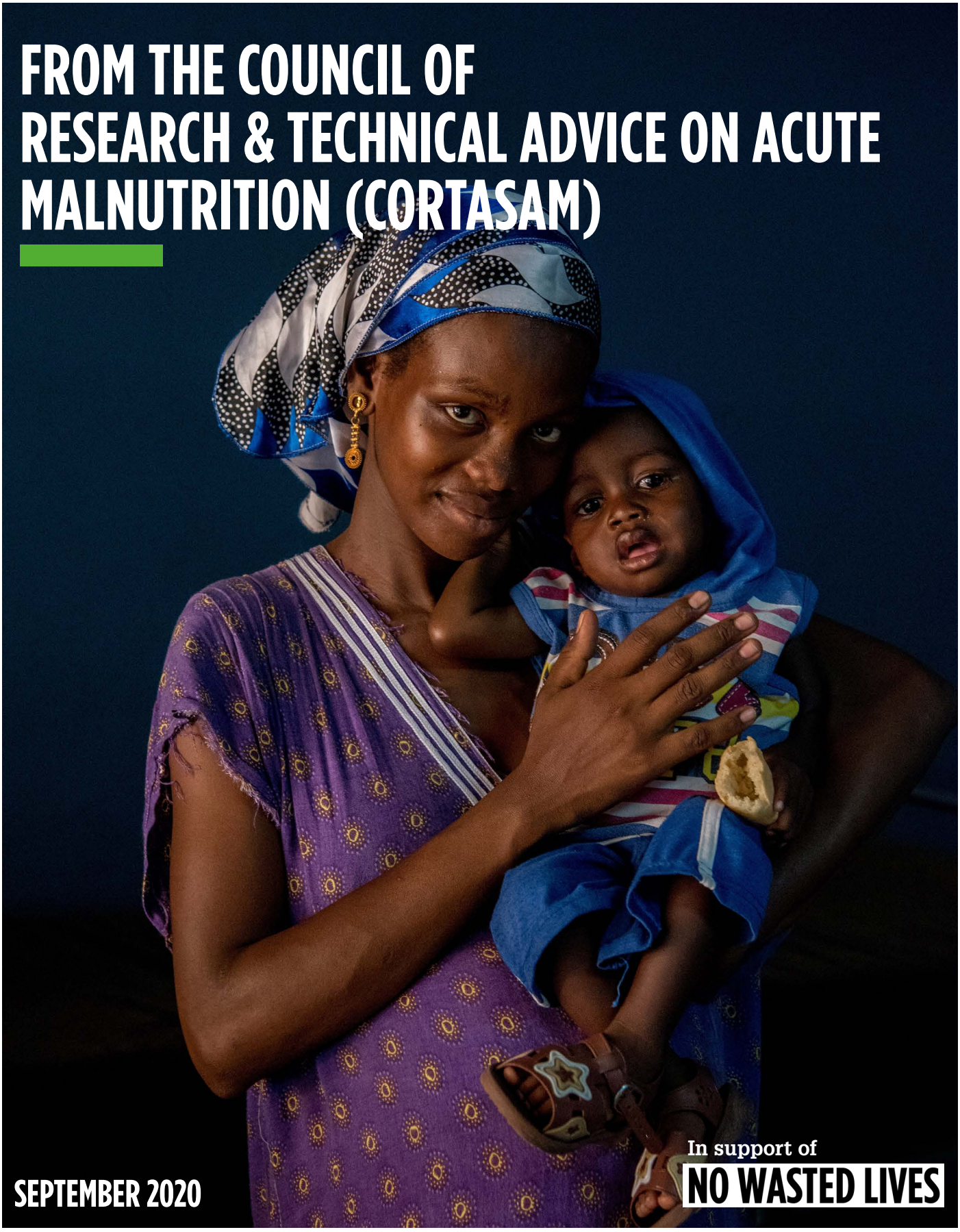
GUIDANCE TO IMPROVE THE COLLECTING AND REPORTING OF DATA ON RELAPSE IN CHILDREN FOLLOWING TREATMENT IN WASTING PROGRAMMES

FROM THE COUNCIL OF RESEARCH & TECHNICAL ADVICE ON ACUTE MALNUTRITION (CORTASAM)



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BACKGROUND

In mid-2017, the Council of Research & Technical Advice on Acute Malnutrition (CORTASAM) led the implementation of a global research prioritisation exercise for the treatment of wasting[1]. Over 300 individuals from 63 countries and 167 organisations participated in this survey. This exercise identified key research areas that are priorities to achieve scale-up of treatment of wasting by 2020[2].

One of the top five global research priority questions focuses on relapse rates post-discharge from treatment for wasting; namely: **"What are the rates and causal factors of post-discharge relapse from treatment across contexts? How can relapse be reduced?"** A recent literature review[3] focussing on relapse following treatment of wasting found very little data in this area, as well as considerable variation in both the definition of relapse and in the approach to measuring it across research and programmes. Timescales for defining relapse varied greatly. Studies used either active follow-up or passive recording of readmissions in order to assess relapse, and almost all studies had no comparator group. This means that the total burden of relapse across contexts remains unclear and the potential impact of a successful relapse intervention on overall burden is unknown.

There are a number of considerations in the implementation of programme guidance that also affect relapse. The current World Health Organization (WHO) recommendations are to treat a severely wasted child to full recovery (weight-for-height Z-score [WHZ] ≥-2 or mid-upper arm circumference [MUAC] ≥125mm and no oedema for at least 2 weeks) and to admit and discharge children on the same anthropometric criteria. These recommendations are applied inconsistently across programmes which can affect whether a child relapses or not. Furthermore, discharge criteria in some national protocols deviate from the WHO 2013 recommendations. A simulation of different discharge criteria for a cohort of severely wasted children in community-based treatment in India found large variation in cured rates for different discharge criteria compared to WHO guidelines[4]. In addition, referrals between services across the continuum of care limit traceability. In instances where children are referred to a moderate wasting treatment programme to complete their recovery, lack of follow-up and referral tracking can limit the capture of final outcomes. This similarly applies to referrals of stabilised complicated cases from inpatient to outpatient services.

In order to first understand the burden of relapse and the urgency with which it needs to be addressed, more research and programmes need to capture data on relapse and do so in a standardised format. This guidance is aimed at facilitating that process to help coordinate greater global learning on relapse rates and excess burden across contexts.

This statement has been developed based on the latest evidence focusing on relapse following treatment of wasting, with a focus on relapse back to severe wasting. As further research and programmes focus on expanded admission criteria and combined protocols that provide treatment across the continuum of wasting, the statement also provides guidance on reporting of relapse to moderate wasting and after treatment for moderate wasting where children suffering from relapse may be at higher morbidity and mortality risk. Given the currently limited standardisation of programming for moderate wasting and the limited knowledge of relapsing to moderate wasting, this is an area for further work to strengthen the evidence base and expand available guidance.

The proposed standardisation is not without limitations. For example, the capacity to identify wasting correctly (the positive predictive value) with anthropometric measures currently used depends not only on precision of anthropometric measurement but also its prevalence in the population, thus creating challenges for comparing relapse across different settings with different levels of wasting creates challenges. These limitations are most applicable to moderate wasting as data collected on severe wasting is likely to be more reliable and comparable across settings. However, in the absence of standardisation, no comparisons can be made at all, so even a standardised definition with limitations represents an improvement in our efforts to understand and tackle relapse to severe and moderate wasting after receiving treatment.

1 We use the term 'wasting' as synonymous with the previously more widely used term 'acute malnutrition'. Both terms are defined here as weight-for-height z-score (WHZ) <-2, mid-upper arm circumference (MUAC) <125mm and/or presence of oedema. Full recovery from wasting is defined as WHZ ≥-2 or MUAC ≥125mm and no oedema for at least 2 weeks.

2 Preliminary findings and further publications are available at www.nowastedlives.org.

3 Stobaugh H, et al. Relapse after severe acute malnutrition: a systematic literature review and secondary data analysis. Matern Child Nutr. 2019;15:e12702.

4 Guesdon B, Roberfroid D. Substandard discharge rules in current severe acute malnutrition management protocols: An overlooked source of ineffectiveness for programmes? Field Exchange 2019;60:29-32.

RECOMMENDATIONS FOR STANDARD DEFINITIONS

CORTASAM recommends the application of a standard, harmonised definition of relapse for both operational programming and research studies. This definition builds on the literature review on relapse to severe wasting after treatment that found that the majority of relapse in the identified studies occurred within six months of exiting treatment.

STANDARD DEFINITIONS OF RELAPSE FOLLOWING TREATMENT FOR SEVERE WASTING:

We recommend **relapse to severe wasting following treatment for severe wasting** to be defined as "an episode of severe wasting within 6 months of being discharged from treatment for severe wasting as per current recommended criteria"[5].

Current WHO recommendations for admissions and discharge criteria need to be applied consistently to compare relapse across settings. The anthropometric definition of severe wasting as a case of relapse should be the same criteria as used for admission into the specific programme, which may vary by programme but will be either WHZ <-3 and/or MUAC ≤115mm and/or or bipedal oedema.

In situations where full recovery to WHZ >-2 and MUAC ≥125mm is not completed in a single treatment programme, improved unique tracking should be implemented to ensure that outcomes are tracked across the referral system and continuum of care (from severe wasting to moderate wasting treatment programmes or for complicated cases).

STANDARD DEFINITIONS OF RELAPSE FOLLOWING TREATMENT FOR MODERATE WASTING:

We recommend relapse to moderate wasting following treatment for moderate wasting to be defined as "an episode of moderate wasting within 6 months of being discharged from treatment for moderate wasting as per current recommended anthropometric criteria".

We recommend **relapse to moderate wasting following treatment for moderate wasting** to be defined as "an episode of moderate wasting within 6 months of being discharged from treatment for moderate wasting as per current recommended anthropometric criteria"[5].

This should be divided into two categories of relapse:

- Relapse in children who were referred from severe wasting treatment programmes; and
- Relapse in children who were direct admissions of primary moderate wasting cases.

The anthropometric definition of moderate wasting as a case of relapse should be the same criteria as used for admission into the specific programme, which may vary by programme but will be either WHZ between -3 and -2 and/or MUAC between 115mm and 125mm without complications.

The following additional measures of relapse should also be included to provide a more detailed understanding of relapse to wasting across the continuum of care. This includes:

- **Relapse to severe wasting following treatment for moderate wasting** as defined as "an episode of severe wasting within 6 months of being discharged from treatment for moderate wasting as per current recommended criteria[5]".
- **Relapse to moderate wasting following treatment for severe wasting** as defined as "an episode of moderate wasting within 6 months of being discharged from treatment for severe wasting as per current recommended criteria[5]".

ONGOING EPISODES, REGRESSION, AND REOCCURRENCE:

These definitions of relapse to wasting following treatment for severe or moderate wasting exclude cases that default during treatment and those who are discharged without meeting the current recommended discharge criteria. Children who are identified as having severe or moderate wasting within the 6 months after exit from treatment before reaching recommended criteria (i.e. either due to defaulting or being discharged without meeting recommended anthropometric criteria) should be considered as **"ongoing episodes"** as they never recovered from wasting or cases of **"regression"** as they regressed to a more severe form of wasting after incomplete recovery. These cases should be noted as distinct from relapse. Children who experience new episodes of wasting between 6 and 12 months post discharge should be considered as **"reoccurrence"** and should be reported when possible as distinct from relapse.

5 As per current standard WHO guidelines: upon reaching WHZ ≥-2 or MUAC ≥125mm and no oedema for at least 2 weeks.

RECOMMENDATIONS FOR STANDARD MEASUREMENT IN RESEARCH

CORTASAM recommends standardised measurement of relapse in both operational programmes and research studies, where feasible.

FOLLOW-UP POST-DISCHARGE/EXIT FROM TREATMENT: It is recommended that all wasting research studies follow children at regular intervals (e.g. monthly) for a minimum of 6-months post-discharge/exit from treatment.

Longer follow-up through 12-24 months, or even longer, is strongly recommended wherever possible to improve the available data on longer-term outcomes, which are currently limited. This is good practice to assess the effectiveness of any new intervention on sustained recovery and long-term outcomes. Ideally, a range of anthropometric indicators should be measured at discharge from treatment and follow-up (including MUAC, WHZ, height-for-age [HAZ], and weight-for-age [WAZ]). Where monthly follow-up and measurement of children is not feasible, alternative approaches like the use of the FamilyMUAC approach[6] should be considered to monitor the child's status and refer to a community health worker or facility if relapse is detected.

REPORTING: In research settings, relapse indicators should be reported as a proportion as well as an incidence rate. Where:

- The **proportion** is defined as the number of children who relapse out of the total number of children discharged as cured from 0-3 months and 0-6 months post-discharge.
- The **incidence rate** is defined as the total number of episodes of relapse per person-time (e.g. 100 person-months).

Both indicators are recommended for all research studies and publications on wasting with post-discharge/exit from treatment follow-up. Ideally, all such studies should also include a group of children in the community (matched for sex and age) who did not experience wasting. This group should be followed during the same time period as the children who are followed after discharge/exit from treatment in order to support the interpretation and contextualise the relapse rate observed (i.e. a comparison of the relapse rate among post-treatment children with the rate of newly acquired episodes of wasting among the comparison group).

If such a comparison group is not feasible, the relapse rate could be reported in the context of known wasting prevalence and incidence where available (or only severe or moderate wasting prevalence if the studies are limited to those particular groups of wasting cases) in the region in order to estimate the excess cases of wasting (severe or moderate) due to increased vulnerability post-treatment.

"Reoccurrence" of wasting between 6 to 12 months after exit from treatment and those who experience **"ongoing episodes"** or **"regressions"** within six months after exiting treatment programme before reaching recommended criteria should also be reported in the same format (i.e. as a proportion and rate) when possible.

RECOMMENDATIONS FOR STANDARD MEASUREMENT IN PROGRAMMES

FOLLOW-UP POST-DISCHARGE/EXIT FROM TREATMENT: In programme settings, ideally, wasting treatment programmes should follow-up children at regular intervals (e.g. monthly if feasible) for at least 6 months post-discharge to assess anthropometry and enquire about any relapses.

This can be done by requesting caregivers to return to the location of the treatment programme for regular re-assessments, ideally monthly during the first 6 months post-discharge. Community health workers can also be utilised to actively conduct anthropometric assessments in the community. If this is not feasible, at minimum, caregivers should be asked upon admission to the wasting treatment programme whether they received treatment for moderate or severe wasting in the past 6 months.

Children who are readmitted for treatment of wasting within 6 months of being discharged as recommended should be considered as part of a "readmission rate". The readmission rate is likely to be an underestimate of true relapse and reoccurrence because it does not capture the portion of children who relapse but do not present for treatment (due to death, lack of access, etc.).

6 FamilyMUAC refers to the training of household members to detect deteriorations in nutritional status, including by using MUAC tapes. More information on the FamilyMUAC approach is available at https://acutemalnutrition.org/en/Family-MUAC.

REPORTING: Relapse may not be practical to measure and report for many programmes due to the need for regular active case follow-up. However, a "readmission rate" is also an important and measurable indicator for programmes that will capture part of the total relapse burden and should be defined as "readmission to treatment for (moderate or severe) wasting within 6 months of being discharged from treatment as per current recommended anthropometric criteria[5]". Where different discharge criteria are used it would still be useful to capture this information, as it could help inform if different discharge criteria impact on whether children are readmitted. However, where this information is reported it is important to clarify that this is different from the readmission rate as per the above definition. "Reoccurrence" of wasting between 6 to 12 months after exit from treatment and those who experience "ongoing episodes" or "regressions" within six months after exiting treatment programme before reaching recommended criteria should also be recorded when possible.

MINIMUM STANDARD: Programme managers should request reporting of the relapse and readmission rate alongside other standard SPHERE indicators. As available data on relapse rates improves, it is hoped that a minimum standard for relapse rates can be developed. In the meantime, it is recommended that programs should measure relapse, explore the causes, seek to progressively decrease it, and document and share these experiences.

FEEDBACK

Feedback on this guidance is welcomed from researchers and programme implementers alike. If you would like to submit feedback, please e-mail info@nowastedlives.org. We hope that this guidance fills an urgent gap in our definition and recording of relapse and other long-term post-treatment outcomes; however, a future iteration of these guidance will be considered based on feedback.

If you are currently conducting, or considering, research that would include measurement of relapse, please share your work with No Wasted Lives and the State of Acute Malnutrition. We also recommend sharing of programme experiences and data collected on relapse through public channels.

This statement has been written and endorsed by the following members CORTASAM[7]:

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The authors alone are responsible for the views expressed in this statement and they do not necessarily represent the decisions, policy or views of their organisation.

7 And with further contributions from Zita Weise Prinzo (World Health Organization)