

Good questions #15:

How can health agencies achieve their goals?

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ABSTRACT

Reaching ambitious goals such as ending an epidemic in the world or in a specific region requires good strategies. This essay addresses the challenge of navigating toward a goal by exploring how India's Integrated Child Development Services (ICDS) could end severe malnutrition of children. The path toward goals is simple: Do more of what works and less of what doesn't work, repeatedly, until the goal is reached.

KEYWORDS: malnutrition, wasting, stunting goal-seeking, pediatric growth, Anganwadis

NAVIGATING TO GOALS

How can health agencies find a pathway to achieve their goals? Steering to or around things that are close and visible is different from steering toward a destination over the horizon. It can be like the challenge of navigating a ship or an airplane across an ocean before the advent of radio and radar. How do you find your way to something you have never seen? Strategic goal-seeking requires continuous determination of where you are (monitoring) and having that information linked to a systematic process to adjust trajectory and speed as needed (correction). How do you stay on a long invisible track on the way to a destination that is not well lit? This essay explores an incremental localized approach to ensuring achievement of health goals.

SEVERE MALNUTRITION

Children who are very underweight when compared with healthy children of their height are described as suffering severe acute malnutrition or SAM (No Wasted Lives 2021; Weber 2017; UNICEF 2020; Weber 2017; WHO 2021a; WHO 2021b). It is not difficult to imagine national or state governments making a commitment to prevent SAM throughout their jurisdiction. This would be a very clear and specific goal, one that is certainly worth pursuing.

A systematic approach for tracking progress toward a goal is essential in any goal-seeking strategy. The use of pediatric growth charts in tracking movement toward or away from SAM is presented here to illustrate the strategy. It is not described here in full technical detail. That can vary from one context to another, depending on choices made by local policymakers and health-care managers.

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Pediatric growth charts that show the normal heights and weights of healthy children, are available for different groups and different purposes. For example, those who are interested in SAM in young girls can use WHO's height-weight charts for girls two to five years of age (WHO 2012c).

Weight-for-height GIRLS

2 to 5 years (percentiles)



WHO Child Growth Standards

Source: WHO. 2021c

In the chart shown here, the thin green middle line shows the 50th percentile, the median line. In a healthy population, half the girls are likely to be above that line, and half below it. A girl's current position on the chart is located at the intersection of her vertical height line, based on her height, as specified in the numbers at the bottom, and her horizontal weight line, based on the numbers at the left. Her position is where the vertical and horizontal lines intersect. A dot can be placed there, along with the date the measurements were done.

To detect existing SAM or a child's approach to it, a new dot would be placed on the chart each time the child's height and weight are measured. Measurements would be recorded regularly, perhaps monthly, so the chart can show the child's trajectory over time. This could be done manually or with the help of computers.

By labeling those dots with dates of measurement, the chart would show whether the girl's nutrition status is getting better (moving toward the norm) or worse (moving away from the norm). For those already near the norm, based on agreed standards, there would be no reason for concern.

It is important to know not only the levels of stunting and wasting but also their rates of reduction (ROR), the pace at which stunting and wasting levels go down over time (India State-Level Disease Burden Initiative CGF Collaborators 2020).

These charts could be used to describe stunting and wasting status for individuals and for groups such as the children in a specific school or state. Finding many of the dots far above or below the norm would signal a need for corrective action for individual children and for the group. Places with low rates of reduction could try the actions used in places with rapid rates.

Usually, healthcare workers measure children's height and weight and interpret the results. However, parents could also be involved as part their nutrition education. People who have never dealt with charts could be brought into the discussion through an incremental process. As the children mature, they too could be involved, perhaps as a component of their schooling.

The charts could be modified to make them easier to interpret. For example, they could distinguish the normal zone (green), the areas that are alarming (yellow) because they are near to the SAM zone, and the SAM zone itself (red) to identify children suffering from SAM. The SAM zone would be the triangle in the lower right corner, far below the median line. Girls whose dots are in that red zone are too low in weight. The dots for children who are overweight would be in the upper left triangle, well above the median line. Actions that move children from the SAM zone toward the median line are actions that show progress toward achievement of the goal.

INDIA'S PROBLEMS AND RESOURCES

India has about 47 million stunted children--one third of the world's total--and about 26 million wasted children--about half of the world's total (Sankar and Beesabathuni 2020; also see De Wagt et al. 2019; India State-Level Disease Burden Initiative CGF Collaborators 2020). Stunting and wasting of young children in India is widespread and persistent. Most studies of stunting and wasting focus on children less than six years of age. However, studies based on data from India's National Nutrition Monitoring Bureau show widespread stunting and wasting even in school-age children (Varadharajan, Thomas, and Kurpad 2013).

Many infants are already wasted at birth. In India, more than a third of children are born with low birthweight (De Wagt et al. 2019; Torlesse and Minh TRAM Le 2020). To prevent wasting in young children, it is important to ensure that women of child-bearing age are well nourished and healthy.

The goal-oriented approach to dealing with health issues requires a clear focus on major parts of it. Governments could make a good start by deciding to end SAM. To implement that decision the government could announce that all children in their jurisdiction will get whatever is needed to prevent SAM or remedy it if it occurs. The means for pursuing the goal of ending SAM would vary depending on the local setting, but the strategy could be the same in many different settings: Do more of what works and less of what doesn't work, repeatedly, until the goal is reached.

India's ICDS functions through a network of more than a million childcare centers called Anganwadis. The ICDS also has a Take Home Rations (THR) program that provides

micronutrient fortified food blends for children and pregnant or lactating women through the Anganwadi network where ICDS policy is implemented (Beesabathuni, Kumari, and Bajoria 2020; Sankar and Beesabathuni 2020a; Sankar and Beesabathuni 2020). The national government could ask the ICDS to lead the effort to end SAM in India.

The World Food Programme reviewed the THR system to “compare and contrast the composition and nutritional content of the various THR products across the country” (WFP 2020, 3). The review assessed the potential nutritional value of the rations based on their composition. However, assessing the nutrition value of individual food products is helpful only if it is linked to knowledge about what food goes into the children. A porridge might be a good product, but it could be troubling if it is a large portion of a child’s meal, displacing other food products that would provide more diversity in the diet. Many health claims made for foods and food supplements are about the merits of the ingredients, not on evidence of health benefits from their use in various contexts.

The efforts made to improve health are the *output* from the agency seeking change. They are not indicators of the health *outcomes*. The THR system might have good *output* in the sense of increasing the availability of healthy foods for children, but that is not the same as showing improvements in their nutrition status, the desired *outcome*.

The actions taken could be simple, like one headlined “Jharkhand: Eggs Six Days a week in Meals for Anganwadi Children” (Ranchi (2021)). Whether it is six or fewer, providing some eggs on a regular basis is likely to provide important nutrients and help to diversify the children’s diets. They are likely to have a positive impact on the children’s health (Ali 2019; Bonis-Profumo, Stacey, and Brimblecombe 2021). The health impact could be measured by using the pediatric growth charts to compare the growth of children who got eggs with the growth those who did not.

Reductions in children’s stunting or wasting in any population can be attributed not only to the nutrient value of their food but also to other changes that come along with those changes. For example, the introduction of new foods at school might lead to changes in the food children get at home. If they are positive changes, they should be welcomed. If not, they should be investigated, discussed, and reversed if possible. Apart from menu changes, other kinds of changes could be introduced. The initiative to provide eggs could be linked to initiatives to produce eggs locally (Caulfield 2021; Micu 2020). Discussions of egg production and consumption could become part of a nutrition education program that children get into when they move to the schools. Also, good toilets and hand-washing facilities could indirectly improve children’s nutrition status by preventing diarrhea and other diseases.

Several states in India are likely to reject the eggs option because they do not accept animal foods of any kind (Siddique 2020). Nevertheless, public discussion of the health benefits from improving the menu might prompt those states to find other comparably beneficial foods.

It might take a long time to detect benefits of specific diet changes, but if no positive impact can be detected even after several years, attention should shift to actions that are more likely to reduce SAM. Changes in feeding programs should have measurable positive health outcomes in the real-world context. If an action’s benefits cannot be demonstrated, its value should be

questioned. Observational studies of the impacts of different actions make it possible to repeatedly move away from those that work poorly to those that work well.

DIGITAL TECHNOLOGY

WHO offers computer software, *Anthroplus*, for analyzing height and weight data to determine the extent of stunting and wasting in children up to 19 years of age (WHO 2021a). It could be used to guide feeding choices through the Anganwadis and the school system. The focus could be broadened to give attention to concerns about children who are overweight. These analyses could guide adjustments in India's school Mid Day Meals program. They could be linked to an ongoing nutrition education program designed to fit the students' grade level.

The methods for collecting and aggregating the data are relatively straightforward, but there are ongoing debates about formats and standards for interpretation. If there are no compelling reasons for using other standards, it is generally wise to follow the World Health Organization's guidance (WHO 2021b). For goal-seeking, the important things are not the exact numbers, but whether those numbers move in the right direction at a good pace.

GOAL-SEEKING AT EVERY LEVEL

Usually, data analyses on public health issues are designed to support high-level policymakers (Sadeghi et al. 2021; World Bank 2021). Many are not systematically linked to decision-making systems. However, goal-seeking requires goal-sharing and information-sharing between policymakers and implementers at all levels of the management hierarchy. They should have flows of information to guide their day-to-day actions. In the illustration presented here, village-level childcare centers, clinics, and parents could be informed about the goal and their roles in the efforts toward achieving them (Raghu 2021). The pediatric growth charts could be used to help children and their families "see" important nutrition issues and motivate them to make positive changes.

The data management system could provide different information for different levels of governance and different jurisdictional areas. Growth charts could be produced for each child, daycare center, school, health clinic, and relevant government agency. Reports could be refreshed frequently (IAP 2021; UNICEF 2021). The system could produce maps that show geographical patterns. The system could provide periodic reports on the effectiveness of the action in moving toward the goal. Discussions of the reports could be set up in different settings to review the system's performance in reducing malnutrition.

In these goal-seeking campaigns, some changes, such as increasing the diversity of diets, could be simple and inexpensive. The total cost of improving the diets of children in India's Anganwadis and schools would be large because the number of children being fed is large, but the cost per child would be small. The estimated costs would have to be compared with the estimated value of the lifelong and intergenerational benefits of preventing extreme malnutrition in children.

India is developing an ambitious data management program, the POSHAN Tracker, to guide nutrition policymaking related to the Anganwadis (Suri and Kapur 2020). Their website

explains: “Poshan Tracker App is meant for Anganwadi workers, Anganwadi centers to enter beneficiaries’ data in the forms. It is not at all developed for general public.” (POSHAN Tracker 2021). They could produce periodic reports on progress toward nutrition goals and draw parents and other community members into the discussion of measured progress toward the goal of ending SAM (IPE Global 2021). Local people could find opportunities for involvement in monitoring and correction. They could make more well-informed choices in their own households. If a few communities do that well, others might adapt their methods to fit their circumstances.

There is a clear need for effective strategic goal-seeking systems wherever goals are important. The systems can be developed in ways that engage and empower those who would benefit from achievement of the goal. With strong leadership, goal-seeking procedures could be tested and refined over time. This sort of systematic approach could radically accelerate the campaign to end malnutrition in all its forms and help in pursuing other goals as well.

REFERENCES

- Ali, Sana. 2019. “In a nation awash in eggs, a state struggles to get them to children.” *India Spend*. August. <https://www.indiaspend.com/in-a-nation-awash-in-eggs-a-state-struggles-to-get-them-to-children/>
- Beesabathuni, Kalpana, Priyanka Kumari, and Madhavika Bajoria, eds. 2020. *Compendium: Take-Home Rations in Integrated Child Development Services*. TINI: The India Nutrition Initiative and Sight and Life. https://sightandlife.org/wp-content/uploads/2020/09/THR-Compendium_2020.pdf
- Bonis-Profumo, Gianna, Natasha Stacey, and Julie Brimblecombe. 2021. “Maternal diets matter for children's dietary quality: seasonal dietary diversity and animal-source foods consumption in rural Timor-Leste.” *Maternal & Child Nutrition*. 17:1. <https://doi.org/10.1111/mcn.13071>
- Caulfield, Claire. 2021. “Raising chickens became more than a hobby for some during the pandemic.” *Hawaii Civil Beat*. https://www.civilbeat.org/?p=1456968&utm_source=Civil+Beat+Master+List&utm_campaign=92562b42d0-EMAIL_CAMPAIGN_2021_09_14_10_27&utm_medium=email&utm_term=0_51c2dd3cf3-92562b42d0-401868885&mc_cid=92562b42d0&mc_eid=9c59b625ef
- De Wagt et al. 2019. “India has 22 mn wasted children; Poshan Abhiyaan signals govt's strong commitment to tackle malnutrition: experts.” *Outlook Poshan 2.0*. June 13. <https://poshan.outlookindia.com/story/india-news-india-has-22-mn-wasted-children-poshan-abhiyaan-signals-govts-strong-commitment-to-tackle-malnutrition-unicef/332106>
- FAO, IFAD, UNICEF, WFP and WHO. 2021. *The State of Food Security and Nutrition in the World 2021. Transforming Food Systems for Food Security, Improved Nutrition and Affordable Healthy Diets for All*. Rome, FAO. <https://doi.org/10.4060/cb4474en>

- IAP. 2021. IAP Growth Charts. Indian Academy of Pediatrics. <https://iapindia.org/IAP-GROWTH-CHARTS/>
- India State-Level Disease Burden Initiative CGF Collaborators. 2020. “Mapping of variations in child stunting, wasting and underweight within the states of India: The Global Burden of Disease Study 2000–2017.” *EClinical Medicine*. 22:100317. <https://doi.org/10.1016/j.eclinm.2020.100317>
- IPE Global. 2021. *Poshan Pakhwada 2022 Celebrated Across the Country*. <https://www.ipeglobal.com/we-can/poshan-pakhwada-2021-celebrated-across-the-country-88.html>
- Micu, Alexandru. 2020. “Americans are raising chickens at home during the pandemic—here’s our guide on how to do that.” *ZMEScience*. <https://www.zmescience.com/science/americans-raising-chickens-20052020/>
- No Wasted Lives. 2021. *The State of Acute Malnutrition*. <https://acutemalnutrition.org/en/about-us>
- Poshan Tracker 2021. Website. <https://poshantracker.in/resources> (Also see <https://poshantracker.in/>)
- Raghu, Archiuta .2021. Why India needs village-level data to target malnutrition in children. *IndiaSpend*. <https://www.indiaspend.com/health/why-india-needs-village-level-data-to-target-malnutrition-in-children-752252>
- Ranchi. 2021. “Jharkhand: Eggs six days a week in meals for Anganwadi children.” *The Telegraph Online*. <https://www.telegraphindia.com/jharkhand/jharkhand-eggs-six-days-a-week-in-meals-for-anganwadi-children/cid/1827816>
- Sadeghi, Malihe, Mostafa Langarizadeh, Beheshteh Olang, Hamed Seddighi, Abbas Sheikhtaheri. 2021. “A survey of implementation status of child nutrition surveillance systems, registry systems and information systems: a scoping literature review protocol. *BMJ Pediatrics Open*. 5:1. https://bmjpaedsopen.bmj.com/content/5/1/e001164?utm_source=alert&utm_medium=email&utm_campaign=bmjpo&utm_content=latest&utm_term=20082021
- Sankar, Rajan, and Kalpana Beesabathuni. 2020. “Take home rations: a route to nutrition security.” *The Times of India*. <https://timesofindia.indiatimes.com/blogs/voices/take-home-rations-a-route-to-nutrition-security/>
- Siddique, Iram. 2020. “Eggs or not: why is Madhya Pradesh debating Anganwadi meals again?” *The Indian Express*. <https://indianexpress.com/article/explained/eggs-or-not-why-madhya-pradesh-is-debating-anganwadi-meals-again-6594869/>

Suri, Shoba and Kriti Kapur. “Towards a malnutrition-free India: best practices and innovations from POSHAN Abhiyaan. *Observer Research Foundation*.

<https://www.orfonline.org/research/towards-a-malnutrition-free-india-63290/>

Torlesse H, Minh Tram Le. 2020. “South Asia and child wasting – unravelling the conundrum.” *ENN Field Exchange*. October. <https://www.enonline.net/fex/63/southasiachildwasting>

UNICEF. 2020. *Global Action Plan on Child Wasting: A Framework for Action to Accelerate Progress in Preventing and Managing Child Wasting and the Achievement of the Sustainable Development Goals*. <https://www.unicef.org/media/96991/file/Global-Action-Plan-on-Child-Wasting.pdf>

---. 2021. *Fed to Fail: The Crisis of Children’s Diets in Early Life*.

https://data.unicef.org/resources/fed-to-fail-2021-child-nutrition-report/?utm_source=newsletter&utm_medium=email&utm_campaign=Fed+to+Fail&utm_id=2021+Child+Nutrition+Report

Varadharajan Kiruga, Tinku Thomas, and Anura V. Kurpad. 2013. “Poverty and the state of nutrition in India” *Asia Pacific Journal of Clinical Nutrition*. 22(3):326-369.

<https://apjcn.nhri.org.tw/server/APJCN/22/3/326.pdf>

Weber, Lauren. 2017. ‘These 2 boys were born the same day in the same town, but their lives will be dramatically different’ *HuffPost*. August 14.

https://www.huffingtonpost.co.uk/entry/chronic-malnutrition-madagascar-stunting_n_5772b07fe4b0f168323b1eb0?guccounter=1&guce_referrer_us=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvLnVrLw&guce_referrer_cs=pQwrqkvQ4YP-xru3QLvuzQ

World Bank. 2021. *World Bank Support to Reducing Child Undernutrition: An Independent Evaluation*. Independent Evaluation Group. Washington, DC: World Bank.

WFP. 2020. *Review of Take-Home Rations under the Integrated Child Development Services in India*. <https://www.wfp.org/publications/review-take-home-rations-under-integrated-child-development-services-india>

WHO. 2021a. *Growth Reference Data for 5-19 Years*. <https://www.who.int/tools/growth-reference-data-for-5to19-years/application-tools>

WHO . 2021b. *Child Growth Standards*. <https://www.who.int/tools/child-growth-standards/standards>

WHO. 2021c. *Pediatric Growth Chart for Girls*. [https://cdn.who.int/media/docs/default-source/child-growth/child-growth-standards/indicators/weight-for-length-height/girls-chart---weight-for-height-2-to-5-years-\(percentiles\).pdf?sfvrsn=ea272ee9_2](https://cdn.who.int/media/docs/default-source/child-growth/child-growth-standards/indicators/weight-for-length-height/girls-chart---weight-for-height-2-to-5-years-(percentiles).pdf?sfvrsn=ea272ee9_2)