

Continuum of care for children with wasting in India: Opportunities for an integrated approach

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An Anganwadi Worker plots a child's progress on the growth chart, India

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Location: India

What we know: An estimated 26 million children aged under five years are wasted in South Asia; four out of five of these children live in India. Progress on wasting targets is slow.

What this article adds: In India, prevalence of wasting is highest at birth and in the first six months of life. Severe wasting is predominantly managed in inpatient facilities. There is renewed political commitment to deliver a community-based programme to prevent and treat wasting, reflected in POSHAN Abhiyaan, the Government's new flagship programme to reduce all forms of undernutrition. This seeks to support an integrated approach to a continuum of care by leveraging existing platforms including (but not limited to) inpatient treatment services for severe acute malnutrition (F-SAM); India's Supplementary Nutrition Programme (SNP), delivered by the Anganwadi Services under the umbrella of the Integrated Child Development Services (ICDS) scheme; the Mothers' Absolute Affection (MAA) programme; and the recently introduced Home-based Care for Young Child programme. The Government programme has huge potential but many of the existing interventions do not reach all children and lack the required impact. Implementation bottlenecks need to be systematically addressed so that high-impact nutrition interventions are delivered with coverage, Continuity, Intensity and Quality (C2IQ).

Introduction

An estimated 26 million children aged under five years are wasted in South Asia; over half of the global burden of wasting (UNICEF, WHO and World Bank Group, 2018). India is home to four out of five of these children and lies at the epicentre of this global public health problem, with 22 million children wasted and over eight million severely wasted at any one time (UNICEF, WHO and World Bank Group, 2018). In 2015 India committed to reducing the proportion of children suffering from wasting to less than 5%, a nutrition target of Sustainable Development Goal (SDG) 2. However, the prevalence of wasting (21.0%) and severe wasting (7.5%) remain very high in the country (NFHS 4 2015-2016) and have not fallen in the past decade, despite a 10 percentage point decline in

stunting during the same period. This lack of progress towards the wasting target, and the persistently high numbers of children with wasting, is of immense concern.

The globally recognised model of community-based management of acute malnutrition (CMAM) does not exist at scale in India and severe wasting is predominantly managed in inpatient facilities. However, platforms to deliver a community-based programme to prevent and treat wasting exist and there is new commitment to utilise this infrastructure to deliver a community-based model of care for children with severe wasting. Together with the political commitment to POSHAN Abhiyaan (the Government's new flagship programme to reduce all forms of undernutrition), the opportunities to resource and implement services at scale to prevent

and treat severe wasting have never been more promising.

This article describes the characteristics of wasting in children in India and the opportunities and challenges to harness the country's community-based public health infrastructure to contextualise a response along a continuum of care.

Characteristics of wasting in India

The prevalence of wasting in India is highest at birth (37%) and declines with age, a pattern seen in other South Asian countries such as Bangladesh (Figure 1).¹ Over 30% of infants aged less than six months are wasted in India, underlining the imperative to address growth failure in early life. In comparison, data from selected countries in West and Central Africa show that the prevalence of wasting in these countries is relatively low at birth and increases in infancy, reaching a peak at around 12 months of age.

These contrasting patterns suggest that poor maternal nutrition and health may play a larger role in the aetiology of wasting in early life in India (and Bangladesh) than it does in other

settings. Almost one quarter (23%) of women of reproductive age in India are thin (body mass index (BMI) <18.5 kg/m²), 11% have a low stature (height <145 cm) and 53% are anaemic (NFHS 4, 2015-2016). Maternal thinness, low stature and anaemia predict low birth weight (LBW) and wasting in India (Bhilwar *et al*, 2016; Harding *et al*, 2018). These findings indicate that a comprehensive response to wasting in India must include a strong focus on the prevention and management of growth faltering in infants under six months, including interventions to improve the nutritional status of women before and during pregnancy.

Another significant finding is the relationship between wasting and mortality in India and South Asia, which appears to be affected by different factors than in other regions of the world. Figure 2 shows that the prevalence of wasting and severe wasting is higher in India and South Asia than in other regions, yet under-five mortality rates are comparatively lower. These comparisons need careful interpretation and more research is needed to understand the relationship between mortality and wasting in India.

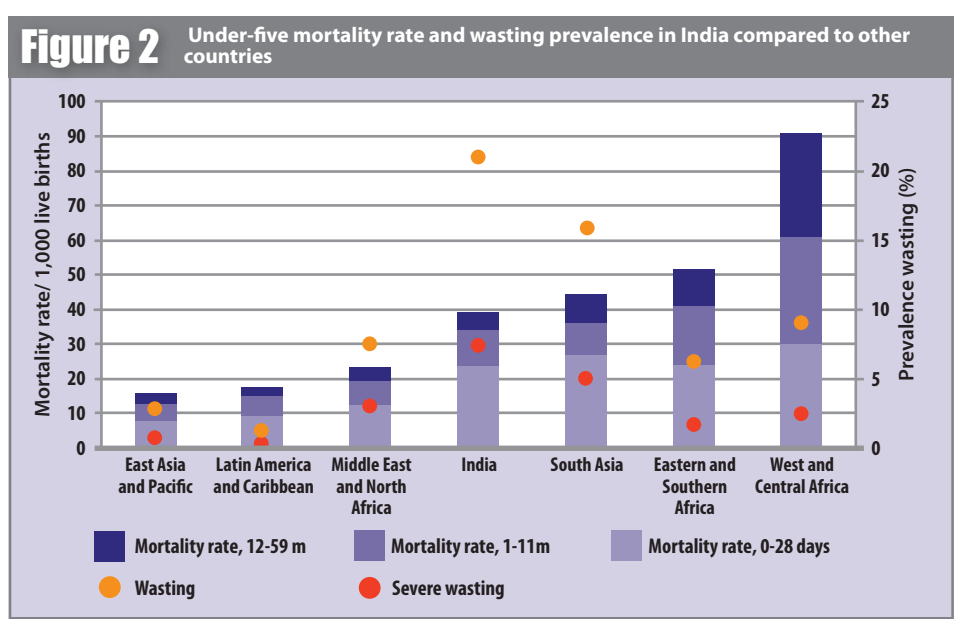
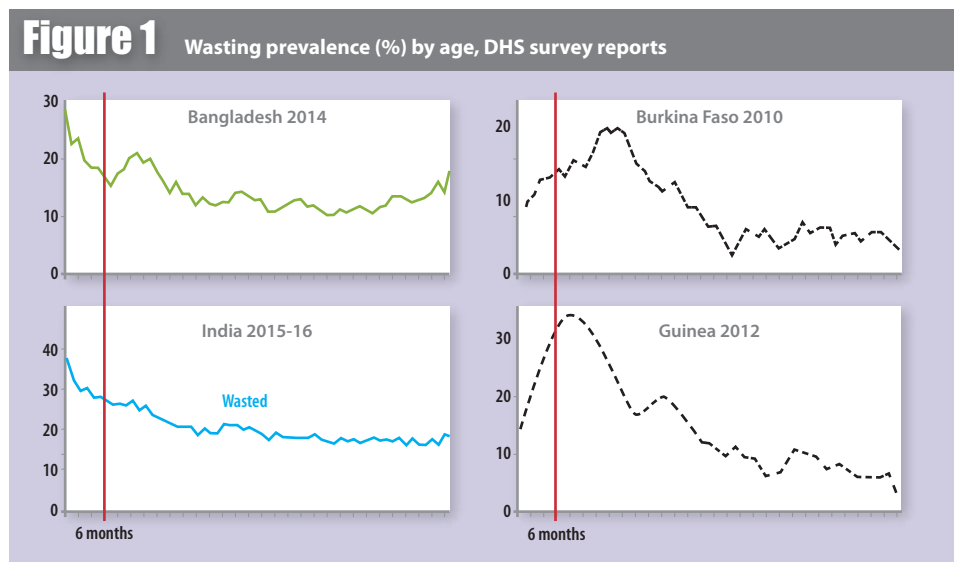
Opportunities and challenges to an integrated approach to address wasting across a continuum of care

There is an array of existing government schemes and programmes to counter malnutrition and its underlying causes in India. However, it is evident from the continuing high prevalence of wasting that these schemes and programmes are not designed to address the burden adequately, or are not functioning optimally.

Currently the main approach to treat severe wasting in India is facility-based treatment, known as F-SAM. The guidelines for F-SAM, which provides inpatient treatment of SAM with medical complications, were released in 2011. A network of 1,151 nutrition rehabilitation centres (NRCs) has since been established across the country and these manage approximately 180,000 cases annually, which represents a small fraction of the annual caseload. This existing inpatient infrastructure is neither sufficient nor intended to manage all children with severe wasting. Approximately 85-90% of children with severe wasting do not have medical complications and can safely be managed at community level. Indeed, the national guidelines on F-SAM recognise the need for the community-based management of severe wasting without medical complications. However, community-based management has been challenging to operationalise in the absence of national guidelines, which are currently in the process of being developed by the Government, although their content remains unclear.

The launch of POSHAN Abhiyaan by the Government in 2018 signals its strong commitment to accelerate efforts to improve the nutritional status of children and women and is an opportunity to transform the care of children with wasting in India. POSHAN Abhiyaan is designed to provide a continuum of care to address malnutrition from pre-pregnancy to a child's second birthday through a comprehensive package of convergent interventions across multiple government schemes and programmes. Its integrated package of health and nutrition interventions includes community-based management of SAM as one of a range of nutrition-sensitive and nutrition-specific interventions. States, districts and blocks are expected to develop 'Convergent Action Plans' that outline the priorities and roles of each government department to address malnutrition holistically, and these plans should include indicators on the number of children who are screened and diagnosed and who receive inpatient and outpatient (community-based) care for wasting.

India has well designed community-based public health systems and delivery platforms at



¹ Wasting is defined as weight-for-height/length z-score (WHZ) <-2SD. Severe wasting is defined as WHZ<-3 SD, as per WHO standards for infants under six months. Recent evidence suggests there are indicators that more effectively identify infants under six months who are at risk of adverse outcomes than WHZ.

facility and community level that can be leveraged by POSHAN Abhiyaan to support a comprehensive response to severe wasting. This should include four components: (i) the prevention of wasting and severe wasting, including relapse after successful treatment; (ii) early case detection of wasting through active screening; (iii) facility-based management of severe wasting with medical complications; and (iv) community-based management of severe wasting without medical complications (Figure 3). Each component will now be considered in turn to examine the opportunities and challenges to integrate these services into schemes, programmes, services and delivery platforms that currently exist or are planned under POSHAN Abhiyaan.

Prevention of wasting

Many nutrition-specific interventions to prevent wasting and other forms of malnutrition are delivered at community-level in India through Anganwadi Services under the umbrella of the Integrated Child Development Services (ICDS) scheme. Anganwadi centres, a nationwide network of rural community centres, provide health and nutrition services and pre-school education to a population of up to 1,000. Each Anganwadi centre is run by an Anganwadi worker (AWW), who delivers the services and ensures linkages with health facilities. There are also two other cadres of community health workers: auxiliary nurse midwives (ANMs), based at health sub-centres, and accredited social health activists (ASHA), who are incentivised community volunteers based in every village. AWWs, ANMs and ASHAs organise monthly village health, sanitation and nutrition days (VHSND) to deliver a range of community-based health services, including health check-ups, immunisations, contraceptives, treatment of diarrhoea and referral services. Nutrition-specific interventions are also delivered during the VHSND or on separate days, including growth monitoring, the promotion and support of infant and young child

feeding (IYCF), micronutrient supplementation and supplementary feeding.

There are a host of schemes, programmes and services that target pregnant and breast-feeding women (PLW) with nutrition interventions. These include a take-home ration from Anganwadi centres; anaemia prevention and control under the Anaemia Mukta Bharat programme; antenatal care services, including dietary counselling through VHSNDs; and schemes such as Pradhan Mantri Surakshit Matrutva Abhiyaan that provide quality antenatal check-ups. Institutional deliveries are promoted through conditional cash-transfer schemes (Janani Suraksha Yojna and Pradhan Mantri Matru Vandana Yojna) and free services for delivery and early neonatal care (Janani Shishu Suraksha Karyakaram), and provide an important opportunity to support mothers in establishing good breastfeeding practices.

The Mothers' Absolute Affection (MAA) programme aims to intensify IYCF efforts. AWWs and ASHAs promote and support recommended IYCF practices in the community, while ANMs provide support at the first referral level (health sub-centres). Under the recently introduced Home-based Care for Young Child programme, ASHAs will visit all households with young children every three months from the age of three to 15 months, which will greatly expand the opportunities to influence IYCF practices.

Community mobilisation occurs through existing community-based platforms, including monthly community-based events and VHSNDs at Anganwadi centres and quarterly community events for all pregnant women and mothers under the MAA programme. These are boosted by POSHAN-Maah, an intensive, one-month community-based campaign held annually in September under POSHAN Abhiyaan, which involved over two million nutrition-related events in 2018. This range of community-based

events could be used as platforms to increase families' understanding of severe wasting and demand for treatment services.

While the schemes, programmes and delivery platforms are nationwide in scale, the Coverage, Continuity, Intensity and Quality (C2IQ) of the high-impact nutrition interventions are insufficient to achieve the impact required. For example, only three in 10 women take iron-folate supplements for at least 100 days during pregnancy. Furthermore, these various schemes and programmes often function in silos and mechanisms for integration and convergence need to be further strengthened.

Active case-finding and referral of children with wasting

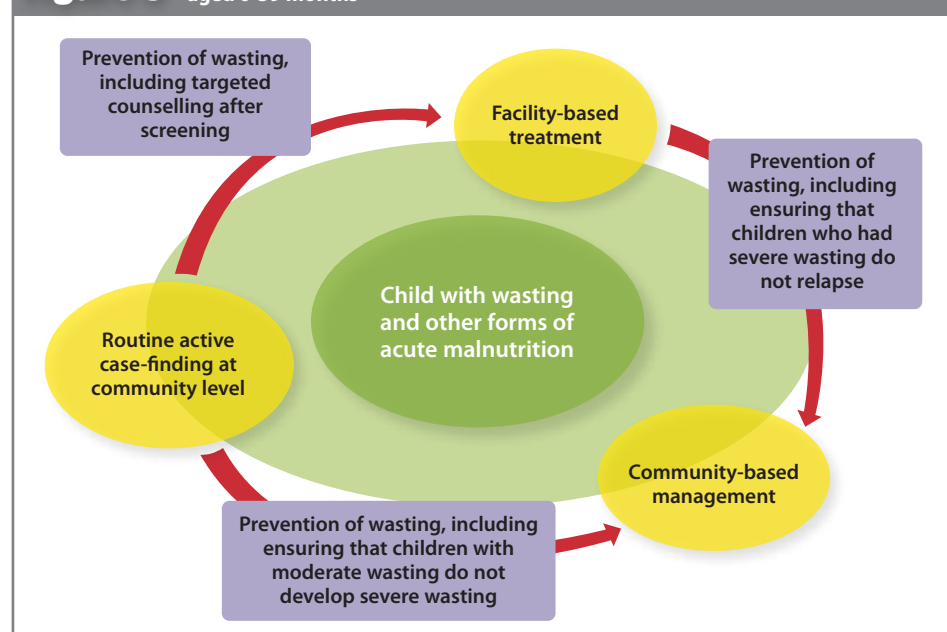
Active case-finding of children with wasting at the community level is essential to ensure that cases are detected early before wasting becomes severe or children develop medical complications. Children under five years old are currently weighed every month to assess weight-for-age (WEA) as part of growth monitoring and promotion at Anganwadi centres. Under POSHAN Abhiyaan, height measurements will be included in monthly growth monitoring going forward. This will enable all children to be screened for wasting at community-level each month.

Several challenges need to be addressed to ensure that active case-finding for severe wasting using weight-for-height (WFH) is effective at community-level. First, it is essential to increase the coverage of monthly weighing (and height) measurements at Anganwadi centres. The 2015-16 national survey (NFHS 4) revealed that only 43% of children under six years of age were weighed at an Anganwadi centre in the previous 12-month period (NFHS 4, 2015-2016). It is expected that the renewed focus of POSHAN Abhiyaan on growth monitoring will increase coverage of screening. Second, community health workers must be equipped with the anthropometric equipment and skills to accurately take height and weight measurements and determine whether a child has severe wasting. Third, screening for wasting should become part of routine healthcare for children in health centres to maximise the opportunities to identify children suffering from severe wasting. Fourth, referral mechanisms must be activated if a child is found to have severe wasting so that appropriate care is provided; this is particularly important for wasted children with medical complications.

Management of wasting in children aged 6-59 months

India's Supplementary Nutrition Programme (SNP), run by Anganwadi Services, aims to reduce malnutrition across the country. All children currently receive a take-home ration of fortified blended supplementary food (for children age six months to three years) or a hot cooked meal (for children age three to six years), delivered at Anganwadi centres, to increase the energy, protein and micronutrient content of their diets. Severely underweight children are given a double ration of the same supplementary food. There is currently no food supplement specifically formulated for children with moderate

Figure 3 Comprehensive approach for addressing acute malnutrition in children aged 0-59 months



or severe wasting; little is known about the effect of the general take-home ration or cooked meal on the condition of these children.

The production and distribution of take-home rations and hot cooked meals is the responsibility of each state and authorities are given flexibility to apply locally appropriate production and delivery models within overarching ICDS norms. Models for the production of rations and meals range from decentralised self-help groups to centralised production facilities (Flanagan *et al.*, 2018). The nutrition quality of the supplementary food varies greatly between states and the Government is currently looking at ways to enhance their nutritional content. There are also challenges in distribution that compromise coverage and potential impact of the programme. The national survey in 2015-16 found that only 48% of children under six years old received a food supplement in the previous 12 months (NFHS 4 2015-2016), which demonstrates the urgent need to increase programme coverage.

Under the 2011 F-SAM guidelines, children who are identified with severe wasting and/or bilateral oedema at community or health centre-level are referred to an NRC for confirmation of the diagnosis. Children with severe wasting and medical complications are admitted and treated with therapeutic milks and medical treatment. The Government's forthcoming guidelines for management of severe wasting at the community level will specify how children with severe wasting without medical complications will be managed. It is important that the nutritional commodity that is used to treat severe wasting at community level conforms with World Health Organization (WHO) specifications.

Care of low birth weight and at-risk infants under six months

In light of the high prevalence of LBW and wasting at birth in India, as well as relatively high neonatal mortality rates, it is essential to provide care for infants under six months old at risk of growth failure. It is not possible (or necessary) to admit all at-risk infants into inpatient care, which highlights the need to focus on community-based interventions to optimise breastfeeding practices and relactation where possible. These interventions can build on existing health programmes that target young infants, including those with LBW. As part of the Home-based Newborn Care programme, ASHAs visit every LBW newborn at least five times in the first month of life, and monthly thereafter for two years, to provide breastfeeding counselling and to refer children to higher levels of care if required. Other community-based programmes that target interventions to LBW babies include Kangaroo Mother Care and the MAA programme.

Tracking children across the continuum of care

Children should be carefully tracked across different health and nutrition programmes and services to prevent and treat wasting. The Government has various mechanisms in place, including the mother-child tracking system, the use of unique

identification numbers and real-time monitoring by AWW using mobile phones under the ICDS-CAS (Common Application Software). However, these mechanisms need to be standardised across all programmes to ensure a continuum of care across the various service delivery platforms.

Discussion

Under POSHAN Abhiyaan there is huge ambition to ensure that every child has access to quality services to address wasting across the continuum of care. This requires a cost-effective, integrated and sustainable approach that successfully prevents the development of wasting and provides care for those with wasting.

The infrastructure to deliver a comprehensive, community-based programme to prevent and treat wasting already exists in India; a vertical programme to address wasting is therefore unnecessary. There is an extensive network of community-based Anganwadi centres and community-health workers, together with health and nutrition schemes and programmes, into which components of a comprehensive approach can be integrated at scale.

Context-specific solutions to prevent children from developing wasting must be the priority. These solutions should be grounded in an understanding of the specific causes and drivers that lead to wasting. The high prevalence of wasting at birth in India suggests the need to improve the nutritional status of women before and during pregnancy and to ensure mothers have access to skilled support for early and exclusive breastfeeding. From six months of age, counselling on complementary feeding and continued breastfeeding and the prevention and treatment of diseases become important components of preventive approaches. These interventions are already part of existing health and nutrition schemes and programmes, but are not reaching children and women with the desired Coverage, Continuity, Intensity and Quality (C2IQ).

The introduction of monthly height measurements for all children during growth monitoring at Anganwadi centres will increase opportunities for the early detection of wasting. However, it is necessary to ensure that community health workers have the capacity (equipment, skills, time and motivation) to add this responsibility to their roles and increase community demand for services.

The Anganwadi centres currently cater to children with severe underweight and any children identified by health workers as having severe wasting with medical complications are admitted to inpatient care. The forthcoming community-based guidelines on the prevention and management of wasting will guide how treatment reaches children with severe wasting without medical complications at community level. Optimising the quality, production and distribution of rations under the SNP and identification of the nutritional treatment that will be used to manage severe wasting at community level are needed so that treatment puts children back on the path to healthy growth. A strong

referral system and tracking of individual children across the different programme components, from the community through to the inpatient facility, are also essential to ensure that children receive the full continuum of care on offer.

It is important to build the evidence base around this comprehensive approach to managing children with acute malnutrition in India and delivering services across the continuum of care. This learning could inform both India and other country contexts with a similar profile of wasting. Key evidence questions include a context-specific understanding of wasting in India; how to scale up screening using WFH at community level effectively; the modalities of managing growth failure in infants under six months old; and the cost-effectiveness of forthcoming guidelines to care for children with severe wasting at community level. In addition, a better understanding is needed of how to address challenging issues such as linkages and referrals between various programmes and schemes to ensure a continuum of prevention and care.

Conclusion

There is unprecedented commitment from the Government of India to address the needs of children with wasting more holistically and at scale. The Government is developing a response that builds on existing infrastructure and systems and is intended to provide sustainable solutions that focus on both prevention and treatment. The programme, once launched, has the potential to reach every child with severe wasting rapidly due to the extensive network of health facilities and community-based platforms that exist in the country.

Despite this huge potential, many of the existing interventions do not reach all children and lack the required impact. Implementation bottlenecks need to be systematically addressed so that high-impact nutrition interventions are delivered with Coverage, Continuity, Intensity and Quality (C2IQ).

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