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Management of acute malnutrition in young infants and young children: New guidelines from the World Health Organization and remaining challenges

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PR drafted the manuscript. SSG WLC WRG SS and AVS critically revised the manuscript. All authors approved the final version. PR is responsible for and guarantees the overall content.

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Wasting and nutritional edema, often referred together as "acute malnutrition," are life-threatening nutritional disorders that affect infants and young children under 5 years. Over the last 25 years, significant advances have been made in managing acute malnutrition, including improved inpatient protocols for severely ill children and the formulation of ready-to-use therapeutic foods (RUTFs) which have expanded opportunities for management beyond the inpatient setting to community-based programs for children with severe acute malnutrition (SAM). More recent advances have included the incorporation of frontline workers into national and regional systems to detect and treat acute malnutrition; greater recognition of the dynamic nature of growth faltering and weight loss, including relapse after treatment for SAM.(1)

Despite these technical and clinical advances, global progress to eliminate acute malnutrition has been slow. In 2022, around 6.8 % of all children under 5 years old (45 million children) experienced wasting, short of the global 2025 target of 5%.(2) Against this background the World Health Organization (WHO) released new, updated guidelines on the management of wasting and nutritional edema on November 20, 2023. The current version is a much-needed update and major expansion from the last edition published in 2013. Areas of expansion include guidelines for supportive care of infants with risk factors for poor growth and development, integrated care of both caregivers and children, management of moderate acute malnutrition (MAM), and continuity care after inpatient discharge.(3)

The most important policy implication of the new guidelines is the inclusion of Good Practice Statements – plain language and sensible summaries of high-impact interventions and approaches. Many of these Good Practice Statements push for more timely, comprehensive

approaches, with a particular focus before the onset of acute malnutrition. The evidence provided in these guidelines provides Ministries of Health with the evidence they need to allocate resources to social programs upstream rather than focusing exclusively on the acute phase of malnutrition.

Similarly, from the perspective of community-based or social pediatrics, one of the most welcome developments is the vigorous focus on integrated care of both the caregiver and the infant, and on the need for wrap-around services and continuity of care after inpatient discharge for acute malnutrition. These two points are aimed at the early identification of risk factors that impact child and caregiver well-being and prevention of nutritional relapse after inpatient discharge, two areas where improvements are needed to progress towards global wasting targets.

At the same time, it is important to reflect that many of these new guidelines are aspirational, and it will require significant work by governments, policy and advocacy organizations, and clinicians to operationalize. As the WHO's press release states: "[The] WHO is working closely with UNICEF and the other UN agencies collaborating on the Global Action Plan to develop pragmatic operational guidance…"(4) We emphasize this point because as the focus on acute malnutrition expands more towards both prevention and post-acute care, realizing many of the new recommendations will require significant health system restructuring, resource allocation towards local health and nutrition management centers, and the development of new infrastructure and expansion of the healthcare workforce.

One example of these challenges is found in the Good Practice Recommendation A1 that "Mothers/caregivers and their infants less than 6 months of age at risk of poor growth and development should receive regular care and monitoring by health professionals." Guideline commentary goes on: "This…should be coordinated and delivered by a health professional (such as a doctor, nurse, midwife) capable of identifying and acting on any clinical deterioration…" There are many operational challenges to achieving this recommendation including: (a) pervasive sentinel-center, tertiary-care referral models which concentrate and restrict access to clinicians skilled in comprehensive assessment of infants and caregivers; (b) severe health workforce capacity constraints and time limitations; (c) lack of training in family-centered, collaborative care models; and (d) widespread but often unacknowledged cultural and linguistic barriers which lead many families and caregivers to resist facility-based care.

Another operational hurdle involves linking families with identified psychosocial needs to the necessary resources. The guidelines note that "Children with medical problems needing mid or long-term follow-up… and/or additional social factors (for example, household food insecurity, vulnerable household) have also been referred to appropriate care/support services care..." In settings where social support systems are limited or non-existent, this task becomes particularly daunting. Moreover, it is important to recognize that achieving sustainable and long-term improvements in these social determinants of health necessitates governmental action and policy changes.

One area of surprising omission in the new guidelines is the caregiver's experience and family-centered approach in the hospital setting. The language in the guidelines focuses on the

integrated care of the child and caregiver solely in the preventative and post-acute phases of malnutrition care. For those on the frontlines, it is commonplace that negative in-hospital experiences reverberate through communities and lead to significant resistance to inpatient treatment for SAM. These negatives may include overtly stigmatizing and discriminatory language and behaviors towards caregivers; visitation policies that isolate primary caregivers with their hospitalized child, leaving them to worry about other children left at home; and lack of leisure activities and other in-hospital support services.

Equity must be considered in the implementation of these guidelines and operationalized with intentionality, particularly when considering integrated care and wrap-around services. For instance, it is noted that "Health workers tasked with making these treatment decisions must have the training and expertise to recognize and act on the signs and symptoms described in this recommendation and detailed below." In many contexts, community-based services are provided by CHWs who are not always provided adequate training and mentorship. This problem is often exacerbated in rural areas resulting in decreased access to and quality of care. Systems and financing structures will need to be put in place so that providers have nutrition and pediatric-specific training, and have access to the appropriate support in rural communities. Otherwise, inequity in access to and quality of care will be widened. We hope that as these guidelines are operationalized, further attention is focused on equity; and that concrete, actionable recommendations are made for overcoming barriers to care, especially for those from distinct cultural or linguistic backgrounds and with prior negative experiences with biomedical care.

One final area that must be addressed is the fact that RUTFs, ready-to-use supplementary foods (RUSFs), and specially formulated foods (SFFs) feature extremely prominently in the guidelines both for SAM and for MAM. While not diminishing the body of scientific evidence supporting these products, it should be noted that they are largely produced in higher-income settings, often commercially, and sourced to countries through bilateral aid agreements and other forms of aid subsidy. In addition to the ethical challenges posed by the commercialization of global nutrition products, the use of these products to some degree contradicts healthy nutrition practices for children because of their high-energy, high-fat, and high-sugar composition.(5) In some settings such as India, which contains a large proportion of the global burden of acute malnutrition, concerns from clinicians and policy makers about how these products may displace whole food interventions and lead to a preference for processed foods has severely limited uptake. Guidance and advocacy are urgently needed to improve local, sustainable food solutions for acute malnutrition.

The updated WHO guidelines have the potential to dramatically curb the incidence of acute malnutrition and provide comprehensive community-based nutrition care. However, it is essential that the implementation of these guidelines is done thoughtfully and intentionally with full financial and administrative support from local ministries of health and implementing partners.

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New WHO Guideline on the prevention and management of acute malnutrition in infants and young children: remaining challenges

Rohloff Peter[1,2], Gupta Subodh S[3], López Canu Waleska[1], Rodríguez Gómez Wendy[1], Sridhar Shela[2], Venzor Strader Anahí[1,4]

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Contributorship:

PR drafted the manuscript. SSG WLC WRG SS and AVS critically revised the manuscript. All authors approved the final version. PR is responsible for and guarantees the overall content.

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Despite these technical and clinical advances, global progress to eliminate acute malnutrition has been slow. In 2022, around 6.8 % of all children under 5 years old (45 million children) experienced wasting, short of the global 2025 target of 5%.(2) Against this background the World Health Organization (WHO) released new, updated guidelines on the management of wasting and nutritional edema on November 20, 2023. The current version is a much-needed update and major expansion from the last edition published in 2013. Areas of expansion include guidelines for supportive care of infants with risk factors for poor growth and development, integrated care of both caregivers and children, management of moderate acute malnutrition (MAM), and continuity care after inpatient discharge.(3)

With the introduction of these new guidelines, a group of global health practitioners and child nutrition experts met to review the guidelines critically, with a particulary emphasis on emphasizing social pediatrics and child rights. Our primary goal was to offer insights into the

challenges of implementing these directives, drawing from our varied experiences in lower resourced settings around the world. Each team member conducted a thorough review of the guidelines and contributed key talking points, which were subsequently synthesized.

The most important policy implication of the new guidelines is the inclusion of Good Practice Statements – plain language and sensible summaries of high-impact interventions and approaches. Many of these Good Practice Statements push for more timely, comprehensive approaches, with a particular focus before the onset of acute malnutrition. These guidelines provide Ministries of Health and other stakeholders, including clinician organizations, civil society, and advocacy organizations, with the evidence they need to allocate resources to social programs upstream rather than focusing exclusively on the acute phase of malnutrition.

Similarly, from the perspective of social pediatrics and community-based and rights-based approaches, one of the most welcome developments is the vigorous focus on integrated care of both the caregiver and the infant, and on the need for wrap-around services and continuity of care after inpatient discharge for acute malnutrition. These two points are aimed at the early identification of risk factors that impact child and caregiver well-being and prevention of nutritional relapse after inpatient discharge, two areas where improvements are needed to progress towards global wasting targets.

At the same time, it is important to reflect that many of these new guidelines are aspirational, and it will require significant work by governments, policy and advocacy organizations, and clinicians to operationalize. As the WHO's press release states: "[The] WHO is working closely

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One example of these challenges is found in the Good Practice Recommendation A1 that "Mothers/caregivers and their infants less than 6 months of age at risk of poor growth and development should receive regular care and monitoring by health professionals." Guideline commentary goes on: "This…should be coordinated and delivered by a health professional (such as a doctor, nurse, midwife) capable of identifying and acting on any clinical deterioration…" Although the novel focus on prevention for infants younger than 6 months as praiseworthy, we should recognize that there are many operational challenges to achieving this recommendation including: (a) pervasive sentinel-center, tertiary-care referral models which concentrate and restrict access to clinicians skilled in comprehensive assessment of infants and caregivers; (b) severe health workforce capacity constraints and time limitations; (c) lack of training in family-centered, collaborative care models; and (d) widespread but often unacknowledged cultural and linguistic barriers which lead many families and caregivers to resist facility-based care.

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One area of surprising omission in the new guidelines is the caregiver's experience and family-centered approach in the hospital setting. The language in the guidelines focuses on the integrated care of the child and caregiver solely in the preventative and post-acute phases of malnutrition care. For those on the frontlines, it is commonplace that negative in-hospital experiences reverberate through communities and lead to significant resistance to inpatient treatment for SAM. These negatives may include overtly stigmatizing and discriminatory language and behaviors towards caregivers; visitation policies that isolate primary caregivers with their hospitalized child, leaving them to worry about other children left at home; and lack of leisure activities and other in-hospital support services. We should also consider the weighty economic direct and indirect costs that inpatient pediatric care imposes on families, including lost wages, the need to arrange childcare for siblings, and transportation costs. These expenses are often overlooked and continue to deter families from accessing care.

Equity must be considered in the implementation of these guidelines and operationalized with intentionality, particularly when considering integrated care and wrap-around services. For instance, it is noted that "Health workers tasked with making these treatment decisions must have the training and expertise to recognize and act on the signs and symptoms described in this

recommendation and detailed below." In many contexts, community-based services are provided by CHWs who are not always provided adequate training and mentorship or even formal employment status. This problem is often exacerbated in rural areas resulting in decreased access to and quality of care. Systems and financing structures will need to be put in place so that providers have nutrition and pediatric-specific training, and have access to the appropriate support in rural communities. Otherwise, inequity in access to and quality of care will be widened. We hope that as these guidelines are operationalized, further attention is focused on equity; and that concrete, actionable recommendations are made for overcoming barriers to care, especially for those from distinct cultural or linguistic backgrounds and with prior negative experiences with biomedical care.

One final area that must be addressed is the fact that RUTFs, ready-to-use supplementary foods (RUSFs), and specially formulated foods (SFFs) feature extremely prominently in the guidelines both for SAM and for MAM. It should be noted that these products are largely produced in higher-income settings, often commercially, and sourced to countries through bilateral aid agreements and other forms of aid subsidy. In addition to the ethical challenges posed by the commercialization of global nutrition products, the use of these products to some degree contradicts healthy nutrition practices for children because of their high-energy, high-fat, and high-sugar composition.(5) In some settings such as India, which contains a large proportion of the global burden of acute malnutrition, RUTFs are not commonly used because clinicians, policy makers, and advocacy organizations have convincingly argued about how they about how they may displace whole food interventions which can be deployed with equal efficacy and a

higher degree of sustainability.(6) More advocacy is urgently needed to continue to improve local, sustainable food solutions globally.

The updated WHO guidelines have the potential to dramatically curb the incidence of acute malnutrition and provide comprehensive community-based nutrition care. However, it is essential that the implementation of these guidelines is done thoughtfully and intentionally with full financial and administrative support from local ministries of health and implementing partners. It is also essential that these general guidelines not cause clinicians to lose sight of the necessity to individualize care to each child and family, which is essential for the management and prevention of acute malnutrition, and which includes a need to act quickly on risk factors and early onset of growth faltering long prior to the diagnosis of MAM and SAM.

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