



# Programmatic Implications of a Revised Classification System for Undernutrition

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Gausman et al<sup>1</sup> argue that multiple measures of anthropometric failure (AF) are needed to assess undernutrition in the country context and design public health and nutrition programs to reach the most economically disadvantaged children younger than 5 years. But in practice, how can programs use information on AF to improve delivery of crucial interventions?

Anthropometric failure is a collective label for stunting (height-for-age), wasting (weight-for-height), and underweight (weight-for-age) outcomes, which serve as proxies for undernutrition in the absence of nutritional intake data. Although wasting and underweight are caused by both short-term and long-term nutritional insufficiency as well as disease, usually stunting does not result from short-term insufficiency.

Gausman et al<sup>1</sup> used Demographic and Health Survey (DHS) data from 56 low- and middle-income countries to compare different measures of AF. Their analysis looks at the 3 conventional measures of AF (stunting, underweight, and wasting rates); an alternative classification system called the Composite Index of Anthropometric Failure (CIAF), which aggregates the 3 conventional measures into a single indicator; and a disaggregated measure entitled Categories of Anthropometric Failure (CAF) that quantifies the proportion of children who have combinations of the 3 conventional measures.

The CAF looks at the disease burden from 3 combinations of AFs: stunting, wasting, and underweight, stunting and underweight, and wasting and underweight. A fourth combination, stunting and wasting without underweight, is not possible. Stunting only, wasting only, and underweight only are also theoretical options. Because the mortality impact is clearest in the stunting, wasting, and underweight group, this indicator could be a primary focus for nutrition and health programs.

The analysis found significant differences in estimates of children with undernutrition depending on the choice of measure. Substantial overlap between the 3 conventional measures suggests that children may experience 1 or multiple failures at different times in their lives. Focusing on overall prevalence of stunting, underweight, and wasting only, without disaggregation, risks neglecting children with coinciding AFs. The children with simultaneous AFs are obviously more disadvantaged and have increased risk of poor health outcomes (evidence suggests that at least coinciding stunting, wasting, and underweight increases mortality).<sup>2</sup> These children are also likely to be the hardest for programs to reach. The analysis did not stratify by age or sex, and it would be interesting to explore whether younger children (eg, 6-11 or 6-23 months) have a different profile than older children and whether there are differences between girls and boys. Nevertheless, more information on the association between multiple, concurrent failures (as defined by the CAF and other measures) will help public health and nutrition program managers address inequities in delivery and contribute toward global goals, such as the United Nations' Sustainable Development Goal (SDG) Target 2.2, which seeks to end all forms of malnutrition by 2030.

How can information on CAF combinations inform the way health and nutrition programs are delivered? The study findings suggest Niger as an example of a country with a large proportion of the overall burden of AFs (7.5%) is owing to coinciding stunting, wasting, and underweight. This contrasts with bordering Benin, which has a similar overall CIAF burden (57.1% in Benin and 56.0% in Niger) but only half the rate of stunting, wasting, and underweight (around 3.6%). Benin instead has a larger burden of stunting only, about 29% compared with Niger's 15.7%. Sex differences might explain some of this variation. Similarly, Burkina Faso and Guatemala both have a CIAF of 47.3%, but

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Burkina Faso has a far larger proportion of children experiencing all 3 failures simultaneously: 4.6% compared with Guatemala's 0.5%. Like Benin, Guatemala has a larger proportion of malnourished children who have stunting only, around 35%. Moreover, both Niger and Burkina Faso have a larger share of undernourished children in the stunting only and wasting only group than comparable countries, suggesting unaddressed inequities.

Addressing these inequities extends beyond ensuring sufficient interventions to separately address stunting, wasting, and underweight. The connection between low birth weight and later undernutrition emphasizes the importance of addressing undernutrition throughout the lifecycle from birth to pregnancy.<sup>3</sup> A combination of interventions is important as well as health and nutrition programs addressing the underlying factors of undernutrition. Enhanced efforts are required to reach the most disadvantaged and hard-to-reach children with improved diets and prevention, and therapeutic interventions where required. Children who have multiple AFs presumably are also losing out on health and nutrition services, which would emphasize the importance of multisector approaches. To address underlying causes of undernutrition, governments must therefore strengthen essential systems simultaneously, particularly food, health, and social protection systems.

Governments can take action to address problems of inequity in undernutrition by:

- Investing in ways to identify children who have multiple AFs, particularly stunting, underweight, and wasting, through strengthened national, regional, and district capacities for planning, cross-program integration, and service delivery.<sup>4</sup> The CAF based on DHS data could be a useful starting point.
- Improving the availability and uptake of quality, high-impact nutrition interventions in the first 1000 days of life, particularly for the group of children experiencing multiple AFs. Introduce integrated intervention packages.<sup>5</sup>
- Exploring links between food, health, social protection, and education systems to improve reach to the most disadvantaged children.
- Facilitating ownership and improved management of nutrition services at all levels, eg, via government self-financing, strategic contributions from development partners, and a strengthened supply chain for essential nutrition commodities.
- Supporting community engagement and social mobilization to address negative social norms and create demand. This is possible working closely with local level authorities, civil society organizations, the private sector, and religious leaders.<sup>6</sup>

Although such strategies are important in all contexts, it is essential that they are delivered at scale where a large share of undernourished children experience multiple failures. The CAF could improve visibility on inequities and might prove to be a useful benchmark and tracker of program performance.

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## ARTICLE INFORMATION

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