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Thesis Title: Predicted implications of using percentage weight gain as single discharge criterion in management of acute malnutrition in rural southern Ethiopia.

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ABSTRACT

Problem statement/objective
Community-based management of acute malnutrition (CMAM) uses mid-upper arm circumference (MUAC) to screen and admit children with non-edematous acute malnutrition. A weight gain increase of 15% is recommended as discharge criterion, intended to secure sufficient weight gain. This study examined how use of percentage weight gain as discharge criterion would affect the nutritional status of children admitted into a community-based management programme for acute malnutrition in rural southern Ethiopia.

Methods
Non-edematous children (n=631) aged 6-59 months and with a MUAC <125 mm admitted to a CMAM program southern Ethiopia were included in the study. By simulation, 10, 15, and 20% weight was added to their admission weight and their predicted nutritional status by weight-for-height z-score (WHZ) at each weight gain target was determined. It was then evaluated as to what extent the different percentages of weight gain would facilitate nutritional recovery to the thresholds of severe or moderate wasting according to WHO definitions.

Findings
Applying the recommended target of 15% weight gain would have resulted in 9% of the children with admission MUAC <115mm still being moderately or severely wasted at discharge. All of those who predicted to remain severely wasted had <-4 WHZ at admission. Among children with admission MUAC 115-125mm a 10% of weight gain would have been sufficient to generate a similar proportion of recovery. Increasing the percentage weight gain target in the MUAC groups to 20 and 15% respectively would largely resolve wasting but likely also to lead to increased program costs by keeping already recovered children in the program.

Discussion
Other recent research has shown that use of percentage weight gain for discharge results in shorter lengths-of-stay for the more malnourished children and longer lengths

of stay for the less malnourished children. In this study the nutritional status at theoretical discharge according to current recommendations was inadequate for a portion of children with the poorest condition at start of treatment. In the results, predicted rather than observed outcome is presented in a best-case scenario, something that may underestimate the portion of children remaining wasted after treatment.

Conclusion

Use of percentage weight gain as a single discharge criterion is not proportionate to nutritional need for sufficient recovery among those with severest condition. There is a need for further research to determine suitable discharge criteria in CMAM programs using MUAC for screening and admission.