because of the closed cohort design
MAURITANIA: Effect of joint CMAM/IYCF implementation on the reduction of wasting in Mauritania [6] (2019)	▶ Care groups ▶ Local agricultural production ▶ Enriching of local flours ▶ Community screening ▶ Treatment of SAM	▶ Government adopted 2016 multi-sectoral nutrition plan ▶ Peaks in wasting happen during lean seasons ▶ Poor IYCF practice	▶ Wasting reduced from 16.4% to 13.1%	▶ Ongoing scale up of joint IMAM/IYCF interventions + WASH reduces levels of wasting in children U5 ▶ Scaling up to national levels has the potential to sustainably reduce wasting in Mauritania	▶ Data unavailable
NIGER: Effect of Preventive Supplementation with Ready-to-Use Therapeutic Food on the Nutritional Status, Mortality, and Morbidity of Children Aged 6 to 60 Months in Niger -A Cluster Randomized Trial [7] (2009)	▶ RUTF Blanket distribution for 3 months (1 sachet/day): August to October ▶ Outpatient Therapeutic Program ▶ Stabilization Centre ▶ Health care (e.g., treatment for malaria and non-complicated diarrheal diseases)	▶ Maradi has some of the highest rates of malnutrition in the country ▶ Decrease in food quantity and quality in the months preceding the harvest (August to October) ▶ Household food production is linked to rain-fed agriculture	▶ 36% reduction in the incidence of wasting ▶ 58% reduction in the incidence of severe wasting ▶ No reduction in mortality	▶ Results are applicable to other settings of acute food insecurity, where access to food is limited due to emergency or seasonal conditions and where sort-term food supplementation is required for the prevention of wasting	▶ Small number of clusters may have limited the benefits of randomization resulting in unmeasured confounding ▶ Study was unblinded with respect to intervention assignment ▶ Study not able to collect complete response data on all children ▶ Study unable to measure dietary intakes at recruitment or during the intervention
NIGER: Preventing Wasting Among Young Children in Crises: A Prospective Intervention Study in Niger [8] (2014)	▶ LNS-HQ or LNS-MQ or Super Cereal Plus (SC+) with cash ▶ SC+ and family food ration ▶ LNS-HQ or SC+ only ▶ Cash only	▶ High burden of malnutrition ▶ Regularly experience a "hunger gap" in the months before the annual harvest ▶ Timing and duration of hunger gap is dependent on timing and duration of annual rains ▶ Children are vulnerable to malnutrition during hunger gap	▶ Incidence of MAM was twice lower in the strategies receiving a food supplement combined with cash compared with the cash only strategy or with the supplementary food only groups ▶ Incidence of SAM was three times lower in the SC+ and cash group compared with the SC+ only group	▶ Preventive distributions combining a supplementary food and cash transfer had a better preventive effect on MAM and SAM than strategies relying on cash transfer or supplementary food alone	▶ Data not collected on all possible factors that could have influenced the incidence of malnutrition and mortality ▶ Procedures were implemented to reduce measurement bias ▶ Individual or village randomization would have been ideal ▶ 4-month follow up of study was too short ▶ Study period did not overlap with hunger gap in study area

4. UNICEF, (2019). Undernutrition prevention approaches: A Case Study of Bunyakiri, South Kivu province, DRC - **5.** IFPRI and Helen Keller International. (2019). Incorporating prevention into community-based management of wasting (PROMIS project): Insights from Mali to Burkina Faso. - **6.** UNICEF et Ministere de la sante Mauritanie. (2019). Effet de la mise en oeuvre conjointe PCIMA/ANJE sur la reduction de la malnutrition aigue en Mauritanie.
7. Isanaka S, Nombela N, Djibo A, et al. Effect of preventive supplementation with ready-to-use therapeutic food on the nutritional status, mortality, and morbidity of children aged 6 to 60 months in Niger: a cluster randomized trial. JAMA. 2009;301(3):277–285. doi:10.1001/jama.2008.1018 - **8.** Langendorf C, Roederer T, de Pee S, et al. Preventing wasting among young children in crises: a prospective intervention study in Niger. PLoS Med. 2014;11(9):e1001714. Published 2014 Sep 2. doi:10.1371/journal.pmed.1001714 -

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NIGER: Identification of growth trajectories by latent class model from birth to 24 months in the 1,000 days program, an interventional cohort in rural Niger [9] (2019)	▶ First 1,000 days approach (ANC, maternal supplementation, immunization, SMC, SQ-LNS)	▶ Fragile health care system ▶ Wasting 19.2% ▶ Stunting 63% ▶ Infant mortality 60/1,000 live births	▶ Wasting prevalence remained below the national average	▶ Weight trajectory is associated with the amount of SQ-LNS ration received ▶ High participation rate and high vaccination ration during the 2-year follow up; SQ-LNS may serve as an incentive for program adherence and vaccination coverage ▶ Programs combining preventive and curative interventions need further study to determine the most cost-effective approach	▶ No control group was used due to previous research in similar region of Niger showing malnutrition prevention from routine provision of LNS
NIGER: Sprout – a prototype to prevent post-harvest loss and SAM for subsistence farming families [10] (2019)	▶ 3 approaches tested: ▶ Unconditional cash nudges ▶ Trusted mobilizers to promote positive practices ▶ A communal warehouse	▶ Rodents, insects and/or fungus contribute to post-harvest losses in storage facilities ▶ Financially unstable subsistence farmers ▶ Lack of knowledge on caregiving practices that reduce SAM	▶ SAM prevalence (3-36 months old) reduced from 3.5% to 1.75% ▶ SAM and MAM prevalence in participants decreased whereas SAM and MAM prevalence increased in non-participants	▶ High degree of interest in the warehouse among farmers ▶ Further research could help understand whether interest for similar warehouse can be sustained ▶ Continue using a payment model to ensure the service is useful and interesting for farmers ▶ Linking SAM prevention and post-harvest loss reduction are not necessarily the right fit	▶ Small number of participants ▶ Lack of randomization
SENEGAL: Health and nutrition activities in a rural health zone in Senegal [11] (2019)	▶ Grandmother approach ▶ Father/husband education clubs ▶ WASH activities ▶ Screening and treating malnourished children ▶ Savings groups	▶ Grandmothers have strong/ influential role regarding caregiving practices in the household ▶ Husbands have economic and decision-making power in the household	▶ Number of new cases (incidence) of wasting reduced in one-year	▶ Integration of the interventions is considered most effective ▶ Integration of the interventions is also considered more difficult	▶ Data unavailable

9. Saillet, Laure et al. (2019). Identification of growth trajectories by latent class model from birth to 24 months in the 1,000 days program, an interventional cohort in rural Niger.
10. IRC. (2019). SPROUT Summary Report. A prototype to prevent post-harvest loss and severe wasting for subsistence farming families.
11. Catholic Relief Services. (2019). Activite Sante et Nutrition en zone rurale du Senegal.

i. Shekar, M. et al. (2017) An Investment Framework for Nutrition: Reaching the Global Targets for Stunting, Anemia, Breastfeeding, and Wasting. The World Bank. doi: 10.1596/978-1-4648-1010-7 - **ii.** Khara T, Dolan C. Technical briefing paper: Associations between wasting and stunting, policy, programming and research implications. Oxford: Emergency Nutrition Network; 2014 (http://www.ennonline.net/ waststuntreview 2014, accessed 13 October 2014).
iii. Carr, S. and DeBeni, D. (2019). Humanitarian Response to Nutrition in the Sahel: Options Paper. MQSUN+ Report.