The Fourteenth Meeting of the WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM)

Meeting report
14–16 March 2023

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# Contents

Acronyms ................................................................................................................................. 3

Background ................................................................................................................................... 4

Summary of presentations and discussions .................................................................................. 4

  Session 1: Health diet metrics – Update and next steps ................................................................. 4

  Session 2: Updates from the Anaemia Working Group .............................................................. 6

  Session 3: Updates from Anthropometry Data Quality Working Group ...................................... 8

  Session 4: Nutrition intervention coverage measurements – open discussion to way forward .......... 9

  Session 5: Global nutrition estimates (child malnutrition, LBW, and anaemia) .......................... 10

  Session 6: Monitoring anaemia – challenges and potential opportunities ................................. 11

  Session 7: Global nutrition targets progress tracking to 2030 .................................................. 13

  Session 8: Guidance on nutrition information systems ............................................................. 14

  Session 9: Gestational Weight Gain and nutrition indicator for older people – potential for TEAM involvement .................................................................................................................. 15

  Session 10a: Updates – MICS and DHIS2 .................................................................................. 17

  Session 10b: Updates – Adolescent nutrition .............................................................................. 19

  Session 11: TEAM priorities for the next 3–5 years and TEAM workplan .................................... 19

  Session 12: TEAM operational plan .......................................................................................... 22

  Closing remarks .......................................................................................................................... 24

Annex I. Agenda ............................................................................................................................ 25

Annex II. List of participants ......................................................................................................... 27

Annex III. Group photo ................................................................................................................ 28

References ..................................................................................................................................... 29
**Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>Body mass index</td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>COVID-19</td>
<td>Coronavirus disease 2019</td>
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<td>DataDENT</td>
<td>Data for decisions to expand nutrition transformation</td>
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<td>DInA</td>
<td>Micronutrient Data Innovation Alliance</td>
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<td>DHIS2</td>
<td>District Health Information System Software</td>
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<td>DHS</td>
<td>Demographic and Health Survey</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>GNMF</td>
<td>Global Nutrition Monitoring Framework</td>
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<td>HDMI</td>
<td>Healthy Diets Monitoring Initiative</td>
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<td>IFA</td>
<td>Iron and folic acid</td>
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<td>IYCF</td>
<td>Infant and young child feeding</td>
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<td>JME</td>
<td>Joint Child Malnutrition Estimates</td>
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<td>MDD-W</td>
<td>Minimum Dietary Diversity for Women</td>
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<td>MICS</td>
<td>Multiple Indicator Cluster Survey</td>
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<td>NCDs</td>
<td>Noncommunicable diseases</td>
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<td>NNIS</td>
<td>National nutrition information system</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SPA</td>
<td>Service provision assessment</td>
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<td>TEAM</td>
<td>Technical Expert Advisory Group on Nutrition Monitoring</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Background

In 2015, WHO and UNICEF established an independent Technical Expert Advisory Group on Nutrition Monitoring (TEAM) to advise on enhancing global nutrition monitoring at all levels. More information on TEAM and its activities is available at https://www.who.int/nutrition/team/en/.

This report provides a summary of discussions, recommendations and decisions emanating from the fourteenth TEAM meeting, held in-person at the USAID Advancing Nutrition offices in Arlington, Virginia, from 14–16 March 2023. The agenda and list of participants are included in Annexes I and II.

Summary of presentations and discussions

The first two days of the fourteenth TEAM meeting were dedicated to discussing the status of work completed by TEAM working groups, the TEAM workplan and relevant operational issues for the coming years. On the third day, two side meetings were convened with the TEAM Anaemia and Anthropometry working groups to discuss technical issues and workplans. Objectives of the meeting were to (1) provide an update on the progress of ongoing activities and propose next steps with timelines; (2) discuss and identify a list of priority topics that TEAM should work on in the future; and (3) present and discuss TEAM’s renewed operational modalities.

TEAM co-chairs Jennifer Coates and Edward Frongillo opened the meeting and expressed their thanks to USAID Advancing Nutrition for hosting the first in-person meeting in several years (the past five meetings had been held virtually due to the COVID-19 pandemic). Mike Foley, Deputy Project Director at Advancing Nutrition, welcomed TEAM advisers and expressed his organization’s commitment to supporting TEAM’s work.

Session 1: Health diet metrics – Update and next steps

Jennifer Coates provided updates on the progress made by the TEAM Working Group on Diet Quality from June 2022 to November 2022, during which the Working Group pursued two workstreams: (1) development of healthy diet constructs and subconstructs; and (2) a comparative assessment of existing healthy diet metrics, including strengths, weaknesses and suitability for a range of objectives, including global and national monitoring.

Healthy diet metrics are a priority for the three United Nations agencies leading the Working Group – WHO, UNICEF and the Food and Agriculture Organization of the United Nations (FAO). As such, it was desirable for the three agencies to come together to form a new initiative to lead these efforts – known as the Healthy Diets Monitoring Initiative (HDMI). A governance structure was established for the HDMI, including a Core Group that meets biweekly and a Strategic Planning Group that helps set the initiative’s direction and seizes strategic and funding opportunities.

A briefing document was produced to describe HDMI’s objectives and to invite partners to support the initiative. The Working Group on Diet Quality worked with the French National Institute for Sustainable Development (IRD) to prepare a healthy diet metrics report to assess the suitability of existing healthy diets metrics, which served as the basis for the Bellagio Consensus Meeting held in November 2022 (described below). To seek funding for these first steps, a concept note and proposal were developed for the Rockefeller Foundation and funding was received to engage the IRD consultants and a WHO staff member to support the HDMI’s workplan.

In preparation for the Bellagio Consensus Meeting, Edward Frongillo and a team at the United States Department of Agriculture (USDA) developed a working proposal describing six sub-constructs of a
healthy diet construct, which was reviewed by the Working Group. Next, the Core Group of the HDMI worked to co-design the Bellagio Consensus Meeting with the Rockefeller Foundation, which was held from 28 November to 2 December, with the objective of reaching an agreement on the recommended paths for defining metrics to compose a simple, unified, global framework for the monitoring of healthy diets. The meeting was attended by 21 participants, including United Nations agencies, technical experts, metrics developers, country representatives and donors.

A key outcome of the Bellagio Meeting is a consensus statement (i.e., a call to action, meant for a wider audience), which has undergone multiple rounds of revision and is being finalized by the Core Group. A more detailed meeting report is also being developed.

The Bellagio Consensus Meeting was an opportunity to articulate a mission for the HDMI: To enable national and global decision-makers and stakeholders to monitor and achieve healthy diets for people and the planet. An HDMI workplan and research priorities have also been drafted. The engagement of FAO and the Rockefeller Foundation in this initiative has been crucial to move it forward. While the group did not reach consensus during the meeting, there were intensive discussions on the various metrics and four were identified as showing the most promise: the Global Diet Quality Score; Global Dietary Recommendation Score; Minimum Dietary Diversity for Women; and the Nova Score for the Consumption of Ultra-processed Foods. Some evidence gaps related to relative performance and validity need to be filled before selecting one or more metrics.

The HDMI draft work plan identifies the following next steps: Phase 1 – disseminating the Healthy Diets Monitoring Statement (Call to Action); raising awareness about HDMI; summarizing the current state of knowledge on healthy diet metrics; articulating a value proposition for global and national healthy diets monitoring; and engaging countries (to June 2023); Phase 2 – developing global guidance; designing and funding the HDMI workplan; implementing the prioritized research agenda; and fostering commitment (July 2023 to December 2024); and Phase 3 – facilitating the uptake of global guidance; building a platform for ongoing engagement and to collect and use diet metrics for various purposes (January 2025 onward).

Points of discussion:

Advisers were asked to consider opportunities for country engagement in the HDMI, possible funding sources, and the role of the TEAM Working Group on Diet Quality going forward.

There was some discussion about how measurement research would be reflected in the research agenda. The research agenda identifies the need for research to further validate metrics within countries and to identify cross-country equivalents. There is also a need for research to address practical gaps, such as establishing sentinel foods for the Diet Quality Score, and to address the costs of data collection and the burden of data collection on countries.

It was noted that 2025 is a significant year for global nutrition monitoring, given the deadline of the World Health Assembly global nutrition targets. There is an opportunity for advocacy in the lead up to 2025 (e.g., advocacy for a new global nutrition monitoring framework). There is also a window of opportunity to advocate for new indicators to be added to the SDGs monitoring, though there are differing points of view as to whether this advocacy should take place now, when some data are still missing, or once more information is available.

If a new indicator is proposed for inclusion in the SDGs monitoring, it will be important for the nutrition community to coordinate efforts and carry out advocacy with Member States. Some groups have suggested proposing the indicator of Minimum Dietary Diversity for Women (MDD-W), given that it is already at an advanced state of validation. If only one new indicator is proposed, UNICEF would prefer
to advocate for the inclusion of Minimum Dietary Diversity (MDD) for children. The United Nations Statistical Commission is not keen to add new indicators; in fact, the discussion has focused mainly on what indicators, if any, could be deleted.

There was consensus within the HDMI to use the term ‘healthy diets’; however, it was noted that the term ‘diet quality’ was still widely used and it would be important to define both terms to improve clarity. Bellagio Meeting participants generally agreed that ‘healthy diets’ was an easier concept to communicate with external audiences. It will be important to consider how this term translates into other languages.

The Demographic and Health Survey (DHS) Program has adopted MDD-W and healthy diet indicators at TEAM’s recommendation. Collecting MDD-W data is considered a burden for many countries, and as such, the nutrition community should consider proposing a new SDG indicator that can be collected via a multitopic survey rather than a nutrition survey. The data processing burden is also an important consideration when proposing a new indicator, as well as the DHS timeline. DHS-9 will be launched during the last quarter of 2024 or the first quarter of 2025 and there will be a call for new data within a few months of that process, so this will an important time for adding new survey questions. The amount of nutrition data collected already increased by 40 per cent between the release of DHS-7 and DHS-8 and there has been some discussion about DHS becoming a nutrition-heavy survey.

There was question about which sub-constructs had been deprioritized during the Bellagio Meeting. Four sub-constructs, were deprioritized, including nutrition density (which was largely covered under adequacy); food safety (which is an important construct but complicated to measure); diversity (which could be covered under adequacy) and moderation (which is important to measure but requires a different measurement approach, and as such, should not be part of measuring healthy diets).

Work related to the measurement of healthy diets has evolved within TEAM. Given the broad interest within United Nations agencies and the establishment of the HDMI, the TEAM Working Group on Diet Quality may no longer be needed. Rather, a technical body (which should include some TEAM advisers) may be reconstituted under the HDMI. There was broad agreement among TEAM advisers for this proposal, which would be discussed further with the HDMI Strategic Planning Group. It was noted that healthy diets monitoring should still be included on the TEAM meeting agenda as needed to facilitate TEAM input into issues related to global monitoring.

Advisers thanked Jennifer Coates and Edward Frongillo for their contributions to this initiative. The ongoing support of Chris Vogliano and Sharmila Mysore of USAID Advancing Nutrition were also noted.

Session 2: Updates from the Anaemia Working Group

Sara Wuehler provided an update on the development of the technical notes on anaemia assessment. Technical Note 1 explores best practices for collecting haemoglobin data, including methods, factors influencing measurement, measurement errors, current evidence, gaps in need of further research and factors to consider in planning a survey. It also describes the issues of introduction of random and systematic bias associated with the source of blood draw (venous or capillary) and the haematology tools used for measurement of haemoglobin concentration.

Technical Note 2 explores the operationalization of Technical Note 1, based on available research. It discusses quality assurance of venous blood collection, best methods for pooled capillary blood collection based on the current state of knowledge, and the implications for training users on both methods. Research shows high variability in haemoglobin concentration estimates from capillary blood, even in some pooled capillary blood samples. Additional research is being undertaken by the Heme
Group to investigate how data collection methods, including timing and temperature, can affect the degree of consistency between capillary and venous blood samples.

The DHS relies primarily on capillary blood samples to assess anaemia but has collected venous blood upon request of the country for a number of surveys. Some organizations have advocated for discontinuing the use of capillary blood. This would result in the anaemia assessment module being removed for many surveys. The shift to collecting venous blood presents both logistical and methodological challenges to be addressed prior to integration into population-based surveys.

Lisa Rogers of WHO provided an update on the development of the WHO guideline on haemoglobin thresholds and assessment of haemoglobin concentration. The guideline does not recommend against the use of capillary blood, but rather recognizes venous blood as the gold standard for assessment, recognizing that this is not always feasible. The technical notes being developed by the TEAM Anaemia Working Group are intended to begin where the guideline ends, offering guidance for countries on how to operationalize the guideline in different settings and for various purposes. The WHO guideline is expected to be published by the fall of 2023.

WHO also carried out a descriptive analysis comparing capillary with venous blood samples, which is described in session 6.

**Points of discussion:**

In the discussion on HemoCue measurement devices, it was noted that there are systematic errors related to the individual device and the calibration set in the different types of HemoCue devices (201+, 301, 801). A suggestion was made to engage with the HemoCue company to improve calibration. This bias can be addressed by standardizing the individual devices against the gold standard of assessments from venous blood and haematology analysers. The sizeable random error of measures from HemoCue devices has the effect of lengthening the tails of the haemoglobin concentration distribution and inflating the prevalence of anaemia. It is not possible to control for this random effect.

There was some discussion about the errors related to capillary blood samples. Some advisers suggested that capillary blood could not be used in an unbiased way given that the errors are random, no matter which device is used to measure the haemoglobin concentration. There was a suggestion to use mean haemoglobin concentration rather than a threshold for identifying anaemia, as the mean should not be affected by random error. It was also noted that when using pooled capillary blood samples, there was significant random error; that is, variability in both directions.

The research reviewed for the technical papers comparing assessments using venous versus capillary blood found quite substantial degrees of misclassification of anaemia. It was noted that there are conflicting findings found in the literature on the precision and accuracy of measures taken from venous, capillary or pooled capillary blood and assessed by HemoCues. There was discussion about whether it would be possible to do a systematic review of the literature. There were also questions about how to best use the data collected with capillary blood and HemoCue from children and women over the past two decades. These issues were discussed further in session 6.

It was noted that the age of the child is important to consider when estimating the prevalence of anaemia, given that younger children have a lower haemoglobin concentration than older children. The WHO guideline will likely include separate thresholds for children under 24 months of age and children 24–59 months of age.

To account for day-to-day variability in dietary assessments, researchers sometimes collect several 24-hour questionnaires from the same individual. One adviser queried whether a similar approach could be considered for anaemia, where measures are taken from different blood draws and the distribution is
adjusted to determine the prevalence. The DHS Program may be able to test such an approach using data from surveys where a venous subsample was collected along with the capillary full samples.

Anaemia and haemoglobin are crucial to measure given their functional significance. Globally, iron deficiency is responsible for about half of all cases of anaemia. One adviser queried whether the TEAM Anaemia Working Group had considered looking at iron deficiency anaemia specifically.

WHO is also developing a comprehensive framework for addressing anaemia, including diagnosis and treatment, and considering the multiple causes and risk factors.

There was a discussion on the presentation of the technical notes. When concrete guidance is provided, it was recommended to have the guidance presented clearly in plain language so that the recommendations could be clearly understood and adopted by country level policy and management teams. Advisers were asked to read the draft technical notes and provide feedback, including on how to best package the information.

Session 3: Updates from Anthropometry Data Quality Working Group

Sorrel Namaste provided an overview of the work to develop additional guidance notes on anthropometry to address gaps that had been identified since the release of the ‘Recommendations for data collection, analysis and reporting on anthropometric indicators in children under 5 years old’ in 2019. Importantly, these recommendations have been integrated by the DHS Programme in their survey guidelines.

To determine the impact of these enhanced training and data quality procedures on anthropometric data quality, the DHS Program scaled the recommended data quality interventions within six surveys, applied a data quality score and ranked 155 surveys in terms of data quality. The results showed a drastic improvement in data quality when these recommendations were implemented.

The Anthropometry Data Quality Working Group is advancing on the documentation of the unfinished research agenda for anthropometric data collection, cleaning and reporting in population-based surveys. Nine topics were identified as in need of further research (see reports from the tenth, eleventh and twelfth TEAM meetings). Each topic is being explored further in a research brief of approximately five pages. Working Group members have been producing the briefs during their own time. A consultant will be recruited through TEAM to support the completion of the remaining briefs. TEAM advisers were invited to suggest names of consultants who may be able to support this work.

Each research brief includes a statement of the problem and identifies research questions, types of research, outcomes and data sources. A surprising challenge has been the lack of counterfactuals available to enable clear comparisons. The briefs propose different types of studies that can be used to answer the research questions: desk reviews, key informant interviews, the Delphi method, secondary analysis, simulation modelling, efficacy studies and effectiveness studies.

Immediate next steps include completing six research briefs. The remaining three briefs are expected to be completed by the last quarter of 2023. TEAM advisers were asked to consider whether the briefs should be released separately or together as a package. There are also plans to eventually publish a peer reviewed journal article on the anthropometry research agenda.

TEAM advisers were asked to suggest donors who might be interested in funding this work. They were also asked to consider how much TEAM should be involved in writing the research protocols.
Points of discussion:

There was a suggestion to seek the input of survey implementers to prioritize the research questions in the briefs. Some advisers suggested it would be advantageous for TEAM to begin developing the research protocols to improve efficiency, avoid variability in the research, and to ensure that the research meets TEAM’s objectives. The Working Group’s involvement in developing protocols was also seen as favourable given the significant expertise within the group and its previous high-quality work in producing the anthropometry guidance document.

There was also a suggestion for TEAM to carry out a prioritization process with a broader group, including academics, researchers and implementers, and publish a mapping of priorities and a call to action for further research. This broader group could also help fine-tune protocols and provide feedback. The call to action could take place via a peer reviewed article, a stakeholder meeting, or a side event during another conference where the needed experts are likely to attend (e.g., the Micronutrient Forum meeting in October 2024).

One adviser suggested that the Working Group should consider adolescent anthropometry and maternal anthropometry as priority topics going forwards. Others noted that the Working Group did not have the capacity to comprehensively address all questions related to child anthropometry, let alone these additional topics.

Session 4: Nutrition intervention coverage measurements – open discussion to way forward

Rebecca Heidkamp reviewed the work done by TEAM and other groups related to intervention coverage (i.e., the number of people who received an intervention over the denominator of all those who should receive the intervention). Doing this in a defined, measurable and valid way requires a clearly defined intervention and target group who should receive it.

Coverage data support action and accountability. Because countries invest in these interventions, they tend to be more responsive to examining policy implementation than they are to analysing nutrition status and other outcomes. Coverage data guide course correction and the planning of new policies and programmes. They can also be less costly and more feasible to collect than other data.

Coverage indicators are routinely collected across low- and middle-income countries. Many governments rely on periodic large-scale household surveys such as the DHS to monitor whether priority populations are equitably covered by nutrition actions. Ideally, there should be a balance between the use of population-based surveys and administrative data, as each source has different use cases. Population-based surveys can examine equity and co-coverage of interventions; however, they can be costly and there may be challenges related to recall validity. Administrative sources can address subnational disaggregation; however, they may be subject to data quality issues.

Research in South Asia and West Africa has shown significant gaps in intervention coverage. There are also important opportunity gaps, where interventions are not reaching the populations who need them despite having the needed delivery platform (e.g., less than half of women who attended at least four antenatal care visits received at least 90 days of iron and folic acid supplements). Further, national-level estimates can mask serious inequities in the intervention coverage.

TEAM’s engagement with coverage indicators is rooted in its initial work on the 2017 Global Nutrition Monitoring Framework (GNMF). Six of the GNMF indicators were related to intervention coverage, two of which were deferred (i.e., breastfeeding counselling and antenatal iron supplementation) because of a lack of guidance on how to measure them. TEAM formed working groups on these indicators.
In 2018, new IYCF counselling coverage indicators were endorsed by TEAM and adopted in the global DHS-8 questionnaire, which is used in more than 90 countries. The technical work to guide this process was led by the International Food Policy Research Institute, Alive & Thrive and DataDENT. TEAM also carried out a landscaping and analysis on antenatal iron supplementation coverage. An online survey analysis showed that less than half of the 142 respondents from 52 countries were satisfied with current methods of assessing iron and folic acid (IFA) supplementation coverage, while a review of DHS data from four countries highlighted quality concerns around recall of tablet count. These findings also have implications for other interventions for women, such as supplementation with multiple micronutrients, calcium and balanced protein-energy. Similarly, an IMPROVE study in Nepal showed overreporting by women, resulting in an overestimation of the true IFA coverage.

In December 2022, UNICEF released the global DHIS-2 Nutrition Module, including components on infant and young child feeding (IYCF) counselling, growth monitoring and promotion and treatment of acute malnutrition. Additional UNICEF guidance on administrative data for nutrition is forthcoming. Other partners have invested in developing nutrition-sensitive coverage indicators, including those related to large-scale food fortification, biofortification, social protection and school nutrition.

Areas in need of further work include (1) coverage of interventions for school-age children and adolescents; (2) quality of care and quality-adjusted coverage indicators; and (3) community-level administrative data. Nutrition quality of care metrics are needed for effective or quality-adjusted coverage, because broader quality of care standards do not prioritize nutrition. TEAM is represented in the new WHO-led working group for quality-adjusted coverage methods, which was launched in 2021.

**Points of discussion:**

There was some discussion about how to prioritize the remaining work on intervention coverage; for example, whether to begin by refining the indicators for which data are available but may not be valid, or by addressing the data gaps. TEAM could do some initial work on important data gaps (e.g., on school-age children and adolescents) with the goal of catalysing a broader movement. There are significant data gaps and questions related to measurement in pregnant women, which DataDENT is exploring, but this effort would be more powerful if supported by TEAM.

Many advisers felt there was a compelling case for the TEAM Working Group on this topic to continue. The issue of measuring quality of care for nutrition services and practices is particularly critical. There is also work to be done around the use of facility-based surveys and issues related to cognitive validity. TEAM could also review the quality of indicators that are developed by other groups. The Secretariat was in agreement with the continuation of the Working Group, noting the need to strengthen its capacity. External experts may be needed to support the group. A methodology paper published by the maternal, child and adolescent health (MCA) group could provide the basis for nutrition interventions.

The principles for framing coverage measurements could be used across intervention areas. Quality of care is the foundation; once that agenda is defined it can be applied to different issues. As a next step, it was suggested that TEAM develop a paper exploring key nutrition coverage issues.

**Session 5: Global nutrition estimates (child malnutrition, LBW, and anaemia)**

Richard Kumapley explained that the country, regional and global estimates for various nutrition indicators can be found in the WHO Global Health Observatory and on the UNICEF Data website. The WHO-UNICEF-World Bank Joint Malnutrition Estimates (JME) will be released in May 2023, which is also the tenth anniversary of the JME. This will be the first time that the JME Working Group has released sex-specific model-based estimates for stunting and overweight. Model-based estimates are
available for stunting and overweight, which will be released every two years, while primary data will be released at least every year. The 2023 estimates will not be updated again until 2025; however, primary data will continue to be updated and released.

The first country consultation on the estimates has been completed. UNICEF and WHO keep country catalogues for checking data sets and ensuring they are reflected in the final JME estimates. Beginning in 2018, UNICEF and WHO began realizing microdata to ensure estimates were comparable. This year, 763 sources have been reanalysed. In the 2023 report, five new countries will be added to the JME. The 2023 dataset contains 1,100 sources, 65 more than in 2022.

UNICEF and WHO are also updating the low birthweight estimates to cover the period of 2000 to 2020, for release in 2023. Similar methods are being used to the 2019 edition, including modelled annual estimates using country data from household surveys and administrative sources. The same survey adjustment method was used as in previous years to remove bias caused by missing values and heaping, guided by a validation study. The final low birthweight database includes 336 surveys for 95 countries that met inclusion criteria and have an adjusted estimate.

A refresh of the administrative database for low birthweight was conducted by UNICEF and WHO from December 2021 to June 2022. Institutionalization of the database and completion of metadata search and abstraction is ongoing. The low birthweight country consultations ended in November 2022, where countries review their estimates and provide any updates to the input data. Search and abstraction of complete metadata and database institutionalization also continues for the ‘unweighed at birth’ database.

Monica Flores-Urrutia provided an overview of the WHO global anaemia estimates. In the latest estimates for the 2000 to 2019 period, 489 data sources were collected from 133 countries, with 4.5 million haemoglobin measurements. Haemoglobin was adjusted for elevation using the United States Centres for Disease Control and Prevention formula and for smoking status, if available. Estimates were restricted to children 6–59 months of age and women of reproductive age, by pregnancy status. At the request of TEAM, a systematic review will be commissioned and the new estimates are expected to be published in 2025.

Points of discussion:

There was some discussion of underweight in women as an indicator. Estimates of underweight are not published, but data remain in the primary dataset and estimates are calculated every year at the regional and global level.

Session 6: Monitoring anaemia – challenges and potential opportunities

Monica Flores discussed trends in anaemia in children and pregnant women over time. Globally, there has been much less progress in reducing anaemia than anticipated, particularly compared with other nutrition and health indicators. Whether this is an effect of the methods of haemoglobin assessment or a true stagnation in reducing anaemia rates is yet to be determined, but it is likely a bit of both. More work is needed on assessment and prevention.

There has been greater progress in reducing total anaemia in children than in pregnant and non-pregnant women. Declines in reducing the prevalence of moderate anaemia can be seen for most populations and geographical locations, with slight increases in mild anaemia. There is also some indication that the prevalence of severe anaemia is decreasing. Overall, most countries are off-track to reduce anaemia by 50 per cent by 2025.
For the 2019 estimates, covariates that help predict haemoglobin concentration were used, which differed by population group. For the next round of estimates, WHO is exploring better ways to assess the monitoring of anaemia prevalence, considering measurement factors. As such, they reviewed primary data for the years 2000 to 2019 that were used in generating estimates for 2021. Next, they performed descriptive explorations and model changes to improve anaemia estimates.

For the next round of estimates, it will be important to consider three questions: (1) what are the consequences of only using haemoglobin concentrations assessed in venous blood (i.e., excluding haemoglobin concentrations derived from all types of capillary blood); (2) should an adjustment be made for the method of haemoglobin analysis (e.g., automated haematology autoanalyser, HemoCue 201, HemoCue 301); and (3) are there additional factors to explore?

Regarding the first question, if only venous blood sources are used, 76 per cent of all data for children will be excluded for global estimates and 64 per cent of all data sources for women will be excluded; the confidence intervals will therefore be too wide. A fair number of high-burden countries have three or more data sources measuring haemoglobin in capillary blood for children. However, fewer countries have three or more data sources measuring haemoglobin in venous blood in children; and these countries do not have high burdens of anaemia. The situation is similar for women and trends are not available for countries with high burdens of anaemia.

WHO also analysed the relationship between mean haemoglobin concentration and prevalence of anaemia in the global database by method of blood collection. This analysis found that variability in capillary blood (in women) does not affect anaemia estimates, as long as the mean haemoglobin concentration is below ~125 g/L, assuming the capillary measurement is unbiased.

To address the second question (i.e., whether an adjustment should be made for the method of analysis), WHO did a survey pairs analysis to investigate whether differences in mean haemoglobin or prevalence of anaemia between near-in-time surveys of the same population were associated with differences in type of blood collection used. This was a random effects meta-analysis and meta-regression of difference in mean.\(^\text{12}\) Mean haemoglobin results are 4 to 6 g/L higher in population-based surveys using HemoCue\(^\text{R}\) Hb 301 devices compared to near-in-time DHS of the same population using HemoCue\(^\text{R}\) Hb 201+ devices. These differences could be caused by another factor associated with selection of the HemoCue device. Mean haemoglobin results are associated with type of blood collection in children, but not in women.

HemoCue 201 is the most commonly used device, although the use of HemoCue 301 has increased over the last five years. Using data from the 2021 anaemia estimates, indicator variables in the model were explored for haemoglobin concentrations that had been assessed using two different devices, HemoCue 201 and HemoCue 301. In both children and women, the fitted coefficients for studies using HemoCue 301 indicate higher haemoglobin measurements. For children, when adjusting for HemoCue 301, there is a slight reduction in mean haemoglobin concentration and a slight increase in prevalence. For women, there is a similar pattern. These findings indicate that estimates should be calibrated against gold standards when HemoCue devices are used to measure haemoglobin concentration.

Some additional factors that could be explored further include: (1) development of criteria to assess data quality; (2) data collection methods (single drop versus pooled blood); (3) methods to adjust for higher variability of haemoglobin concentrations from capillary samples; (4) calibration of equipment; (5) training for data collection; and (6) altitude adjustments.
Points of discussion:

There was some discussion about the dispersion of values using the two methods. One adviser noted that a method with more than 5 per cent variation in precision should not be used.

These analyses are important for generating the evidence from which to advise countries on how to collect the most high-quality anaemia data, including whether capillary blood samples should be used. While venous blood samples are more accurate, there are few studies available across countries, making it difficult to monitor progress. Most venous blood samples are collected in high-income countries, where the burden of anaemia is low.

Some advisers felt that it would be better to avoid reporting on the progress of countries that are lacking good quality data, rather than reporting results that may not be meaningful. They highlighted the importance of advocating for research in this area, and for using only venous blood sources to derive estimates.

Other advisers found it difficult to accept the idea of using only venous blood samples, as this would exclude three quarters of the data already collected and preclude global monitoring. If the problems are primarily related to systematic variation, the analyses done by WHO show that it is possible to do regression adjustment for the device used to measure haemoglobin concentration. In this case, it could be possible to model changes in haemoglobin concentration over time and make adjustments. If random error is determined to be the principal issue, the estimates cannot be adjusted and global monitoring is obstructed.

There was some discussion about the challenge of communicating any changes in data collection recommendations to countries in relation to SDG monitoring. There could be an opportunity to categorize countries based on whether or not they have enough venous blood samples to complete a separate analysis, while continuing to report on capillary sources with a caveat about quality concern.

Session 7: Global nutrition targets progress tracking to 2030

Richard Kumapley provided an overview of global nutrition monitoring timeline in the lead up to 2030. The indicators used to track progress towards targets have evolved since 2012, when the World Health Assembly endorsed the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition. All indicators except low birthweight now have a database of primary data and the majority of estimates are modelled estimates.

WHO and UNICEF are working on an updated methodology document describing how SDG progress levels are assessed, including definitions of assessment categories (e.g., on track, some progress, no progress, worsening). In addition to describing the assessment categories, the document describes changes in targets, databases used to monitor global process, acceptable prevalence levels for the different indicators, how to calculate the annual average rate of reduction, the approach used to project estimates to 2030 and establishing a buffer around zero. An updated tracking tool will also be launched using the WHO World Health Data Hub infrastructure. It will introduce the 2030 progress assessments in addition to the already available 2025 assessments.

The year 2030 marks the mid-term period for the SDGs process. Many countries have volunteered to complete a review of the progress on 231 indicators, including nutrition. UNICEF will release a report on this SDG progress for indicators related to children and a progress assessment will also take place in 2025. The nutrition community will require a unified vision about whether any indicator changes should be proposed and the appropriate evidence to support it.
Session 8: Guidance on nutrition information systems

Rebecca Heidkamp provided an update on the work to develop the guidance on national nutrition information systems (NNIS) in the form of a fundamentals series and technical notes. See the reports of the twelfth and thirteenth TEAM meetings for more information. The Global Nutrition Cluster provided support to adapt the fundamentals series into an e-course.

The Working Group on Nutrition Information Systems is continuing to support the development of technical notes on topical issues as a supplement to the fundamentals series. They are designed to help stakeholders understand and address issues relevant to the design and operation of NNIS and were written by a range of authors within and beyond TEAM advisers.

Seventeen technical notes have been proposed; of these, five have been published; six are under development; and six have not yet been initiated. Advisers were invited to suggest names of individuals or groups who may be able to support with the topics that had not yet been initiated.

It is important to consider strategies for disseminating the NNIS fundamentals series and technical notes and promoting their uptake and use. Some previously raised ideas for facilitating this included working with the consultant developing the DHIS-2 dissemination strategy; hosting webinars and global and regional meetings, disseminating via listservs and engaging country partners.

Points of discussion:

It would be most powerful to share several NNIS technical notes together for greater impact. A TEAM partners consultation would also be an opportunity to share the various NNIS documents. There may also be opportunities to engage with the new Scaling Up Nutrition Coordinator to solicit support for the NNIS guidance documents. Once ISBNs have been issued and the technical notes can be officially published by WHO (they have already been cleared by UNICEF), it will be important to host a global webinar or event to raise awareness about these products.

A strategy for dissemination and resources to support it will be critical. This is applicable to all TEAM knowledge products. The TEAM Secretariat could help craft a broad dissemination strategy for TEAM products, linked to resources, which would identify questions to ask, windows of opportunity and the steps required to ensure dissemination and uptake. This could involve mapping out opportunities for dissemination. Soliciting feedback from users would also be important to understand how the guidance is being used and what user needs have not yet been met. A dissemination strategy should also be costed and factored into the budgets of TEAM products.

Fostering dialogue with countries is also important. For example, towards the end of a national nutrition strategy or plan period, UNICEF and WHO can encourage country stakeholders to draw on the NNIS documents for guidance as they consider how to monitor their next country strategy or plan.

Regarding the technical note on tracking progress (which has not yet been initiated), it was suggested that TEAM could adapt or repurpose guidance that had already been written on tracking progress more generally or for other indicators. There may also be opportunities to leverage work that was completed by or for a country and adapt it into a technical note. WHO Europe has data that could be used for a case study on the topic of triangulating data (a technical note topic, which has also not yet been initiated). A case study would be a particularly effective way of presenting the topic of triangulation.

UNICEF has a list of technical assistance requests received that could be useful to review when considering additional topics. There was a suggestion to consider adding a technical note on modelling, including assumptions and other considerations.
Advisers discussed the idea of developing a core list of indicators that could be recommended to countries. This would either be an NNIS technical note or separate piece of work. Some recommendations on this topic already exist via DHS and within UNICEF guidance documents. In addition to recommending core indicators, the technical could provide guidance on selecting other indicators appropriate to the context and country priorities.

The UNICEF Conceptual Framework on the Determinants of Maternal and Child Nutrition could be used to guide this work. There was general support for making this piece of work broader than an NNIS technical note. External groups could also be invited to contribute to promote buy-in.

Session 9: Gestational Weight Gain and nutrition indicator for older people – potential for TEAM involvement

Elaine Borghi described WHO’s efforts to take the lead on the development of international standards for gestational weight gain. The objectives of the initiative are for WHO to initiate a normative process to: (1) develop global gestational weight gain standards that can be used as a tool for dynamic monitoring in antenatal care in diverse settings; and (2) define optimal gestational weight gain ranges based on these curves, to reduce the risk of maternal and infant adverse outcomes. These efforts have been supported by the Bill & Melinda Gates Foundation. A Technical Working Group on Gestational Weight Gain is being formed on this topic and WHO would like to have at least one member of TEAM as a member.

This work is important, given the lack of evidence-based public health tools for monitoring gestational weight gain that apply to women across all body mass index (BMI) levels and contexts. In terms of recommendations, the National Academy of Medicine (formerly the Institute of Medicine) guidelines on weight gain in pregnancy\textsuperscript{16} were developed primarily from the findings of observational studies from high-income countries; thus, there is a need to develop standards that include low- and middle-income countries.

WHO will take the following approach to carry out this work: (1) define eligibility criteria for the inclusion of studies into the pooled dataset to create gestational weight gain charts, data acquisition strategies, and methods for data harmonization; (2) identify and harmonize eligible international datasets to define the underlying reference sample; (3) construct gestational weight gain reference values with the best available statistical approach after evaluating the properties of different measurement procedures; and (4) define optimal gestational weight gain ranges and recommendations based on the range in values associated with the lowest risks of adverse maternal and infant outcomes.

The intended outcomes of the project are (1) global standards that can be used in all countries and settings for monitoring gestational weight gain among the entire range of pre-pregnancy BMIs; and (2) updated guidelines for antenatal care based on these new standards. The project will aim to get as close as possible to a reference that is based on healthy mothers and children, while controlling for possible health outcomes in mothers.

Three WHO departments are involved in the project governance: Nutrition and Food Safety; Sexual Reproductive Health and Research; and Maternal, Newborn, Child and Adolescent Health and Ageing. An open selection was held for the research group that will support this project throughout the three next years, and Gilberto Kac (Federal University of Rio de Janeiro, Brazil), was selected as the lead researcher, joined by Thais Rangel (Federal University of Rio de Janeiro/University of British Columbia, Canada), Jennifer Hutcheon (University of British Columbia, Canada), and Kathleen Maher Rasmussen (Cornell University, United States). Kac, Rangel and Hutcheon had experience in developing a reference
on gestational weight gain for Brazil, and other multi-country related research, and Rasmussen led the technical group that worked on current Institute of Medicine pregnancy weight gain guidelines.

The upcoming Technical Working Group on Gestational Weight Gain will be tasked to advise WHO on the detailed protocol, including the definition of the eligibility criteria to determine a sample that is as prescriptive as possible, and on the methods and approaches to be used for the development of international gestational weight gain standards. Expertise is required in the areas of maternal and child health and nutrition; nutritional epidemiology; obstetrics, gynaecology and perinatology; perinatal epidemiology; medical statistics; and public health specialists in women’s reproductive health.

The proposed timeline for the project would span over the next three years. Milestone 1 (May 2023) is a technical document on the eligibility criteria for data to be incorporated in the pooling dataset. Milestone 2 (December 2023) is a technical report on the selection of the methodology for the construction of the global gestational weight gain standards. Milestone 3 (June 2024) is a technical report on the description of the final underlying sample for the standards. Milestone 4 (June 2025) is a technical document on the gestational weight gain optimal ranges and accompanying recommendations.

Another important effort is underway by WHO to strengthen measurement of nutritional status and effective coverage of nutritional care services among older persons. This is important because malnutrition is an indisputable risk factor for mortality and care dependence in older populations. More people worldwide are living longer and every country is experiencing growth in the size and proportion of older people.

In addition to the global nutrition targets and the SDGs, which aim to end hunger and all forms of malnutrition in all people, global communities also embraced a sweeping 10-year global plan of action to ensure that all older people can live long and healthy lives. This is known as the United Nations Decade of Healthy Ageing (2021–2030), which was approved by the World Health Assembly, and includes a WHO Unified Framework for Monitoring the Progress and Evaluating the Impact of the Decade of Healthy Ageing. Indicators related to ageing fall under the ‘outcome’, including effective coverage of nutritional care services, prevalence of underweight among older persons, prevalence of overweight among older persons.

Advisers were invited to join the initiative or to contribute support via its Secretariat.

**Points of discussion:**

Currently, individual-level data available on gestational weight gain to be used for constructing global standards are from low- and middle-income countries. There are significant data gaps for high-income countries for that purpose.

Regarding the composition of the Technical Advisory Group for Gestational Weight Gain, efforts will be made to recruit members from diverse backgrounds and geographical locations. Gestational weight gain standards will be established for all BMI ranges to determine what is optimal. This might also differ based on average heights.

It was noted that Parul Christian at Johns Hopkins University has some datasets that could be used on gestational weight gain.

For the nutrition of older populations, nutrition services are a broad category; it will be important to include linkages with social protection programmes. TEAM was also encouraged to contact Harold Alderman from the International Food Policy Research Institute on this topic.
China has issued a standard on gestational weight gain based on several cohorts, which can be shared with the research group.

It will be important to examine diet in the gestational weight gain datasets, including calcium intake, as well as hypertension and diabetes. WHO and the research group are preparing a list of these and other variables to consider, including type of pregnancy (i.e., natural or with fertility treatments; and singleton versus twin pregnancies). For the ageing population, vitamin B12 and micronutrient status overall will be important variables.

Japan recently changed its guidelines on gestational weight gain, which were previously based on data from other high-income countries, because they were not suitable for the population.

WHO will issue a call for data in June 2023. A suggestion was made to keep the call broad and to consider approaching high-income countries for data (e.g., patient data) in addition to research data.

**Session 10a: Updates – MICS and DHIS2**

The seventh round of the Multiple Indicator Cluster Survey programme (MICS-7) was launched in March 2023 at the United Nations Statistical Commission. This round uses a new questionnaire architecture, with a smaller base questionnaire that is used by all countries, in addition to complementary topics or modules that are selected by countries. The base questionnaire responds primarily to SDG indicators.

New complementary topics include adolescent mental health, anthropometry for children aged 5–9 years, children’s time use, domestic violence, food insecurity, and informed decision-making. With these new topics, MICS-7 has the potential to collect data for more than 40 SDG indicators.

The base component for nutrition is the under-five anthropometric measurements questionnaire, which has always been included. Complementary topics include IYCF indicators (following the updated IYCF indicators guide), anthropometry in children aged 5–9 years, food security, child food security and possibly anaemia. Topics available on demand include salt iodization and birthweight.

UNICEF is pursuing opportunities to link MICS-7 with administrative data sources to see what insights can be gained. For low birthweight for example, MICS data can be compared and triangulated with facility data. All MICS data will be geocoded and efforts will be made to explore geospatial variance and climate. A MICS online analysis tool for tabulations, maps and graphs will also be available this year, as well as MICS PLUS, which is a tool for collecting longitudinal data that is being piloted and will be offered as an option to countries.

Regarding administrative data, UNICEF and WHO have developed the first global guidance on nutrition indicators for routine data collection at health facility and community level. The guidance recommends indicators to be collected through DHIS-2 or other routine health information system used in countries. This is the nutrition module of a larger WHO toolkit on routine health information systems. Each module in the toolkit includes three elements: the guidance document with standard routine indicators; digital configuration packages; and training materials.

UNICEF supported the development of the first global nutrition module programmed in DHIS-2 to strengthen countries’ ability to capture, integrate and analyse routine nutrition data national subnational levels. The module covers six topics related to the following interventions: growth monitoring and promotion; IYCF counselling; micronutrients, including iron-containing supplements and vitamin A supplementation; maternal nutrition counselling; moderate and severe wasting; and emergencies.
The global guidance on nutrition indicators for routine health information systems covers the six topics above, with core essential indicators at facility and community level to be collected by all countries; additional indicators to fit country health system needs; and longitudinal indicators to collect if the country is tracking individuals over time.

UNICEF and WHO are reconvening the global technical consultation groups for each topic area to review and endorse the final version of the guidance document. A short online survey has been developed to map the review schedule in different countries and the data that are currently being collected in the health information system. Support will also be provided to countries to integrate global recommendations on routine nutrition indicators reporting.

Discussions are ongoing about the possibility of developing a set of standard indicators for a DHIS-2 individual tracker to collect longitudinal data. The WHO Data Quality Review toolkit also needs to be reviewed to integrate nutrition indicators, which are currently missing. As countries begin to integrate and use the new guidance for DHIS-2, there is a need to identify and prioritize a list of issues that require pilot testing (e.g., new data to collect, adjustments needed in DHIS-2 entry forms, usefulness of the data visualizations for action, etc.).

**Points of discussion:**

UNICEF previously contributed funding to countries to carry out MICS. For MICS-7, however, the country office or government will be encouraged to raise funds and contribute domestic financing. The decision to carry out a MICS is often made as part of the development of the UNICEF country programme document. MICS does not monitor the same indicators as DHS but there is some overlap. No decision has been made yet as to whether MICS surveys will collect capillary or venous blood for the anaemia indicator.

There is a joint DHS and Living Standards Measurement Survey working group that coordinates survey implementation within countries to avoid having two surveys within the same timeframe. There is a need to strengthen national technical advisory groups to best manage the timing of implementation of all surveys (MICS, DHS, Living Standards Measurement Survey, National Nutrition Surveys and Standardized Monitoring and Assessment of Relief and Transition Surveys). A data quality review is conducted when more than one survey is carried out during the same period.

There was some discussion about whether MICS-8 would allow groups to input to the survey development process in countries. A recommendation from TEAM, for example, would be compelling. UNICEF has also been advocating for the use of more nutrition coverage indicators.

UNICEF and WHO are seeking TEAM's feedback on the development of the routine health information systems guidance for nutrition indicators.

Internal advocacy with the health information systems groups is important to ensure that nutrition is included within the packages used by countries.

There was some discussion about overlaps and complementarity between the routine health information systems guidance for nutrition indicators and the NNIS fundamentals and technical notes. The NNIS documents do not go into detail on the indicators; rather, they focus on the systems. There are plans to eventually develop an NNIS technical note on core indicators. The focus of the routine health information systems guidance is on data use; for example, the indicators that should be tracked and reviewed during a quarterly facility meeting, with the goal of improving intervention coverage.
Some advisers also wondered how the global technical consultation groups would interface with TEAM on the development of core nutrition indicators. The work being proposed by TEAM on core indicators could provide the broader framework or landscape for this work and other types of data.

**Session 10b: Updates – Adolescent nutrition**

A technical advisory group was established by UNICEF in July 2021 to examine metrics for monitoring the nutrition of school-age children and adolescents. Its objectives are to discuss and provide inputs to monitor school-aged and adolescent nutrition, including a set of indicators and data collection methods and mechanisms; support the development of various products about adolescent nutrition metrics; and identify and provide input into areas of work to advance school-age and adolescent nutrition metrics. Selected members of the technical advisory group constitute a working group that is contributing to two deliverables for 2023: (1) the development of a global monitoring framework; and (2) the development of a paper on the state of knowledge on nutrition metrics for school-age children and adolescents.

On the first deliverable, an initial mapping of working groups and initiatives working on health and nutrition metrics for school-age children and adolescents has been conducted. An indicator matrix was also created to document all indicators available on this topic, including type, data source, frequency of collection, age group, etc. The working group members also reviewed and discussed existing conceptual frameworks to guide this work and agreed to adapt the UNICEF Conceptual Framework on Maternal and Child Nutrition for school-age children.

**Points of discussion:**

The issue of adolescent anthropometry has been an important challenge. There is still a lack of understanding about what BMI or changes in BMI mean physiologically for children and adolescents. WHO will address this issue via a proposal to the Bill & Melinda Gates Foundation to support the development of a weight reference for children aged 5 to 19 years.

There are discussions ongoing about expanding the Technical Advisory Group to add additional members, including other TEAM advisers if interested.

The possibility of establishing a TEAM working group on adolescent anthropometry would be discussed during the work planning session (below).

**Session 11: TEAM priorities for the next 3–5 years and TEAM workplan**

Edward Frongillo and Jennifer Coates led TEAM advisers through a discussion about TEAM priorities for the coming 3–5 years. Three questions would be important to consider in the medium- to long-term horizon in order to keep nutrition high on the global agenda: (1) what does the world need to know about nutrition; (2) what information needs to be obtained to have that knowledge; (3) what should TEAM do to help obtain that information?

Nutrition initially moved higher on the global agenda by focusing on child undernutrition and its link with mortality. The repositioning of nutrition with economic development and consensus messaging around the importance of the first 1,000 days have been important in creating commitment to investment in nutrition.

On the first question, **possible topics the world needs to know to keep nutrition high on the global agenda** could include: nutrition related to development, learning and preparation for adult roles of school-age children and adolescents; food choice drivers and behaviours; nutrition related to non-
communicable diseases (beyond healthy diets and overweight); coverage and quality of nutrition policies and programmes; and nutrition related to climate change mitigation and adaptation.

Additional topics were suggested by TEAM advisers during a group brainstorming activity, including:

- Food environments, which is linked to food choice and climate change mitigation
- Reframe nutrition within health and strengthen these links (i.e., nutritional status as part of human physiology); and how linking health and nutrition interventions can have greater impact
- Coverage quality and equity – who is missing out even as we see global progress
- Hunger and food insecurity and progress towards an adequate diet
- The contribution of nutrition to human capital development
- What share can nutrition play in health and well-being and how to engage with other sectors for impact
- The importance of linking preventive and treatment / development and emergency programmes more effectively to address root causes and build resilience
- Nutritional impacts of climate change and investments in nutrition to mitigate climate change
- The role of nutrition during pregnancy
- Links between food safety, nutrition, stunting and child development
- Promotion of indigenous and local food
- Data gaps and why data must be collected in a standardized way (i.e., the case for global monitoring)
- Micronutrient deficiencies and excess
- Phytonutrients
- Etiology and context

In order to be better prepared for the post-2030 discussions about new global goals, it is important to consider what the world needs to know about tracking progress on nutrition.

There was some discussion about how the shift to collecting more routine administrative data could be leveraged to obtain estimates for global monitoring. It would be good for TEAM to be prepared for this eventual global transition. Further, there is a need for clarity about how to use the data that is collected to its full extent, and guidance on what kind of data to collect, how often and for what purpose.

There is still very little information about how data are used for country decisions and policy change. There is a need to know about the kind of data that countries are demanding and what kind of data are not used to inform action. It would also be important to consider how TEAM links with other data communities.

TEAM could explore how data collection has changed since the COVID-19 pandemic, including adaptations that were made to avoid person-to-person contact during measurement that could be leveraged for a future pandemic.

On the second question of what information needs to be obtained to have this knowledge, advisers made the following suggestions:

- Crystalizing definitions and messaging to ensure effective communication
- Context monitoring
- Nutrition investment tracking
- Prepare the nutrition monitoring community to use administrative data and provide information on what data sources are needed, when and how often
- Mechanisms for remote data capture
- Incorporating nutrition causal analysis into analysis of nutrition monitoring data to understand how causes and contributing factors shift over time; and juxtaposing impact and monitoring data
- Describe what is needed from each sector for nutrition, how that information can be consolidated, and what these sectors need from nutrition
- Scenario building: what are the counterfactuals and the cost of not investing
- Information about how data are being used in practice
- Nutrition data literacy, including a level needed to use data for decision-making
- An environment that fosters digital transformation (e.g., a way to take photos of food to track dietary intake)
- Information about the quality of the data being collected and whether it is valid
- Population-based survey platform, or ideally, a national nutrition survey
- Better understanding of the data from the humanitarian sector
- Better understanding of the interventions being delivered in different contexts
- A theory of change for nutrition that includes various sectors and their impact on nutrition
- An approach centred in equity

To address the third question concerning TEAM’s potential role in obtaining this information or serving as an intermediary or liaison, advisers made the following suggestions:

- Develop guidance to support monitoring of the WHO essential nutrition actions\(^{18}\)
- Review guidance on data collection developed by other sectors and review activities taking place beyond nutrition to gain insights into where nutrition interventions could contribute
- Use the UNICEF Conceptual Framework to identify core indicators and which sectors need to be leveraged to address them, and proximal and distal drivers
- Feed into the World Bank Human Capital Index (of which stunting is an indicator)
- Initiate a call to action to establish a standard National Nutrition Survey, endorsed by WHO and UNICEF
- To determine whether something is within TEAM’s comparative advantage, prepare a landscape assessment of actors, data gaps, monitoring needs, performance indicators.

In the short-term horizon, TEAM advisers were asked to consider three questions: (1) what is TEAM looking to achieve during the next three to five years; (2) what should TEAM prioritize and why; and (3) what does TEAM not need to continue doing?

Based on previous discussions, in the next three to five years, TEAM advisers had expressed an interest in contributing (in a supporting liaison role) to the JME for infants and young children, development of metrics for healthy diets and metrics for school-age children and adolescents. In a more direct role, TEAM is hoping to improve anthropometric data quality, complete the NNIS technical guidance, develop a guidance for national nutrition survey, improve the assessment of anaemia (and the etiology of anaemia), improve the coverage, quality and equity of nutrition interventions, identify targets and indicators for nutrition and address monitoring of micronutrient deficiencies.

Advisers also made the following suggestions for TEAM’s work in the short-term. Some of these would involve simple monitoring and others would involve a greater investment or contribution.

- Developing a comprehensive framework for addressing anaemia, including diagnostics and etiology, to develop a more complete understanding of the problem and solutions
- Metrics of healthy diets and the link with fortified foods and the supply of nutrients from other interventions
- Adolescent anthropometry
- Context monitoring and mapping of multisectoral programming to address the underlying factors (e.g., social determinants of child growth)
- Triangulating data, including quality issues
- Consideration of anthropometry more broadly
- Guidance for national nutrition surveys

Advisers also noted that the metrics on healthy diets could be removed as they were being addressed by the HDMI. Suggestions were also made for WHO, UNICEF and DHS to meet to discuss possible work on national nutrition surveys. Alternatively, the topic of national nutrition surveys could be included within the TEAM NNIS Working Group or the Working Group on Anthropometry could become a Survey Working Group. A small team could also begin looking at targets and indicators, before feeding back to TEAM.

The Bill & Melinda Gates Foundation is supporting several micronutrients-related initiatives, including the Micronutrient Data Innovation Alliance (DInA). TEAM could examine the mandate of these groups and possible linkages (e.g., Megan Bourassa of DInA).

It was agreed that TEAM co-chairs and the Secretariat would provide a synthesis of the prioritization discussion to TEAM advisers for feedback. An interim call could be scheduled to discuss the synthesis by September 2023.

Session 12: TEAM operational plan

Kuntal Saha provided an overview of the feedback on TEAM operational modalities that had been received during the last TEAM meeting, an updated version of which was circulated among advisers. Further clarification was required on some aspects of the operational plan.

Regarding the duration of TEAM membership, members and co-chairs are appointed to serve with a minimum commitment of two years. Membership is subject to renewal after periodic review by the Secretariat. The Secretariat organizes voting among members for TEAM co-chairs.

Members were encouraged to join at least two TEAM working groups. External experts could be invited to join as needed. Each adviser would be expected to lead or co-lead at least one working group.

Points of discussion:

Advisers emphasized the importance of having continuity among TEAM advisers such that not all advisers should complete their terms at the same time. No maximum term limit was set by the Secretariat; however, some advisers expressed their interest in setting a six-year term limit. Flexibility is important to ensure that TEAM has the expertise required and maintains links with different monitoring groups.

Having administrative support for TEAM working group leads would help reduce the time commitment of advisers. The support available from the Secretariat for coordination has not been clear. The Secretariat could consider reaching out to each working group lead to discuss needs, budget and workplan.
The significant time commitment required of TEAM advisers (who are volunteers, supported by their institutions) is a barrier to inclusivity and could preclude representation from diverse voices, including independent experts.

TEAM adviser roles are outlined in the TEAM terms of reference. There are also unofficial duties that include developing partnerships, engaging in fundraising and networking on behalf of TEAM.

There are currently nine TEAM advisers; however, the Secretariat would like to add more depending on the renewed workplan and TEAM priorities for the next three to five years. The maximum number of TEAM advisers is 15. The Secretariat will circulate an open call for experts following administrative formalities that take considerable time. TEAM advisers can also suggest names of possible candidates.

On the issue of communications, the main channel for dissemination of TEAM products is the TEAM website. The WHO listserv is used to distribute new products and WHO promotes them at global gatherings. The Secretariat explored the possibility of a designated TEAM website but abandoned the idea due to complex and lengthy processes.

In response to discussions about the dissemination of TEAM products during the last TEAM meeting, the Secretariat and co-chairs agreed to draft a communications and visibility strategy. This document is being reviewed internally and shared with advisers for feedback in the coming months.

The WHO budget for TEAM was presented. UNICEF also contributes to TEAM activities. The Secretariat can also solicit funding for items not earmarked within the TEAM budget.

Working groups are invited to request funding from the Secretariat for their work plans and the Secretariat would also approach working groups about their needed budgets.

Many of the more active TEAM working groups have external members. It may be useful to have fewer working groups, with more equitable participation and clearly defined objectives and workplans.

Advisers emphasized that coordination support should be provided by a dedicated project manager or support person funded by the TEAM budget, rather than overburdening the Secretariat. A member of the Secretariat is also involved in each working group to provide some support and accountability. Having a competent coordinator who could attend working group meetings and follow-up on agreements would help push work forward. In this way, many working groups require both administrative, logistical support, as well as some degree of technical support.

The Secretariat is proposing a work planning cycle to improve organization. In January or February, working groups would submit a brief work plan and proposed budget. The Secretariat would reply by March and implementation could continue until December or longer. Some advisers suggested that the preparation of the work plan should occur in December of the previous year, to allow work to begin immediately in the new year. Working groups were encouraged to put demands on the Secretariat related to budget to help push the work forward.

Most advisers supported the idea of having one in-person TEAM meeting a year and one virtual meeting. In-person working group meetings were also seen as important. It may be more efficient to have working groups meet before the TEAM meeting rather than after the meeting. They may also be alternative meeting modalities, such as working breakfast or dinner meetings for working groups or shortening the team meeting and lengthening the time dedicated to working group meetings.

There were also suggestions to increase the frequency of virtual meetings but decrease their duration, such that only half of working groups report, for example.
Closing remarks

In closing the meeting, Kuntal Saha, on behalf of the TEAM Secretariat, thanked advisers for their time and expressed his appreciation to the USAID Advancing Nutrition team for hosting the meeting and providing logistics support.

Purnima Menon had stepped down from her role within TEAM earlier in the year. Advisers took the opportunity to recognize and thank her for her service and dedication to championing nutrition data.
Annex I. Agenda

Fourteenth Meeting of the WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM)
USAID Advancing Nutrition, Crystal City, Arlington, VA, USA
14–16 March 2023

### Day 1: Tuesday, 14 March

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>9:00 – 9:30</td>
<td>Welcome and introductions, Welcome remarks, Objectives &amp; expected outcomes of the meeting, Housekeeping/logistics issues</td>
<td>Jennifer Coates, Edward Frongillo, Mike Foley, Deputy Director/USAID Advancing Nutrition, Chika Hayashi, Kuntal Saha, Meaghan McSorley</td>
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<tr>
<td>9:30 – 10:30</td>
<td>Session 1: Healthy diet metrics – update and next steps</td>
<td>Jennifer Coates, Edward Frongillo</td>
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<td>10:30 – 11:00</td>
<td>Tea/Coffee</td>
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<td>11:00 – 11:40</td>
<td>Session 2: Updates from Anaemia working group</td>
<td>Sara Wuehler</td>
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<td>11:40 – 12:20</td>
<td>Session 3: Updates from Anthropometry Data Quality Working Group</td>
<td>Sorrel Namaste, Julia Krasevec</td>
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<td>12:20 – 13:00</td>
<td>Session 4: Nutrition intervention coverage measurements – open discussion to way forward</td>
<td>Rebecca Heidkamp</td>
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<td>13:00 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00 – 14:30</td>
<td>Session 5: Global nutrition estimates (child malnutrition, low birthweight and anaemia)</td>
<td>Richard Kumapley, Julia Krasevec, Monica Flores</td>
</tr>
<tr>
<td>14:30 – 15:00</td>
<td>Session 6: Monitoring anaemia – challenges and potential opportunities</td>
<td>Monica Flores</td>
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<tr>
<td>15:00 – 15:30</td>
<td>Session 7: Global nutrition targets progress tracking to 2030</td>
<td>Richard Kumapley</td>
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<tr>
<td>15:30 – 16:00</td>
<td>Tea/Coffee</td>
<td></td>
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<tr>
<td>16:00 – 17:00</td>
<td>Session 8: Guidance on Nutrition Information Systems</td>
<td>Rebecca Heidkamp</td>
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</tbody>
</table>

End of Day 1
## Day 2: Wednesday, 15 March

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 9:45</td>
<td><strong>Session 9:</strong> Gestational weight gain and nutrition indicators for older people – potential for TEAM involvement</td>
<td>Elaine Borghi</td>
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<tr>
<td>9:45 – 10:30</td>
<td><strong>Session 10:</strong> Any other updates from TEAM advisers/Secretariat</td>
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<td></td>
<td>- Multiple Indicator Cluster Surveys and DHIS2</td>
<td>Chika Hayashi/Edward Frongillo</td>
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<td></td>
<td>- Adolescent nutrition</td>
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<tr>
<td>10:30 – 11:00</td>
<td><strong>Tea/Coffee</strong></td>
<td></td>
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<tr>
<td>11:00 – 13:00</td>
<td><strong>Session 11:</strong> TEAM priorities for the next 3-5 years and TEAM workplan</td>
<td>Jennifer Coates/Edward Frongillo</td>
</tr>
<tr>
<td>13:00 – 14:00</td>
<td><strong>Lunch</strong></td>
<td></td>
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<tr>
<td>14:00 – 15:30</td>
<td><strong>Session 12:</strong> TEAM operational plan</td>
<td>Kuntal Saha/Chika Hayashi</td>
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<tr>
<td>15:30 – 16:00</td>
<td><strong>Tea/Coffee</strong></td>
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</tbody>
</table>

### Day 3: Thursday, 16 March

<table>
<thead>
<tr>
<th>Time</th>
<th>Side Meeting</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 11:00</td>
<td><strong>Side meeting 1</strong> Anaemia Working Group</td>
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<tr>
<td></td>
<td><strong>Side meeting 2</strong> Anthropometry Data Quality Working Group</td>
<td></td>
</tr>
<tr>
<td>11:00 – 13:00</td>
<td><strong>Tea/Coffee</strong></td>
<td></td>
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<tr>
<td>13:00 – 14:00</td>
<td><strong>Lunch</strong></td>
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<tr>
<td>14:00 – 16:00</td>
<td><strong>Side meeting 2 Contd.</strong></td>
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</tbody>
</table>

**End of Day 2**
Annex II. List of participants

14th Meeting of the WHO-UNICEF Technical Expert Advisory group on nutrition Monitoring (TEAM)

TEAM Members
1. Jennifer Coates – Co-Chair
2. Edward Frongillo – Co-Chair
3. Kaleab Baye – Member
4. Omar Dary – Member
5. Rafael Flores-Ayala – Member
6. Rebecca Heidkamp – Member
7. Sorrel Namaste – Member
8. Sara Wuehler – Member
9. Wenhua Zhao – Member

Observer
1. Chris Vogliano – USAID Advancing Nutrition

Rapporteur
1. Julia D’Aloisio

TEAM Secretariat (UNICEF)
1. Chika Hayashi
2. Robert Johnston
3. Yoshito Kawakatsu
4. Julia Krasevec
5. Vrinda Mehra
6. Louise Mwirigi

TEAM Secretariat (WHO)
1. Elaine Borghi
2. Monica Flores-Urrutia
3. Richard Kumapley
4. Lisa Rogers
5. Kuntal Kumar Saha
Annex III. Group photo

*Front row (from left to right):* Kuntal Kumar Saha, Rafael Flores-Ayala, Lisa Rogers, Monica Flores Urrutia, Vrinda Mehra, Sorrel Namaste, Wenhua Zhao, Jennifer Coates, Kaleab Baye.

*Back row (from left to right):* Julia D’Aloisio (Rapporteur), Chris Vogliano, Sara Wuehler, Rebecca Heidkamp, Elaine Borghi, Robert Johnston, Richard Kumapley, Julia Krasevec, Yoshito Kawakatsu, Omar Dary, Edward Frongillo.
References

1. The outcomes of these side meetings are not covered in this report.
4. Topics include: Definition and use of biologically and statistically derived anthropometric z-score flag values; thresholds for anthropometric data quality indicators; identification and disentanglement of random and systematic error; making the standardization process easier to administer during training and indicators for assessment; accuracy of collecting a single versus multiple height measurements; minimizing the impact of hair and clothing obstruction in height and weight measurements; best practices and value of conducting re-measurement during field work; effective collection of age data to generate anthropometric z-scores; and innovations in measurement equipment.
10. Available at: https://www.who.int/data/gho/data/themes/theme-details/GHO/gho-nutrition; and https://data.unicef.org/topic/nutrition/child-nutrition/.
13. The Fundamentals Series, containing five modules, is available at: https://www.who.int/publications/i/item/9789240043275.
14. The course is available at: https://data.unicef.org/resources/nutrition-nnis-guides.
15. Technical notes topics include: assessing an existing NNS (complete); building an effective data value chain for nutrition (complete); building a practical set of nutrition indicators and identifying data gaps (under development); costing, budgeting and financing (complete); using an NNIS in emergency situations and settings (under development); building and supporting the NNIS core team (under development); identifying software options for an NNIS (under development); mapping and assessing existing sources of nutrition data (not yet initiated); building and maintaining relationship with data providers (not yet initiated); using the NNIS to support planning and target-setting (under development); reconciling and triangulating nutrition data (not yet initiated); data quality assurance (not yet initiated); communicating actionable messages and disseminating outputs from the NNIS (under development); dashboards, scorecards and profiles (complete); developing effective data visualizations (complete); overview of analysis tools (not yet initiated); and tracking progress towards global nutrition targets (not yet initiated).
17. For more information, see <https://www.who.int/data/data-collection-tools/health-service-data/toolkit-for-routine-health-information-system-data/modules>.