NUTRITION AS A HEALTH VITAL SIGN

Meeting Report: Virtual Technical Consultation
October 25, 2021

MOMENTUM Country and Global Leadership

USAID FROM THE AMERICAN PEOPLE

MOMENTUM A Global Partnership for Health and Resilience

NOVEMBER 2021

MOMENTUM works alongside governments, local and international private and civil society organizations, and other stakeholders to accelerate improvements in maternal, newborn, and child health services. Building on existing evidence and experience implementing global health programs and interventions, we help foster new ideas, partnerships, and approaches and strengthen the resiliency of health systems.

This report is made possible by the generous support of the American people through the U.S. Agency for International Development (USAID) under the terms of the Cooperative Agreement #7200AA20CA00002, led by Jhpiego and partners. The contents are the responsibility of MOMENTUM Country and Global Leadership and do not necessarily reflect the views of USAID or the United States Government.

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Suggested Citation
MOMENTUM. *Nutrition as a Health Vital Sign: Technical Consultation Meeting Report*. 2021. Washington, DC: USAID MOMENTUM.

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ACKNOWLEDGEMENTS

MOMENTUM Country and Global Leadership is part of a suite of innovative awards funded by the United States Agency for International Development (USAID) to holistically improve voluntary family planning (FP) and maternal and child health (MCH) in partner countries around the world. The project focuses on technical and capacity development assistance to ministries of health and other country partners to improve outcomes.

ABBREVIATIONS

ANC	Antenatal care
CHAMPS	Child Health and Mortality Prevention Surveillance
CHV	Community health volunteer
CHW	Community health worker
FANTA	Food and Nutrition Technical Assistance Project
HB	Hemoglobin
HCP	Health care provider
HIC	High-income country
iCCM	Integrated community case management
IMCI	Integrated management of childhood illness
LMIC	Low- and middle-income country
MN	Micronutrient
MNCH	Maternal, newborn, and child health
MOH	Ministry of health
MUAC	Middle-upper arm circumference
PNC	Postnatal care
STAMP	Screening Tool for the Assessment of Malnutrition in Pediatrics
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

MOMENTUM Country and Global Leadership conducted a desk review of literature and country experiences to explore learning and potential gaps related to the use of nutrition assessments and screening measures as a health vital sign. The findings are presented in a concept note, which advocates for the inclusion of selected nutrition measures as vital signs during maternal, newborn, and child health facility visits in low- and middle-income countries (LMICs). Nutrition as a health vital sign intends to detect risk factors for morbidity and mortality in order to instigate preventive and curative actions, while strengthening integrated health and nutrition services.

MOMENTUM shared the concept note, presenting evidence from literature on the use of nutrition measures as health vital signs, with a group of experts to serve as guidance for the consultation. Invitees to the consultation included representatives from USAID, the World Health Organization, the United Nations Children's Fund, academic institutions, and international non-governmental organization programmers (see Annex 1 for list of invitees and attendees). The group was invited to participate in a technical consultation, which was held virtually on October 25, 2021, with 25 attendees.

The consultation objectives were to:

1. Review and discuss experiences, evidence, and gaps in using nutrition assessments as vital signs, as documented in the draft concept note.

2. Solicit expert opinions on the use and applicability of various nutrition assessments and screening measures for use in LMICs.

3. Discuss potential research and learning questions.

The consultation included three presentations (opening remarks, nutrition as a health vital sign, and considerations for nutrition assessment in clinical and public health settings), a plenary discussion, a breakout session, and conclusion. MOMENTUM will use the discussion from the breakout sessions to revise the concept note and establish next steps to promote the use of nutrition assessments as a health vital sign.

BACKGROUND

Good nutrition promotes optimal growth and development in children, can reduce maternal and neonatal morbidity and mortality, and generally helps the body's immune system fight infection. It is particularly important for people with chronic disease, pregnant and lactating women, children under five years old, and others with special needs.

Nutrition screening is a rapid process that identifies malnourished individuals or those at risk of a nutritional condition for a more detailed nutrition assessment and care. The assessment includes anthropometric (weight, height, or middle-upper arm circumference), biochemical (such as anemia screening), clinical (skin condition, hair, eyes, etc.), and dietary (24-hour recall, food frequency) methods or a mix of these measures to identify possible nutrition problems and their causes. The collected information is used to develop an appropriate action plan for the prevention or treatment of malnutrition and other health conditions. Nutrition screening uses quick and simple tools that require only minimal training and can take place in a health facility or in a community setting during growth monitoring and promotion programs at community events, household visits, or group meetings.

Vital signs are measurements of basic bodily functions, such as temperature, pulse, and blood pressure, which provide critical information about a person's current health status. The concept of anthropometry screening as a vital sign was proposed around 20 years ago by the Nutrition Screening Initiative as a means to identify, prevent, and manage nutritional risks that could cause further disability, mainly in elderly hospital patients. The importance of nutrition in patient health and care began to feature in the field of oncology, for example, where screening patients for malnutrition was proposed as a "seventh vital sign."

Although nutrition assessment approaches and tools have been developed in various forms across the continuum of care, with some reviewed for validity and reliability, they remain underutilized in low- and middle-income countries (LMICs), with gaps in identification, treatment, and follow-up and identifying mothers and children at risk of morbidity and mortality. Health facility workers, particularly in LMICs, have multiple duties, are often overworked, and face staff shortages, so assessments that take a lot of time or are complicated to implement are not contextually appropriate. To be promoted as a health vital sign, standalone nutrition screening approaches and tools with identified cutoff points need to be verified as predictive for risk of morbidity and/or mortality.

The United States Agency for International Development seeks to strengthen nutrition–health integration and engagement through use of the "Nutrition as a Health Vital Sign" concept. This approach involves further assessing the effectiveness of nutrition screening and indices as a vital sign across the maternal, newborn, and child health facility-based continuum of care to identify risk factors for morbidity and mortality and respond with preventive and curative actions.

PRESENTATIONS

USAID OPENING REMARKS

PRESENTER: REBEKAH PINTO

The United States Agency for International Developments' (USAID's) opening remarks presented background information on Nutrition as a Health Vital Sign, including MOMENTUM's work focusing on nutrition counseling and care during and after illness.

USAID emphasized the interrelatedness of health and nutrition and how critical nutrition is for health throughout the life cycle, but particularly during the first 1,000 days—conception to a child's second birthday—for a child's physical and cognitive development, noting the special vulnerability for neonates and the need for exclusive breastfeeding.

To not assess nutritional status is to misdiagnose; to not assess it is to provide incomplete treatment.

Undernutrition is a contributing factor of 45 percent of all under-five deaths. For the survival, wellbeing, and development of children under five years old, it is imperative to ensure adequate nutrition for women and children while also strengthening primary health care, including the integrated management of childhood illness (IMCI).

Realities and gaps have led to a disconnect between health and nutrition services and what is known and what is done. Some guidance captures integrated health and nutrition services in global initiatives (e.g. IMCI/integrated community case management [iCCM]/Baby-Friendly Hospital Initiative guidelines) but there is no unified technical guidance on the implementation of defined comprehensive packages of interventions aimed at preventing and mitigating the aims and effects of disease and malnutrition in children.

Community health workers (CHWs) and primary health care providers (HCPs) do not consistently address undernutrition as part of treating illness among children due to a lack of knowledge, time, and confidence and inconsistent resources, etc. Nutrition assessments are considered separate from health and are seen as a bonus when conducted within routine health care visits.

NUTRITION AS A VITAL SIGN PRESENTATION

PRESENTER: HABTAMU FEKADU, MOMENTUM

The concept of nutrition as a vital sign was proposed about 20 years ago to identify, prevent, and manage nutritional risk, mainly in elderly patients. It was later considered the seventh vital sign in the care of patients with cancer.

For our purposes, nutrition as a vital sign means using nutrition assessments and screening in inpatient/outpatient maternal, newborn, and child health (MNCH) care to predict the risk of malnutrition and predict poor birth outcomes (morbidity/mortality) and respond with preventive and curative actions.

Nutrition as a vital sign requires tools of acceptable validity that are simple to use, rely on easily available information, and are applicable across multiple settings, for multiple patient conditions.

There are several approaches and tools mainly developed as part of the continuum of care for patients, but little research is available on their use in LMICs.

MOMENTUM's desk review included nearly 40 pieces of grey/non-grey literature from high-income countries (HICs) and LMICs focused on nutrition assessment (anthropometry, dietary assessment, and clinical signs) among adults, pregnant women, adolescents, and children. Their context was primarily hospitals in HICs.

There are various valid, reliable nutrition assessment tools for children (e.g., middle-upper arm circumference [MUAC] and Screening Tool for the Assessment of Malnutrition in Pediatrics [STAMP]) but they aren't routinely used during child health visits, largely due to a lack of training and time.

Tools to assess health and nutritional status for pregnant women include the body mass index, weight, and MUAC, with the body mass index serving as a strong predictor of birthweight. Most systematic reviews focus on birth outcomes and not the mother's health and nutritional status.

There are no globally agreed MUAC cutoffs for pregnant women due to variability in context, so country-specific cutoffs should be established.

Health facility workers have multiple duties and are overworked. Tools must be simple, user friendly and quick to use with standard cutoffs and clear follow-up actions.

RESEARCH PRESENTATION

PRESENTER: PARMINDER SUCHDEV

"If you cannot measure it, you cannot improve it." We need to be better at assessing malnutrition.

Anthropometry is used to assess protein energy malnutrition. It requires proper equipment and extensive training on how to use that equipment.

Despite the tools available, there is poor data quality in HICs as well as LMICs. Training doesn't always improve the quality of data. New tools are being used as an alternative way to address this problem—smartphone tools are just as valid and accurate as traditional anthropometry, so can these tools be applied in LMICs to improve measurements?

Micronutrient (MN) assessment is also critical and also challenging. Phlebotomy for hemoglobin (HB) readings is considered invasive, but non-invasive tools are being developed.

USAID's Advancing Nutrition Anemia Task Force assessment working group intends to improve the reliability of HB testing to define anemia and look at screening beyond the measurement of HB alone. Nutrition often relies on HB alone to define anemia, but we know that anemia can be due to non-nutritional causes, not just iron deficiencies (e.g., malaria, other infections, blood disorders), so we need to broaden the differential diagnosis in anemia screening.

One exciting development regarding non-invasive screening is the future use of smartphones that use photos of nailbeds to interpret HB levels. Research shows this performs similarly to other non-invasive screening. There is an ongoing study using tablet or smartphone 3D technology to measure children's anthropometry, which will simplify and save time when conducting nutrition screenings.

The Child Health and Mortality Prevention Surveillance (CHAMPS) Network is a long-term surveillance study in sub-Saharan Africa and South Asia funded by the Bill & Melinda Gates Foundation. The goal of CHAMPS is to engage communities, set up surveillance in these communities, and, when children die, conduct tissue sampling and postmortem anthropometrics to determine the cause of death. Research to date shows that

among children 0-59 months, 51 percent were wasted, but only 29 percent of these cases had malnutrition noted within the causal pathway or as a contributor to death. These results have led to an effort to develop guidance to standardize the inclusion of malnutrition in cause of death.

PLENARY DISCUSSION

- Nutrition is a composite health indicator relevant to most disease outcomes, but there is inadequate focus on the measurement of malnutrition during medical training in both HICs and LMICs. It is critical that it is done right, even if training takes time.
- MOMENTUM Country and Global Leadership conducted a landscape analysis on maternal mental health, and in looking at common perinatal mental health disorders, it was clear that nutrition is a significant contributing factor to mood disorders. This further proves how critical nutrition is to a mother's wellbeing, as well as its impact on her infant.
- Nutrition is an important feature in the IMCI flowchart and guidelines, and while all IMCI service providers should have the training and practice to measure vital signs, in reality it is not happening. Service providers don't have the commodities (e.g., weighing scales) and many do not read growth charts. MUAC tools are easy, but how many service providers have MUAC tapes? Rather than developing a new tool to implement, we need to learn more about the bottlenecks and barriers affecting the use of existing tools. A recent World Health Organization technical consultation considered these issues with regards to IMCI. There should be an integrated approach to incorporate nutrition moving forward.
- Several tools exist, but utilization is low. How can we simplify the tools to increase their use? Or can we use technology to simplify and speed up use?
- Measuring children under two using smart anthropometry is challenging and where most of the gaps in data are seen. Measurements in younger kids are more accurate, but require four images at different angles to create a 3D cloud to measure head circumference, MUAC, length, etc., and fidgety toddlers are difficult to manage. Newborns and children under one were easier to measure.
- The focus of this review is assessment at the facility level, not the community level.
- The means of assessment and diagnosis *and* the steps to take as a result need to be considered and actioned together.

BREAKOUT ROOM DISCUSSIONS

QUESTIONS UNDER CONSIDERATION:

1. *How can we increase the uptake of existing screening tools as health vital signs in all contexts?*
    a. *What are the most appropriate screening tools for use during antenatal care (ANC)/postnatal care (PNC) and IMCI/child contact in health facilities? Why?*
        i. *Consider cutoffs, predictive ability of morbidity and mortality, user-friendliness, ease of use for busy health care providers, etc.*
        ii. *Single nutrition screening tools vs multiple assessments*
    b. *One-stage (anthropometric and dietary/feeding assessment at the same time) vs two-stage approaches (anthropometric assessment followed by dietary assessment)*
    c. *What do we need to consider in LMICs to use existing assessment tools in ANC, PNC, and IMCI/child health contacts?*

2. *Evidence generation:*
    a. *How to validate/adapt the tools in LMICs (e.g., observational assessment or pilot testing)*
    b. *Issues that need further investigation*
    c. *Identify new areas of research*
    d. *Propose ideas to address identified research questions in LMICs*

GROUP A

DISCUSSION HIGHLIGHTS:

- Discussed the need to better assess the LMIC context and how nutrition sits among the competing priorities of HCPs. Identified the need to involve LMIC HCPs in the design of the tool, **avoiding a situation where the global community is both the definer of the problem and the creator of its solution.**
- Need to assess HCP perceptions of nutrition and understand how to better support them in recognizing the value of nutrition and positioning it as a priority.
- The problem is context-specific. It is easier to follow protocols in a research setting where nutrition is the focus, but in an outpatient setting with acute conditions among patients, we divert our attention to following procedures that address the immediate signs and symptoms and identify, diagnose, and treat the primary concern. Anthropometry, even in HICs, is challenging to prioritize.
- In survey settings, the training is comprehensive (e.g., Multiple Indicator Cluster Survey], Demographic and Health Survey, etc.) but the information isn't directly useful to the measured communities.
- Maximize use of existing nutrition screening tools or methods in LMICs rather than adapting new Western nutrition assessment tools.
- HCP perceptions of the usefulness of the tools, information, and assessments are critical.

DETAILED DISCUSSION NOTES

How can we increase uptake of existing screening tools as health vital signs in all contexts?

- Undernutrition in children is specific—malnutrition is associated with morbidity, and it is pronounced in children under three years of age. A routine process of physical examination and laboratory tests is required to identify accompanying disease (which is common). Anthropometry was a routine part of the examination, alongside MN assessment. The context is critical—is this a clinic where undernutrition is a focus or an outpatient clinic? Sometimes personnel are more concerned with getting the child out of the acute phase rather than planning for rehabilitation. Would it need to be a phased approach? Health workers may not have the expertise to manage the immediate situation.
- Barriers affect the range of tools that can be used. We struggle with HCPs being overwhelmed by the number of patients to see, so they don't have the time to go in-depth, addressing only the most pressing, threatening conditions. There is no

There is more that we can do to look at the choices providers have to make and how they use a small window of time with limited equipment/supplies. We need to be more open to understanding what is happening and our role in helping to emphasize nutrition.

time to do the nutritional assessments or to do them accurately. Even if they are done correctly, interpretation of the nutritional status is another step, as is developing a treatment plan. It is a lot to ask. There is not a lot of nutrition training in the contexts we are discussing (LMICs). Where HCPs suspect a patient is malnourished, they might not feel confident to address it, or there may be an inconsistent supply of food/MN supplements available. It is very complex and challenging for the HCPs. Pre-service training and advocacy of a user-friendly, time-friendly tool to reinforce that nutrition is inextricable with health. It needs to be easy to use, to interpret, and to follow up. Does it require two stages? This may be too ambitious given those challenges.

- Anthropometry is challenging to do correctly with children—it is easier to let it slip rather than struggle with. We need to talk to the providers about the framing of this, how do they view nutrition and anthropometry? How do they feel it should be prioritized? There is more that we can do to look at the choices providers have to make and how they use a small window of time with limited equipment/supplies. We need to be more open to understanding what is happening and our role in helping to emphasize nutrition.
- Measurements are also challenging in hospital settings in HICs. The training of nurses in a hospital setting included height board training and the importance of nutrition, and there was incremental improvement over six months. Measurement is cumbersome and requires two people in an overstretched environment with critically ill children. There is also a lack of appreciation of its importance. New tools may make this easier, but it is not widely understood to be as important as it is.
- Many tools are not reliable or valid. One limitation of the literature review is that the assessments that do consider validity and reliability have not been done in LMICs. There needs to be further research on this, including the length of time it takes to conduct each assessment. You have 5–10 minutes maximum to conduct an assessment and it takes that much time just to set up equipment, register the child, etc.
- From a survey perspective (e.g., Multiple Indicator Cluster Survey) there is great experience conducting nutrition assessments, which often involve training people with no nutrition background. This is teachable, and there are lessons learned regarding the applicability of nutrition assessment teaching. The time it takes to do a measurement also decreases as the teams conducting the assessments get more practice.
  - We remain with the data for the purpose of the surveys—it doesn't feed back to the communities we measure. The beneficiaries don't gain anything from well-measured household surveys.
  - It does take time, but in addition to understanding the importance of the process, they need to understand the importance of the outcome as well.
- Which tools are most relevant for nutrition as a vital sign? Which would change the decision tree? **There should be a comparison of the outcomes of the decision tree using each potential tool.** Some might not be that "guiding" in terms of that decision. Assessing the potential tools in the context of next steps has not yet been done.
  - The provider needs to understand what the assessment will do for them in terms of decision-making. If they don't see that their decision will change by doing the nutrition assessment, then they will just continue doing their regular clinical management of the situation. They need to understand its value.

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- One issue with IMCI is that only certain elements are conducted, not the whole protocol. **Building in a new process or adding a new tool will not be helpful unless we better understand existing biases and know why the protocols aren't already being followed.** These are qualitative and contextual issues.
- IMCI focuses on the problems and makes them actionable. Nutrition as a Vital Sign is the missing concept—nutrition is not currently thought of as a vital sign. How can we improve that concept and how can we transmit it to service providers? Nutrition measurement needs to be included as a vital sign. **Nutrition needs to be framed as vital because it will define a different outcome.**
- Need to focus on communication with service providers. They need to understand the consequences so that they can counsel mothers/caregivers, e.g.; if we don't measure the nutrition indicators, a malnourished child may develop illness. That is a consequence. We have to convince providers that it is a vital issue and that their recording is vital.
- IMCI training includes these issues, but it depends whether service providers are compliant and where they put their focus. It comes back to the perception of malnutrition as a disease. How do we frame it effectively? **We need to emphasize nutrition during training and supervision**. Trainees are not all doctors. Nurses, technicians, and health workers also conduct the protocol and need the broader perspective.
- Ease of use, timing, and convenience are important in clinical settings, and more so for community level work. Community health volunteers (CHVs) do iCCM. We need to consider how CHVs would carry the scales, the tools, etc., since they are heavy to carry around the village. It is important to consider the practicalities.

What do we do next to generate evidence?

- We need to understand how people see the importance of this work. What does conducting this assessment mean in terms of how health workers approach the management of their patient, especially pregnant women and children?
- Often an assessment will include the provider perspectives, but sometimes we need to ask too specific questions. We need to ask providers what the problems are and what they need. We should loop them in before there is a tool and incorporate their inputs earlier into the process. We need to know how they prioritize issues and what their challenges are.
- Do not just focus on the tool but look at the process. Understand the context first.
- Too often the global community will define the problem and create the solution.
- We can ask questions related to the type of nutrition information and how we can help them to understand what to do next, e.g., do you see nutrition as a health vital sign in MNCH? How do you see nutrition within the larger context of "health"?
- Consider all the indicators when asking for inputs from LMIC HCPs. For example, how important is weight when deciding how to treat X, have you thought about anemia as contributing to the disease, etc.
- Helpful to use case studies in these instances, e.g., in this scenario, what would you do? If we don't mention nutrition, it may not be brought up once, which is valuable information in and of itself for how they assess a patient. "When you assess a patient and the weight is low/high, how would you alter your course of treatment?"

GROUP B

DISCUSSION HIGHLIGHTS:

- Human resources for health are a continuing challenge. Beyond the tools, the key focus is the workforce capacity to use them.
- What is in place? For example, weight measurements during ANC are widespread but not consistently implemented.
- Single vs two-step screening: single tool is ideal for use but not as thorough. Introducing a dietician into the process is complex but may be necessary.
- Different models/scenarios of task shifting need more implementation research.
- How to delegate roles including bringing in CHWs/CHVs to take on components related to follow-up and counseling. We don't want to task midwives to the point that it is not efficient or effective.
- Clarifying the work done to date regarding cutoffs. Remaining questions will need to be factored into further evidence generation.
- There is general enthusiasm for learning more about ongoing low to high technology solutions to make the process efficient, attractive, appealing, and accessible to clients.

DETAILED DISCUSSION NOTES

How can we increase uptake of existing screening tools as health vital signs in all contexts?

- There are multiple options for validated tools in HICs, but LMIC research and tools are limited.
- There is a tendency to fixate on tools as solutions, but the uptake and use is challenging. We have a significant human resources for health problem globally. There are not enough people to provide the services, so the question is, **what is the most effective way to do the most with the least?** There is perfect and there is reality.
- Good tools for HICs are not good tools for LMICs.
- Weight is taken during ANC, though this varies. Can this be the midwife or does a dietician need to review the data and provide nutrition counseling to mothers? Midwives are already overstretched, and diet is not considered a priority.
- ANC providers, like midwives, are health care providers–they can do circumference and weight, but if there are additional measurements in the context of a good algorithm, nutritional support can be provided by referral.
- The Food and Nutrition Technical Assistance (FANTA) Project identified good cutoff points for MUAC of pregnant women and adolescents, with different levels of sensitivity and specificity. This can be used by countries to determine country-specific MUAC cutoffs depending on the malnutrition rate and available resources.
- Screening and assessment is used interchangeably–screening can be done by anyone, but diagnostics need to be done by a nutritionist/dietician and there are not enough in the workforce in LMICs. It is possible to have an HCP do the screening and have a dedicated nutritionist review the results.
- Two-stage screening works if the dietician can be in place. Midwives do not have the time to provide additional support.

- Malawi protocols include weight, MUAC, and hemoglobin. HCPs take weight, but not MUAC, due to workload and competing priorities.
- MUAC is as easy as taking weight, so why is it harder to do? MUAC arrived much later than weight into ANC, so HCPs do not consider it as important. Some will measure MUAC, but not all. Perhaps they do not understand the importance because it arrived later in the protocols and came as a "nutrition assessment," which may be the challenge.
  - USAID/Malawi will follow up on this with the Malawi MOH.

- Weight has always been a part of ANC. The moment you isolate measurements, health workers are unlikely to do more.
- MUAC is part of the ANC package and training, not just to identify maternal malnutrition, but because it is a predictor of poor birth outcomes, which is the main purpose of ANC. However, this is poorly understood.
- More implementation research is needed to identify the most accessible, efficient way of mainstreaming assessments into the point of contact, e.g., a bundling approach (Bangladesh) and packaging/language. Nutrition as a Vital Sign is a way to mainstream the effort and make it accessible.
- At the community level, there are similar questions in terms of quality of measurement and assessment. There is a need to develop a template for digital tools, using smartphones for growth monitoring and promotion, to bring health workers through a decision tree and collect information. The challenge is how much we want to pack in without overwhelming, while maintaining the minimum package of nutrition-relevant components.
- The format and delivery and packaging of maternal nutrition (e.g., checklists) should be as efficient and undaunting as possible.
- Given the LMIC context, a single nutrition screening tool is preferable to multiple assessments.
- The algorithm should describe what to do regarding detection of measures, but we don't have the script to identify the next step.
- There is limited information on PNC, but what we discuss for ANC applies to PNC. As facility births increase, there is often a chance to do more, but this isn't happening yet. Efforts need to be made as part of an integrated mechanism. In PNC, the mother is not a priority once the baby is born unless there is a complication, but it is critical that the baby is feeding well and that the mother is supported. Traditional practices prevail within PNC, e.g., practices that prevent mothers/babies from getting the appropriate food in Nepal. Nutrition counseling is important. Task shifting (e.g., engaging CHWs and gadgets) helps, such as scales making weighing more exciting.
- Simplifying anthropometric measurements using technology can address challenges such as time constraints, use of data, etc. There was some initial work regarding newborns (foot length of the baby) but unclear if there are results.
  - Follow up on this evidence, which is understood to be variable in Guatemala. This requires further investigation to see if it does work in certain communities/populations.
  - Trial for possible serious bacterial infection: the weighing scale for babies worked well, was exciting, and commanded attention even though it was a simple concept. The gadget attracted attention and meant that mothers brought their babies to be weighed. Task shifting to CHVs is also worth pursuing, where possible.

What do we do next to generate evidence?

- Validation and introduction of tools—discussion of programming/testing to see who could be the best user of the tool. Research who (CHWs/designated dietician/counselor for nutrition) can facilitate the use and interpretation of results from the tools. Also need programming and evidence generation from use of the tool.
- Testing to get insights from health workers perceptions, receptiveness, and acceptability of tools.
- Even well-performing tools from HIC contexts need thorough testing in LMICs to assess usability and adaptability—possible to generate more evidence from existing tools?

SUMMARY

- The consultation fulfilled the purpose of discussing the concept note and incorporating the perspectives of academics, MCH experts, and practitioners. We identified areas for increased research to improve the uptake of tools, potentially using technology to do so.
- Based on the feedback, MOMENTUM will revise the concept note and, along with USAID, identify next steps to promote the use of Nutrition as a Vital Sign in the care of mothers and children. We will also address selected information or evidence gaps that are critical to apply existing nutrition screening tools in LMIC settings.

ANNEX 1. CONSULTATION ATTENDEES

LIST OF INVITEES BY NAME AND AFFILIATION

1. Adam Bailes, MOMENTUM
2. Adhish Dhungana, Save the Children Nepal
3. Alice Tang, Tufts
4. Amy Mangieri, MOMENTUM
5. Anne Detjen, UNICEF
6. Anouk Amzel, USAID
7. Charlene Reynolds, MOMENTUM
8. Doug Heimburger, Vanderbilt
9. Elaine Gray, USAID
10. Emilie Reber, Insel
11. George Siberry, USAID
12. Habtamu Fekadu, MOMENTUM
13. James Njiru, Save the Children
14. Jeniece Alvey, USAID
15. Joseph Johnson, Save the Children (RMNH Head)
16. Kelsey Watson, Tufts
17. Kenneth Kagunda, Save the Children
18. Koki Agarwal, MOMENTUM
19. Kristin Haas, MOMENTUM
20. Kristina Granger, USAID
21. Leah Greenspan, USAID
22. Leslie Koo, USAID
23. Lily Kak, USAID
24. Lindy Fenlason, USAID
25. Lory Meoli, USAID
26. Louise Mwirigi, UNICEF
27. Lydia Wisner, MOMENTUM
28. Lynn Kanyuuru, Save the Children Kenya
29. Malia Boggs, USAID
30. Neena Khadka, MOMENTUM
31. Nigel Rollins, WHO
32. Parminder Suchdev, Emory
33. Patrica Jodrey, USAID
34. Pius Essandoh, Ghana/ MOMENTUM
35. Randi Tangvik, University of Bergen
36. Rashed Shah, MOMENTUM
37. Rebekah Pinto, USAID
38. Salim Sadruddin, MOMENTUM
39. Sergio Salgado, USAID
40. Shivani Gupta, USAID
41. Susan Moffson, MOMENTUM
42. Suzanne Stalls, MOMENTUM
43. Teresa Akun, Save the Children
44. Theresa Shaver, USAID
45. Tim Quick, USAID
46. Violet Orchardson, USAID (Malawi)
47. Zoha Malik, MOMENTUM

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1. Adam Bailes, MOMENTUM
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5. Geofrey Tanui
6. George Siberry, USAID
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10. Kristina Granger, USAID
11. Leah Greenspan, USAID
12. Lindy Fenlason, USAID
13. Lory Meoli, USAID
14. Lydia Wisner, MOMENTUM
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17. Patricia Jodrey, USAID
18. Rashed Shah, MOMENTUM
19. Rebekah Pinto, USAID
20. Shivani Gupta, USAID
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25. Zoha Malik, MOMENTUM

ANNEX 2. AGENDA

NUTRITION AS A HEALTH VITAL SIGN

VIRTUAL CONSULTATION | OCTOBER 25, 2021

Time	Session Title	Speaker (Name, Affiliation)	Facilitator (Name, Affiliation)
8:30-8:40	**Introduction:** present background and agenda	Lindy Fenlason, USAID Rebekah Pinto, USAID	Lydia Wisner, MCGL
8:40-8:55	**Nutrition as a Vital Sign presentation**	Habtamu Fekadu, MCGL	Lydia Wisner, MCGL
8:55-9:05	**Research presentation**	Parminder Suchdev, Emory University	Lydia Wisner, MCGL
9:05-9:25	**Plenary discussion: remarks, reflection, comments—global experience and previous work in the area**	All	Habtamu Fekadu, MCGL
9:25-9:30	**Break**		
9:30-10:15	2x Breakout Sessions: Discussion of 2 x question sets	Room A: Adam Bailes, MCGL Room B: Habtamu Fekadu, MCGL	Room A: Zoha Malik, MCGL Room B: Lydia Wisner, MCGL
10:15-10:25	Discussion highlights (5 minutes per group)	Group nominee	Lydia Wisner, MCGL
10:25-10:30	Next steps	Habtamu Fekadu, MCGL	N/A

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