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FCDO framing paper for supporting Nutrition Integration into Primary Health Care within the Universal Health Coverage Agenda

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About This Publication

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Abbreviations

ACER	Average Cost-Effectiveness Ratio
ANC	Ante-natal Care
BMGF	Bill and Melinda Gates Foundation
CIFF	Children's Investment Fund Foundation
CMAM	Community-based Management of Acute Malnutrition
DHIS	District Health Information System
DHS	Demographic and Health Surveys
EIB	Early Initiation of Breastfeeding
EU	European Union
FAO	Food and Agricultural Organization
FCDO	Foreign, Commonwealth and Development Office
GAC	Global Affairs Canada
GESI	Gender, Equality and Social Inclusion
GFF	Global Financing Facility
GHI	Global Health Initiative
GoP	Government of Pakistan
GPI	Global Performance Indicator
GPW	General Programme of Work
HLY	Healthy Life Year
HMIS	Health Management Information System
IDA	International Development Association
IFA	Iron and Folic Acid
INI	Immunisation-Nutrition Integration
IYCF	Infant and Young Child Feeding
LMIC	Lower and Middle Income Countries
MAM	Moderate Acute Malnutrition
MDG	Millennium Development Goal
MEL	Monitoring, Evaluation and Learning
MMS	Multiple Micronutrient Supplementation
MNP	Multiple Micronutrient Powder
MQSUN+	Maximising the Quality of Scaling Up Nutrition Plus
NCD	Non-communicable Disease
NPER	Nutrition Public Expenditure Review
PEPFAR	President's Emergency Plan for AIDS Relief
PFM	Public Financial Management
PHC	Primary Health Care
PNC	Post-natal Care
RMNCH	Reproductive, Maternal, Newborn, and Child Health
RoI	Return on Investment
RUSF	Ready to Use Supplementary Food
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SANRA	Scale for the Assessment of Narrative Review Articles
SDG	Sustainable Development Goal
SUN	Scaling Up Nutrition
SUNWWIC	Scaling Up Nutrition, What Will it Cost?
UHC	Universal Health Coverage
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization



Key Messages and Advocacy Points

- **Strengthening and scaling up nutrition service delivery unlocks a raft of other benefits, including multiplier effects on important health outcomes and improving the effectiveness of broader health investments, making it excellent value for money.** Investing in nutrition service provision has potential multiplier effects on other health outcomes, including neurodevelopmental, cognitive, cardiovascular and infectious morbidities such as respiratory and diarrhoeal disease.¹ This also results in increased productivity and promotes economic growth.
- **Investing in nutrition is cost-effective in comparison with many other health services.** Research has shown that whilst scaling interventions is costly,² the return on nutrition investments can be as high as 16:1. Methodologies that assess generalised cost-effectiveness and use Healthy Life Years (HLYs) to measure health benefits and estimate the economic costs of interventions from the health system perspective, including programme overhead and training costs, find that **nutrition interventions compare favourably with other health interventions.**
- **Nutrition interventions need to be implemented in partnership with the health sector and complement efforts at health systems strengthening that are currently underway.** Interventions can often be delivered using existing primary healthcare (PHC) platforms supplemented by outreach, community nutrition programmes and child health days. Links to health systems strengthening are vital to ensure greater coverage and efficiency.
- **While nutrition interventions have a long history of implementation via PHC facilities, full and effective integration of these services has remained elusive.** By full and effective integration, we mean nutrition services which are properly and equitably integrated into each of the WHO building blocks for health systems: leadership and governance; health workforce; health system financing; access to essential medicines and technology; health service delivery and health information systems. For example, evidence shows that there are clear and significant efficiency savings when supply chains are integrated. Recent research also shows that integrating nutrition services into PHC is a widespread commitment but has not been universally well-implemented. A challenge in achieving this is that there is no single model for integrating nutrition into health platforms, making it difficult to identify particularly effective modes of integration that are applicable in different contexts.
- **Delivery of nutrition interventions lags behind other service delivery areas in PHC.** The 2020 Global Nutrition Report notes that data from 48 mostly low-income countries shows that the average government expenditure on nutrition is US \$1.87 per capita, the lowest of all disease categories assessed. Studies show that coverage of most nutrition interventions was much lower than coverage of other health interventions and often falls far below the reach of health services through which they are delivered, such as antenatal care and delivery care. The reasons for this are complex and include a lack of understanding of the benefits of investing in nutrition, the multifaceted causes of malnutrition, poor data collection, lack of public awareness and consequent demand, and lack of political will.
- **Improving nutrition services is a human rights issue** since access to adequate food and nutrition is essential for the right to health, ensuring all individuals can live with dignity, free from hunger and malnutrition. By emphasising nutrition as part of PHC, we align it with human rights principles like equity and community involvement. Working with partners to support the push for Universal Health Coverage (UHC) is a central part of this work, as is formalising and strengthening the integration of nutrition in PHC.
- **Given the strong global push towards UHC, we are in an opportunity moment vis-à-vis mainstreaming nutrition into PHC.** Nutrition actors could leverage the current drive towards UHC to promote full and effective nutrition integration into PHC.

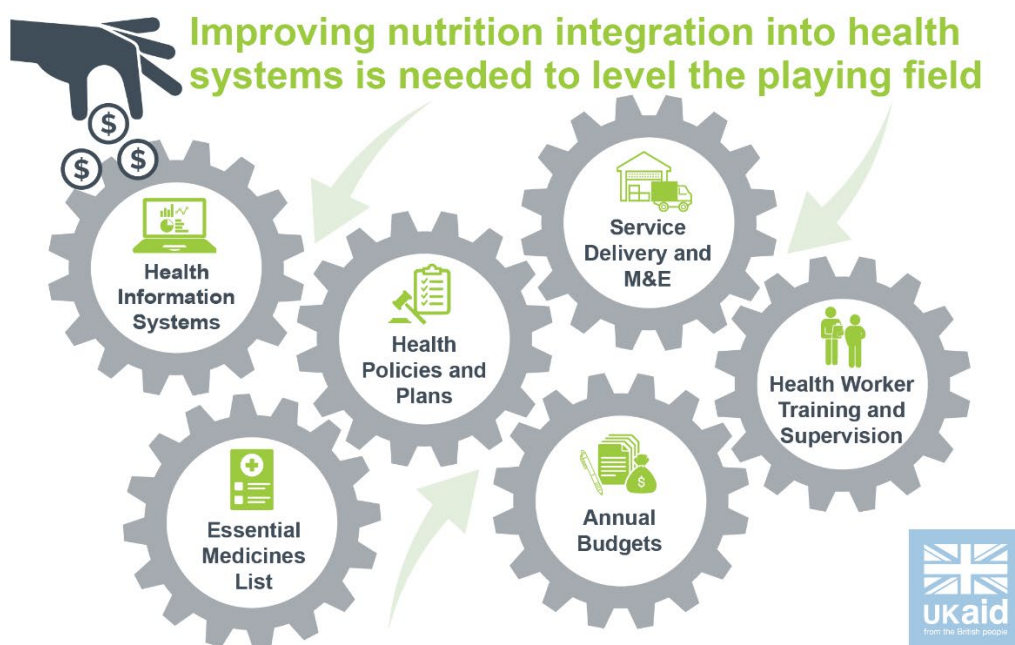
- **Focus efforts on how best to strengthen, scale up and increase efficiencies in nutrition integration.** Efforts to promote nutrition service delivery in PHC should target the **how**, not the **why**, and should focus on **strengthening** and **scaling** integration in order to capture more benefits of integration while addressing the problem of coverage lag when compared to other health investments.
- **Increasing funding for nutrition must go hand in hand with strengthening in-country capacities and systems to design, implement, manage, and evaluate large-scale programs.** This capacity-building, aligned with broader efforts to enhance health systems and nutrition data, will enable countries to effectively and efficiently scale up proven interventions as new financing becomes available.³²
- **We need to think and work politically.** Public health policies are influenced by political agendas, which may not always prioritise long-term investments in nutrition programmes over short-term gains. ‘Thinking and working politically’, with a focus on understanding and actioning the levers of policy change, will be critical to developing the strongest possible advocacy approach. We also recommend the broad use of gender-sensitive political economy analysis. Most primary caregivers are women, and gendered PEA would help build an understanding of how gender shapes access to power, resources and decision-making while ensuring that women’s perspectives are reflected in evidence-based advocacy.³
- **Ensuring nutrition integration is monitored at global, national, and sub-national levels will help drive action and results:** evidence from other policy areas, such as transparency indices, shows that global comparisons on shared metrics can encourage countries to do more in order to achieve greater competitiveness. Reliable coverage data for nutrition interventions is particularly scarce due to several measurement and data challenges. Data are not routinely collected in standardised ways across countries and are frequently not adequate for constructing actionable coverage indicators. Achieving a consensus on (at least a prioritised set of) nutrition coverage indicators and integrating them into PHC systems is crucial for improving the delivery and impact of nutrition interventions. Currently, a bespoke global nutrition tracer indicator is not being added to the UHC service coverage index. While such an indicator would be an additional way to measure progress towards UHC and arguably help drive this progress, it is also important to support the integration of strong national and sub-national nutrition indicators into national Health Management Information Systems (HMIS). This has clear advantages: national and sub-national indicators will be more relevant and more closely mapped to local services. They are also less likely to add to the reporting burden because they are integrated into existing HMIS data collection.

1 Purpose and scope of this framing paper

The purpose is to provide FCDO with an accessible, user-friendly advocacy tool to help catalyse the nutrition/health integration agenda as part of wider objectives on UHC and PHC strengthening, including by working with other donors and partners.

This paper provides FCDO with a resource summarising relevant evidence and information to support advocacy for integrating nutrition into PHC systems within the UHC agenda. The paper presents evidence about the benefits of prioritising nutrition, enabling FCDO to make the case for nutrition integration more strongly.

2 Coverage and access of nutrition services in PHC: where we are, and where we need to go



2.1 The state of integration of nutrition services into PHC: current situation

In spite of efforts to mainstream nutrition programming into public health, malnutrition remains a serious global problem, resulting in stunting, wasting, micronutrient deficiency, overweight, and obesity, while contributing to a range of non-communicable diseases (NCDs) and morbidities including diabetes, cardiovascular disease, and some kinds of cancer.⁴ In 2022, the WHO estimated that 149 million children were stunted, 45 million children are wasted at any given time, and some 37 million were estimated to be overweight or obese.⁵ Roughly 45% of under-5 child mortality is linked to malnutrition, which is estimated to affect one in every three people globally. Despite a formidable history of investments and interventions in fighting malnutrition globally, it remains an intractable and shape-shifting problem. Given the current momentum around achieving UHC by 2030, a commitment made at the 2019 UN General Assembly (UNGA) and renewed at a high-level meeting at the 2023 UNGA,⁶ this is a critical moment to reflect on opportunities to **improve, widen, and strengthen nutrition integration into universally accessible PHC.**

Strengthening and scaling up nutrition service delivery unlocks a raft of other benefits, including multiplier effects on important health outcomes.

Arguments in favour of integrating nutrition components into primary health care services are not new and go back at least to the 1978 WHO conference in Alma Ata, although ideas about the scope of nutrition interventions within PHC have shifted to take account of important changes in economies, demographics, and food consumption patterns. When nutrition interventions began to be included in PHC, the principal focus was on undernutrition; while this remains a serious global concern, current nutrition interventions also need to take account of NCDs and morbidities associated with over-consumption, especially in locations facing the 'double burden' of undernutrition and over-consumption, this being a relatively new development. Over time, a stronger focus on equity, access and quality of services has emerged.

Forty-six years on from the Alma Ata Declaration of 1978, and six years on from its confirmation in the 2018 Astana assembly, the battle to get nutrition *onto* the PHC agenda has largely been won.^{7 8} An ample evidence base also demonstrates positive outcomes from integrating health and nutrition services.⁹ For instance, nutritional support provided to patients with tuberculosis in India substantially reduced the risk of mortality.¹⁰ Current challenges revolve not so much around the *policy* of integration but around the benefits and costs of strengthening integration and improving and measuring coverage.

Integrating nutrition into the building blocks of health systems

In 2010, WHO developed a framework of six building blocks required by health systems; these have since become widely accepted as a definitive model for health systems strengthening.¹¹ In 2020, the Global Nutrition Report proposed particular points of integration of nutrition services into each of these building blocks;¹² it is instructive to consider these in the light of a review carried out by Salam et al (2019),⁹ which assessed the degree of integration of nutrition services using the building blocks framework. For each building block, a numerical score was assigned depending on the degree of integration of nutrition programmes into health systems. The key findings are shown in the table below:

Table 1: Building blocks and integration

WHO building blocks	GNR-proposed integration points	Salam findings
Leadership and governance	Full integration of nutrition care into national health sector plans	Most programmes consulted with stakeholders, and nutrition-specific interventions were included in existing systems and strategies
Health workforce	More qualified nutrition professionals; nutrition education and motivation benchmarks for healthcare workers	Almost all programmes used existing facility- and community-level staff to offer integrated nutrition-specific services
Health systems financing	Alignment of a costed nutrition care plan with healthcare financing plans	Most integrated nutrition-specific interventions had external funding which did not come through existing health system financing (opportunity for strengthening integration through domestic resource mobilisation and leveraging efficiencies with other budget lines)
Access to essential medicines	Inclusion of nutrition products in essential medicines lists; technological solutions to	Though some programmes enhanced existing channels, others set up nutrition-specific channels (opportunity for

WHO building blocks	GNR-proposed integration points	Salam findings
	enhance access to quality nutrition care	strengthening integration through merging siloed supply chains and leveraging efficiencies)
Health services delivery	Integration of nutrition services with health service delivery	Most programmes offered integrated services through existing delivery mechanisms
Health information systems	Optimisation of health records for nutrition care; collection, analysis and dissemination of population-level nutrition indicators through health information systems	Most programmes devised separate information system mechanisms for nutrition-specific indicators (opportunity for strengthening integration by incorporating nutrition modules in existing HMIS)

The table above indicates areas by building block where nutrition has been more successfully integrated, as well as areas where integration was weak or non-existent in the sample. While half of the building blocks showed greater integration of nutrition services, in the key areas of financing, essential medicines and commodities, and HMIS, **integration of nutrition services was limited or absent**. It is also important to note that even in the areas of leadership and governance, health workforce, and delivery platforms, the quality of integration can vary, depending on a range of factors, such as cultural norms, capacity of personnel, and political priorities. The building blocks are not isolated either, meaning that, for example, instabilities in external financing or supplies could have implications across other areas and affect the quality and scalability of services. Constituting a mutually dependent system, the integration of nutrition services into each building block potentially affects and is affected by integration into other blocks. While noting that integrating nutrition and health programming shows promise in terms of positive outcomes for both health and nutrition, Salam et al. argue that there is **no single model for integrating nutrition into health platforms**. One result of this is that it is difficult to identify particularly effective modes of integration. However, there are learnings from focused integrated interventions that have resulted in greater recognition and understanding of the mechanics for scaling up wider integration within the health system, for example, delivering immunisation and Vitamin A supplementation together.¹³ Nevertheless, opportunities remain for greater integrated delivery of nutrition-specific interventions, particularly in low- and middle-income countries, and for furthering the learning agenda on the mechanics.

Of note, there is a growing body of evidence that a more balanced ‘diagonal approach’ to programming can support the path to full integration whilst improving health and nutrition status. This is based on the concept that programmes targeting specific diseases must be accompanied by a wider range of activities to reinforce and strengthen the health system and PHC more broadly i.e. incorporate aspects of both vertical and horizontal programming. In Mexico, for example, health authorities defined a strategy in which specific intervention priorities, including vitamin A supplementation, ORS and de-worming, were successfully used to drive needed improvements in the health system and health outcomes.^{14 15 16}



Case Study: Integrating Nutrition Services into PHC in Pakistan

With the sixth largest population in the world, Pakistan suffers from high rates of child malnutrition and a poverty rate of 39%. At the time of publication, wasting and stunting rates were 17.7% and 40.2% respectively. It was calculated that Pakistan was losing US\$ 7 billion annually (3% of Gross Domestic Product) due to malnutrition. For some time, stunting rates have been slowly declining, but wasting has increased: the prevalence of Severe Acute Malnutrition (SAM) has risen from 5.8% in 2011 to 8% in 2018. Drivers of child undernutrition include maternal malnutrition (multiple micronutrient deficiencies, anaemia, wasting, overweight, obesity), low Iron and Folic Acid (IFA) uptake, early marriage, low levels of

education, sub-optimal Infant and Young Child Feeding (IYCF), food insecurity, inadequate uptake of basic social services, and widespread poverty.

Community-based Management of Acute Malnutrition (CMAM) was first introduced as a vertical, donor-funded emergency response to the 2005 Asad Kashmir earthquake. It included community screening, inpatient care for complicated SAM, outpatient care for Moderate Acute Malnutrition (MAM) and uncomplicated SAM. Ready to Use Therapeutic Food (RUTF) and Ready to Use Supplementary Food (RUSF) were used. The programme was as decentralised as possible to increase geographical coverage.

Between 2005 and 2011, Pakistan suffered multiple emergencies. In these years, the CMAM programme evolved towards Government of Pakistan (GoP) ownership: in 2010, Pakistan-specific guides were developed with the support of several UN agencies and NGOs. But these guidelines were mainly targeted at emergency use, and not integration into the health services. However, in 2012, the GoP launched CMAM in both emergency and non-emergency districts based on the National Nutrition Survey. From this point on, CMAM was widely scaled in all 36 districts of Punjab, 9 districts of Sindh, 7 in Balochistan and several in Khyber Pakhtunkhwa. Within this system, CMAM remained a vertical programme, delivered in the same premises as PHC, but with separate staff, supply chains and information management (note that two of these three areas of non-integration were also flagged by Salam, cited in this review). Challenges emerged around information management, weak supply logistics, and reliance on short-term funding, all of which contributed to reducing sustainability.

In 2018, the GoP endorsed the Astana Declaration on PHC. This was a watershed event and an important political economy lever: nutrition partners seized the opportunity to advocate for mainstreaming of wasting treatment and prevention within PHC. It was agreed that a minimal essential nutrition package would be added to the Universal Health Benefit Package delivered through the government health system. Supply chains were integrated with the health commodity supply chains, and nutrition indicators added to the HMIS. The integration process was guided by the Disease Control Priority Approach (DCP3). A cost-effectiveness analysis for the proposed package was carried out. Nutrition services were still delivered by temporary assistants hired when funding was available. This was identified as unsustainable, and it was proposed to mobilise and train Pakistan's huge cadre of Lady Health Workers (LHWs) to deliver nutrition services. Tax breaks were applied to the import of ingredients for therapeutic foods, and a Multisectoral Nutrition Strategy 2018-2025 was launched, enabled in part by political momentum around nutrition. Implementation responsibilities were assigned to key ministries within the government.¹⁷

A 2020 review of this strategy, carried out by MQSUN+, praised the sub-national consultative process which contributed to the development of the plan, noting alignment with global evidence on equity, financing and inclusion. The review also flagged the alignment of targets with World Health Assembly targets, characterising these as 'feasible yet ambitious.' It also identified areas for strengthening, in situational analysis, stakeholder engagement, budgetary frameworks, implementation and management, and monitoring, evaluation and learning.¹⁸ The review does not address the question of integration per se and does not consider efficiencies and effectiveness at outcome level.

Key case study takeaways

- This is largely a success story for integrating nutrition services into PHC at scale.
- Pakistan already had familiarity with CMAM because of its emergency use but was able to gradually move to government ownership and integration in PHC.
- Strong advocacy was necessary among policymakers to promote GoP uptake and scaling.
- The timing of GoP's signing of the Astana Declaration was fortuitous and well-recognised as a political economy lever.
- Pakistan's experience may not be typical: it could be an outlier or positive deviant. Ramadan et al. recently analysed data from 11 countries where nutrition services were provided as a part of PHC, finding "significant opportunities for the improvement of nutrition service delivery at the PHC level"¹⁹
- While the Multisectoral Strategy was assessed positively by MQSUN+, we do not at this point know how effective the scale-up was in terms of measured outcomes.

2.2 The coverage lag: evidence of nutrition service coverage lagging other health intervention coverage within integrated systems



Although nutrition interventions are now, at least in theory, widely integrated into PHC services, the **actual measured coverage of these interventions as delivered in health care settings frequently lags far behind coverage of non-nutritional health interventions**: this is evidenced in the 2020 Global Nutrition Report (Figure 1): “...in an analysis of 35 lower-income countries covered by Demographic and Health Surveys (DHS), the median coverage of IFA supplementation during pregnancy (33.4%) was only half of that for at least four antenatal care visits (66.6%). This continues despite the existence of evidence to show that some nutrition interventions e.g. vitamin A supplementation, can be successfully integrated into immunisation services. Such interventions checked certain facilitating criteria in that they had overlapping age groups, similar time to administer and required a similar skill level to administer, as childhood immunisations. Other factors that facilitated successful integration were effective planning and coordination between donors, governments and implementing partners; enhanced health worker training; additional staffing for increased workloads; stakeholder buy-in and engagement and routine monitoring and accountability systems in place.**Error! Bookmark not defined.**

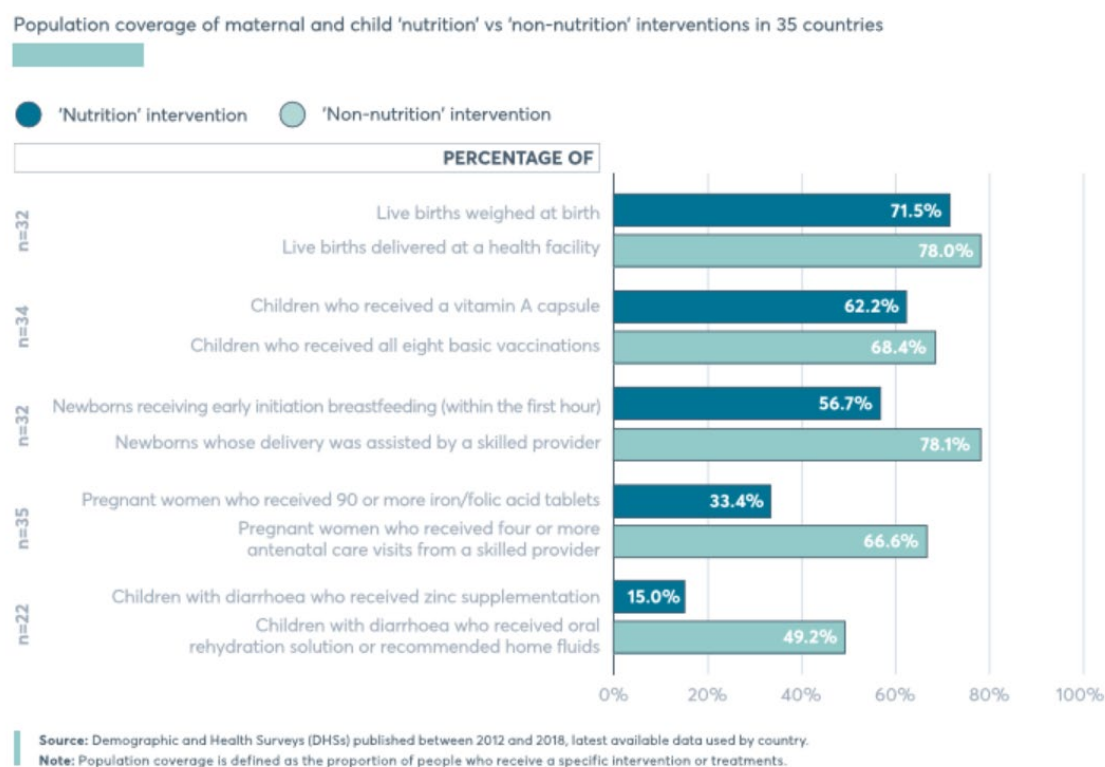
It is important to extend such analyses to other nutrition interventions, as well as other services that have been well integrated, and to understand the reasons that could be driving inequities in coverage that will ultimately lead to suboptimal health outcomes.” In a 2022 review article, Phuong et al. considered nutrition vs health intervention coverage in seven countries (Afghanistan, Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka), based on 2015-2018 DHS data on mothers with children under 5 years of age. The nutrition interventions chosen for the study were household consumption of iodised salt, consumption of iron supplements for at least 100 days during pregnancy, receiving deworming tablets during pregnancy, early initiation of breastfeeding (EIB), child weight management at birth, child iron supplementation, and child deworming. Health interventions considered for comparison were: four or more ANC visits, two tetanus injections for mothers, skilled birth attendance, child vitamin A supplementation, child Bacillus Calmette-Guérin vaccination, child measles vaccination, child diphtheria-pertussis-tetanus vaccination, and household access to an improved source of drinking water. The authors found that coverage of nutrition interventions was much lower than coverage of health interventions. On average, mother-child pairs received three to five of the health interventions in most of the study countries, while for nutrition

interventions, the average was much lower, between one and three.²⁰ In a 2020 study, Rebecca Heidkamp and colleagues examined data for five nutrition interventions and their service delivery for maternal, newborn, and child care for 50 countries, finding that “the coverage of most nutrition interventions falls far below the reach of health services through which they are delivered, particularly for antenatal care and delivery care.”²¹

Some reasons for nutrition lagging behind other areas are considered below:

- **Resource allocation:** efforts to reach global nutrition targets are constrained by a range of factors, including insufficient funding and gaps in knowledge around the finances required to scale up nutrition interventions, although this has improved in recent years.²² Adequate resources are unlikely to be invested without better understanding of current nutrition investments, future needs, impact, and methods of mobilising required funds. This calls for a stronger economic case for including nutrition interventions at scale and a clearer statement of how much an essential package of services will cost. Including nutrition objectives within nutrition-sensitive programmes across ministries is likely to be important to leverage resources for nutrition within those programmes.²³ This approach aligns with multisectoral nutrition programming and financing and the wider PHC agenda on addressing social determinants of health, but more clarity is needed on which are the priority sectors in different countries and the practical implications of funding streams and monitoring processes. In this context, ‘multisectoral nutrition programming’ refers to the delivery of nutrition interventions across a range of national government departments, in which appropriate interventions converge on targeted beneficiaries. Given appropriate resource allocation, nutrition sensitivity in other sectoral interventions would be strengthened and these interventions integrated into PHC alongside tailored process-monitoring systems.
- **Complexity of interventions and monitoring:** the multifaceted aetiology of malnutrition and the required multisectoral action add complexity to the implementation of effective interventions and means a range of data from multiple levels is required to track progress.²³ Gillespie et al. (2013) highlight a ‘simple’ example that even breastfeeding promotion requires multifaceted action, including behavioural change of breastfeeding mothers, workplace opportunities to breastfeed, responsible breast milk substitute advertising, and effective legislation to monitor conflicting narratives.²⁴
- **Lack of consensus on and usage of nutrition coverage indicators:** reliable coverage data for nutrition interventions is particularly scarce due to several measurement and data challenges. Nutrition interventions suffer from a lack of consensus around coverage indicators; more consistent and coherent uptake and application of coverage indicators is critical for measuring progress in delivering nutrition interventions through PHC. This point is addressed in more detail in Section Four of this paper. Data are not routinely collected in standardised ways across countries and are frequently not adequate for constructing actionable coverage indicators. Achieving a consensus on (at least a prioritised set of) nutrition coverage indicators and integrating them into PHC systems is crucial for improving the delivery and impact of nutrition interventions.
- **Lack of public awareness:** Unlike health issues such as infectious diseases with more visible symptoms, undernutrition, particularly chronic forms, may have no visible symptoms (wasting being an exception). Stunting needs to be identified with height measurement, and diagnosing micronutrient deficiency requires blood testing. This can leave nutrition open to neglect and underinvestment, even by the most well-meaning governments.²³ Furthermore, undernutrition makes the body more vulnerable to other diseases and impairs long-term growth, which is not fully realised by the public.
- **Fragmented approach:** nutrition interventions, particularly multisectoral programmes, are by definition spread across different sectors and levels of government. This can lead to fragmented and inefficient coordination and implementation.²⁵
- **Political Priorities:** Public health policies are influenced by political agendas, which may not always prioritise long-term investments in nutrition programmes over short-term gains.²⁶

Figure 1: Population coverage of maternal and child ‘nutrition’ vs ‘non-nutrition’ interventions in 35 countries¹²



2.3 Making the case for strengthening integration and scaling up

Value proposition: nutrition as a multiplier of positive health outcomes

Importantly, findings from the Salam et al. review cited above point to improvements associated with integration in outcomes for early initiation of breastfeeding, exclusive breastfeeding, Vitamin A deficiency and recovery from SAM and MAM. Indeed, **there is a growing body of evidence pointing to important linkages between prenatal and childhood nutrition and other health outcomes.** Grey et al. found that exposure to severe malnutrition or famine in childhood was ‘consistently associated’ with increased risk of cardiovascular disease, hypertension, and impairment of glucose metabolism later in life.²⁷ Kirolos et al. found that ‘childhood malnutrition is associated with impaired neurodevelopment, academic achievement, cognition and behavioural problems.’²⁸ The key advocacy point here is that **investing in more effective and efficient nutrition service delivery as an integrated element of PHC, rather than in a silo, is an investment in health and well-being more broadly.**

The cost-effectiveness case

Eregata et al. (2021) conducted a cost-effectiveness analysis of 159 health interventions to inform a revision of the Ethiopian essential health service package, in which cost-effectiveness was a selection criterion. Of these interventions, 77 interventions were in the areas of RMNCH, infectious diseases, or WASH, with the remaining 82 interventions focused on NCDs. The authors used the standardised WHO CHOosing Interventions that are Cost Effective methodology (CHOICE) for generalised cost-effectiveness analysis and used Healthy Life Years (HLYs) to measure health benefits and estimate the economic costs of interventions from the health system perspective, including programme overhead and training costs, finding that nutrition interventions **compared favourably with other health interventions.**

The majority (97%) of RMNCH and infectious disease interventions had an average cost-effectiveness ratio (ACER) of less than US \$1000 per HLY, whilst nearly half (44%) of NCD interventions had an ACER greater than US \$1000 per HLY. Note that as the ratio is calculated, a **lower ratio figure indicates greater cost-effectiveness of a given intervention.** The authors furthermore calculated that if only nutrition interventions are considered, 100% of interventions show an ACER value of less than US \$1000. By

comparison, only half of chronic respiratory disease interventions come in at less than US \$1000; for malaria interventions, this figure drops to 40%. Looking at select individual RMNCH / nutrition interventions, daily iron and folic acid supplementation was calculated as US \$693 per HLY, infant and young child feeding as US \$47, and management of moderate acute malnutrition as US \$33. Notably, family planning and preventing and managing unplanned pregnancy had the lowest ACER per HLY gained at US \$0.42 and US \$0.41 respectively, demonstrating an extremely high level of cost-effectiveness.²⁹

UHC, nutrition and human rights

The current global focus on achieving UHC, as enshrined in SDG 3.8, has two important implications. The first is that there is political momentum: as countries and institutions move to shore up universal health coverage, PHC provides the most cost-effective and equitable delivery platform for essential health services. Strengthening the integration of nutrition services within PHC, while scaling up coverage, would help to deliver more efficient and effective nutrition services. In turn, the current evidence would seem to predict a range of improved health outcomes deriving from this 'multiplier' effect. The second implication of the current traction around SDG 3.8 is the potential for the nutrition advocacy case to position nutrition as a human right. Emphasising the concept of nutrition as a key part of PHC helps to locate nutrition within human-rights-based frameworks as laid out in Alma Ata and Astana, while also building the case for greater equity.

Kraef et al.³⁰ emphasise the value of using a human rights-centred approach, citing the global response to the HIV epidemic as an example of the power of a rights framing. Drawing on the WHO concept of PHC as the 'programmatic engine of UHC,' the authors point to the similarities between nutrition and PHC agendas, observing that both are rooted in 'human-rights based frameworks, multisectoral action, community involvement and a life-course based delivery of evidence-based preventative and curative health care integrated with public health services.' 'Preventative and curative health services' in this argument would include a comprehensive package of nutrition services.

Nutrition and economic growth

There is wide consensus around the proposition that investment in better nutrition is also an investment in economic growth. This is the complement to the first point made above, concerning the relationship of childhood undernutrition to non-optimal health outcomes. Hoddinott et al. used a life-cycle approach to consider the particular case of stunting, finding that chronic undernutrition during the first 1000 days defines a series of pathways to economic losses. These include the loss of physical growth potential (short stature), cognitive impairments, lower productivity, and increased incidence of chronic disease. The authors note: 'Countries that want to generate and sustain broad-based wealth are likely to find that scaling-up [these] nutritional interventions to be some of the best investments they can make.'³¹ In their 2010 costing study discussed below, Horton et al note that 'Individuals lose more than 10 percent of lifetime earnings, and many countries lose at least 2-3 percent of their gross domestic product to undernutrition.'³²

3 How much does this cost?

Nutrition integration must be prioritised now because:



Global estimates for scaling up nutrition interventions

Horton et al. (2010) estimated the cost of scaling a package of 13 nutrition interventions from current (at the time of the study) coverage levels up to full coverage of the target populations.³² The 36 countries selected for the study were those with the highest burden of malnutrition, home to 90% of all stunted children in the world at the time of writing. The 13 nutrition interventions were selected for demonstrated effectiveness, particularly in reducing child mortality, improving nutrition outcomes, and protecting human capital. They spanned three main categories:

- **behaviour change interventions** (including breastfeeding promotion, good complementary feeding practices, and handwashing, assumed to be delivered in 1-1 through platforms such as community nutrition programmes);
- **micronutrient and deworming interventions** providing supplements for under-5s (vitamin A, zinc, Multiple Micronutrient Powder (MNPs), dewormers) and for pregnant women (IFA, iodised oil) as well as for the population at large (iron fortification of staples, salt iodisation);
- **complementary and therapeutic feeding interventions**, providing fortified therapeutic foods for prevention and treatment of moderate malnutrition among 6-23 month old children, and for CMAM among children under 5 suffering from SAM. Costs were estimated using the 'programme experience' approach wherein unit cost data for each intervention is harvested from existing programmes, and then adjusted according to delivery context.

Importantly, the authors note that most of the interventions included in the study need to be implemented in partnership with the health sector and **"will complement the efforts at health systems strengthening that are currently underway in many countries."** The former point resonates with the nutrition and health communities, which share a common understanding that the central issues are the **quality and scale** of this integration, as noted in Table 1 earlier. The authors further explain that most of the interventions considered can be delivered using existing PHC platforms supplemented by outreach, community nutrition programmes and child health days, but note that in this case, **links to health systems strengthening will**

be vital to ensure greater coverage and efficiency. Some of the costed interventions, such as the production of fortified foods, use market-based delivery systems, which may also require investment. The authors further highlight that increasing funding for nutrition must go hand in hand with strengthening in-country capacities and systems to design, implement, manage, and evaluate large-scale programs. This capacity-building, aligned with broader efforts to enhance health systems and nutrition data, will enable countries to effectively and efficiently scale up proven interventions as new financing becomes available.

Table 2: Cost of scaling key nutrition interventions to full coverage in 36 countries with the highest burden of undernutrition (simplified)Error! Bookmark not defined.

INTERVENTION	COST, MILLIONS US\$
BEHAVIOUR CHANGE	
Community nutrition programmes for behaviour change (0-59 months)	2893.7
MICRONUTRIENTS AND DEWORMING	
Vitamin A supplements (6-59 months)	129.7
Therapeutic zinc supplements (6-59 months)	346.1
MNP (6-23 months)	216.2
Deworming (12-59 months)	80.4
IFA (pregnant)	85.2
Iron fortification (all)	598.9
Salt iodisation (all)	80.4
COMPLEMENTARY AND THERAPEUTIC FEEDING	
Complementary food (6-23 months)	3642.6
CMAM for SAM (6-59 months)	2560.0
Capacity development for programme delivery	1000.0
MEL and operations research for programme delivery	200.0
TOTAL	11,833.2

The total cost (2010) for this scale-up is therefore estimated to be close to US\$ 12 billion per annum. Reflecting the fact that the article is 14 years old, we note that these interventions were selected to fight against *undernutrition*. Any effort to build nutrition interventions into UHC will need to take overnutrition (overweight and obesity) into account.

In 2016, Meera Shekar and World Bank colleagues conducted a further in-depth costing analysis, designed to assess the costs of meeting four of the six global nutrition targets endorsed by the 2012 World Health Assembly: stunting, exclusive breastfeeding, wasting, anaemia, low birth weight and overweight.³³ Shekar and colleagues carried out their analysis on four of these, considering how much it would cost to achieve the 2025 targets for each area:

- Stunting: 40% reduction in stunted under-5s
- Anaemia: 50% reduction in anaemia among reproductive-aged women
- Exclusive breastfeeding: Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%
- Wasting: reduce and maintain childhood wasting (childhood malnutrition) to less than 5%.

The authors estimated that it would be possible to achieve these targets by spending some US \$7 billion per year in addition to the US \$3.9 billion annual global spend on nutrition (at the time of publication). This is close to the 2010 estimate described above. Shekar et al argued for a more gradual approach, prioritising the most cost-effective actions for immediate scale up and in this way, catalysing progress towards the targets. This approach would require an additional investment of only US \$2 billion per year.

In 2017, a further costing study was carried out under the Investment Framework for Nutrition. This study considered cost and financing scenarios for four nutrition targets: stunting, anaemia in women of reproductive age, exclusive breastfeeding, and scale-up of severe acute malnutrition (SAM) treatment towards the wasting target. The intervention package included the 10 interventions from the 2013 Lancet Series, some additional interventions, and intermittent malaria treatment for pregnant women to address anaemia. The cost to achieve these targets was estimated at US \$7 billion per year over 10 years. The breakdown was as follows: 65% of costs for health sector interventions, 31% for targeted food supplements, and 4% for staple food fortification.³⁴



Case Study: Scale-up costs at national and subnational level in India

In 2016, Purnima Menon et al. estimated national and subnational costs for delivering 10 SUN interventions at 100% scale compared with the costs of scaling India's 14 nationally recommended interventions (India Plus).³⁵ This provides a useful complement to the Horton costing study discussed above because it is focused on a single large country, while the Horton estimates were carried out across 36 countries. Like the Horton study, Menon et al. used the programme experience approach in SUN What Will it Cost? (SUNWWIC) to estimate costs. As noted, the estimates were based on scaling to 100% coverage, except for treatment of SAM, which was set at 80%. All calculations were done at national level and then at state level for all 35 states. **The total cost for delivering the 10 core SUN interventions at 100% coverage across India was estimated at US\$ 4.22 billion, while the cost for delivering the India Plus interventions, similarly at full coverage across India, was estimated at US\$ 5.93 billion.** It is important to note certain key points about these estimates. The India Plus intervention package includes cash transfers to women to support breastfeeding, and supplementary food rations. The costs of these two components were estimated at US\$ 2.9 and US\$ 2.3 billion respectively, i.e. more than 80% of the total estimate. Overall, the SUN interventions generally cost more than the Indian interventions. In the state of Uttar Pradesh, the cost of implementing the India Plus interventions is some 20% of the entire India Plus estimated cost; the authors explain this variability with reference to Uttar Pradesh's large population, high fertility rate, and poor nutrition performance.

Doing more with less

In a finance-constrained world, although we clearly need more funding for nutrition, how can we also do more with less? Four years on from the COVID-19 emergency, there is little doubt that the current global context remains one of multiple overlapping crises and shocks: conflicts, climate disasters, and political and market upheavals have all made financing for nutrition a tougher ask than ever. This situation calls for reflection on (a) how existing funding flows can be shored up and made as sustainable as possible, (b) how new sources of funding can be mobilised and (c) how existing funding can be made to work harder and more efficiently. There are numerous evidence-based arguments in favour of investing in nutrition, but it is worth citing a simple economic one: every US dollar invested in preventing malnutrition yields an estimated US\$ 16 in net benefits.³⁶ The 2023 SUN publication, *Leveraging nutrition to save lives and accelerate the SDGs* identifies three opportunity areas which could accelerate progress on nutrition financing: leveraging more domestic resources; maximising existing sources of funding; and harnessing new sources of financing. Note that these three opportunity areas reflect points (a), (b) and (c) above. **Integration of nutrition into PHC services as part of the UHC agenda** speaks to point (c – using existing resources better), and this point is made in the SUN paper, where the authors note that nutrition is not necessarily prioritised in UHC financing. This latter point is supported in the 2020 Global Nutrition Report, where data from 48 mostly low-income countries shows that average government expenditure on nutrition is US \$1.87 per capita: the lowest government expenditure among all disease categories assessed. A further challenge concerns investment in PHC itself, which often competes with hospital-oriented investments. As Hanson et al. note, “Despite periodic attempts to refocus on PHC, vertical programmes and hospital-based and specialist-based care models have regularly been prioritised over PHC.”¹⁵



Case Study: Savings through supply chain integration in Kenya

One of the building blocks which was identified as an opportunity area for improving integration with existing systems is supply chains for nutrition intervention commodities. This was flagged in the Salam study and also identified in the case study presented above on integration of nutrition services into PHC in Pakistan. Eby et al. performed a cost analysis in Kenya, examining a 10-week pilot carried out by UNICEF in two Kenyan counties, in which a bespoke UNICEF supply chain which was used to procure, warehouse and distribute RUTF was integrated into the national Ministry of Health supply chain.³⁷ This allowed efficiency opportunities by consolidating procurement, warehousing and distribution of various commodities. Pre-integration, nutrition commodities were handled through six separate supply chains: UNICEF, WFP, PEPFAR, Global Fund, USAID and the Kenyan Red Cross. The UNICEF chain was used for the bulk of therapeutic food (90%) in arid and semi-arid areas; the authors note that while integrating UNICEF's supply chain into the national system did not by any means eliminate the other parallel supply chains, it did reduce them for the supply of RUTF used for management of SAM.

Findings from analysis of this pilot were revealing: in the two counties where the pilot integration took place, a 14% savings was achieved on transport, warehousing and staff costs by comparison with pre-integration costs. These savings grew to 37% when extrapolated from a 10-week pilot to a year because the initial capacity-building costs were then spread out. If only recurrent costs were considered and one-off costs such as training not included in the calculation, savings rise to 42%. Additional benefits include the building of capacity within the Ministry of Health, which is a key part of health systems strengthening, and increased national ownership of SAM management.

In the context of limited financial resources, governments may need to consider prioritising nutrition investment to the most cost-effective interventions within the country context, to maximise impact of funding and ensure that populations benefit from a package of services that meets their most pressing needs. Scott et al. (2020) assessed the likelihood of countries reaching SDG targets to end all forms of malnutrition by scaling up proven interventions according to the Optima nutrition model and identified priority interventions based on cost-effectiveness. Out of 18 nutrition interventions, four produced 88% of the total impact on stunting, costing US\$ 19.75 billion between 2019-2030. These were **treatment of malaria during pregnancy (IPTp)**, **infant and young child feeding education**, **vitamin A supplementation** and **lipid-based nutrition supplements for children**. **Vitamin A supplementation** and **cash transfers** would produce 100% of the SDG target on wasting at a cost of US\$ 275.97 billion between 2019 and 2030, while scaling up **IPTp**, **IFA supplementation for non-pregnant women** and **MMS for pregnant women** would cost US\$ 16.98 billion between 2019 and 2030 and would result in an 89% impact on the SDG anaemia target,³⁸



Financing levers and UHC

Writing in the 2021 Global Nutrition Report, Mehta et al. argue that nutrition-specific service coverage and quality remains low across many contexts. This is in part explained by the under-exploitation of health financing levers to support nutrition within UHC: countries often commit to 'include nutrition' in UHC but fail to specify what this involves. Countries need:

- A clearly defined nutrition package of services under UHC
- A financing strategy that effectively enhances allocative efficiency (such as Optima Nutrition or NPERs);
- An integrated system to monitor expenditure, service delivery, and results.

In the current fiscal environment, countries need to align their nutrition objectives with health financing systems under UHC. This includes **revenue raising** (strengthening evidence-based planning and allocation for nutrition; exploring innovative fiscal policies such as diet-related taxation), **pooling** (aligning and harmonising financing and budgets; maximising use of donor funds; implementing nutrition-responsive PFM systems), and **purchasing** (including costed and prioritised nutrition service package in UHC; incentivising promotive and preventative care; establishing planning, budgeting and payment mechanisms to enable and incentivise provision of nutrition services) under UHC to ensure that their nutrition-related intentions are funded.^{39 40}

4 Driving change and measuring progress

Universal Health Coverage and SDGs: monitoring progress with tracer indicators

An index of essential health services was selected to monitor progress towards SDG 3.8 but includes no nutrition-specific tracer indicator. Sustainable Development Goal 3.8 is centred on UHC globally.⁴¹ This is further broken down into SDG 3.8.1 (coverage of essential services) and SDG 3.8.2 (financial risk protection).⁴² The UN selected an index of essential health service coverage indicators to monitor SDG 3.8.1. These were constituted into four categories: Reproductive, Maternal, Newborn, and Child Health (RMNCH); infectious disease control; NCDs, and service capacity and access. Tracer indicators were selected for each category: a total of 16 were initially selected, but two (cervical cancer screening and access to essential medicines) were excluded because of low data availability. The UHC service coverage index is a relatively straightforward calculation of the geometric mean of the tracer indicator values for a given country.⁴³

The service coverage index has not met with universal approval. Nancy Fullman and Rafael Lozano published a critique, in which they note that reliance on existing household survey data from DHS and similar sources could narrow the usefulness of the selected indicators.⁴⁴ Furthermore, they flag the use of proxies to assess coverage for tobacco control, diabetes and hypertension, which “implicitly impedes the calculation of how many people receive health services.”⁴⁴ Fullman and Lozano also point to challenges in attributing UHC coverage to differences in UHC performance rather than survey differences while criticising the reporting cut-off for high-performing countries, which results in some anomalous conclusions and interpretations. They suggest three ways to improve indicator selection/index selection, which we report here because they are potentially applicable to the possible future selection of a nutrition tracer indicator: **expand** the pool of data sources from which UHC metrics are derived; **focus** UHC metrics around indicators of intervention coverage that reflect access to quality services for high-burden cases (for example, cancer, injuries); **harness** all available data for each indicator to provide the best possible estimates.

Nutrition indicators at national and subnational level

While there is currently a gap for a nutrition tracer indicator in the UHC service index for SDG 3.8.1, a range of nutrition indicators are used to track nutrition service coverage at **national** and **sub-national** levels. This is a much less ambitious task when the focus is not on indicators that work effectively globally but on indicators that can be used in national HMIS-based health and nutrition services monitoring. There are clear advantages to this: national and sub-national indicators will be more relevant and more closely mapped to local services. They are also less likely to add to the reporting burden because they are integrated into existing HMIS data collection. UNICEF and USAID are among the partner organisations actively supporting the deployment of bespoke nutrition indicators into the District Health Information System (DHIS2) software, which is the most commonly used HMIS platform.⁴⁵ A new DHIS2 nutrition module that UNICEF developed with USAID funding is still being refined and rolled out. In April 2023, USAID presented a webinar introducing the new nutrition package for deployment in DHIS2. The package includes indicators on maternal nutrition counselling (18 core indicators, 12 ANC and 6 PNC); growth monitoring and promotion (17 core indicators, 17 optional); IYCF (8 core, 2 optional, and 3 longitudinal); iron-containing micronutrient supplementation in pregnancy (3 core indicators, 6 optional, 1 longitudinal); vitamin A supplementation (12 core indicators, 1 optional, 3 longitudinal); SAM and MAM (20 core indicators); emergencies (9 core, 35 additional).⁴⁶ This is an important step in getting countries to include and monitor nutrition services within the health system.

It is important to note that national and sub-national level indicators for nutrition services are not incompatible with any future inclusion of a nutrition tracer indicator in the UHC index. The Sustainable Development Solutions Network proposes that indicators at these levels serve complementary purposes, with the UHC index tracer tracking health systems’ delivery of nutrition services at a higher level and lending itself to cross-country comparisons, and the national and sub-national indicators offering a more granular and contextualised perspective on nutrition service delivery.

The current lack of a nutrition indicator acts as a barrier to assessing nutrition service coverage under UHC; such an indicator would be an integral component of ensuring that nutrition services are fully operational under UHC. However, the process of selecting a tracer indicator is not straightforward and requires proper expert consultation and protocols. In the meantime, progress can be made with national and sub-national monitoring.

Implications of a nutrition tracer indicator in the UHC coverage index

Current global discussions indicate that including a nutrition indicator in the UHC coverage index is not likely to be agreed. Nonetheless, understanding the implications may help with future discussions around alternative options. Ensuring nutrition integration is monitored at global, national, and sub-national levels will help drive action and results. But this comes with costs. Like all SDGs, 3.8 demands the reporting of high-quality data from all countries. In many countries, this requires investment in supply-side data collection and statistical capacities.⁴⁷ The need for investment or capacity-strengthening will depend on existing capacities, and the economic implications will vary from country to country. This reporting burden already accompanies the existing coverage index; adding a nutrition tracer will, increase this. It is likely that the need for data capacity strengthening will be greater in those countries with lower index scores.

There is an argument to be made that Global Performance Indicators (GPIs) may have the potential to produce a ‘race to the top’ effect on policy, in other words, helping to drive investment in policies in line with associated indicators. The UHC service coverage index may be too recent an adoption to produce attributable results on policy change at this time, but research carried out on Millennium Development Goals (MDGs), which are, of course, older, shows (in a sample of 15 Sub-Saharan African countries) ‘there was considerable policy adjustment to MDG 3 across countries, pointing to the effectiveness of GPI-based development governance in re-steering policy priorities.’⁴⁸ A nutrition tracer indicator included in the UHC index would provide a global target with the potential to drive political will at the national level and shift budget allocations towards nutrition; it would also be a potential lever to harness new funding sources. Both of these were identified as opportunity areas in the 2023 SUN brief, *Leveraging nutrition to save lives and accelerate the SDGs*.³⁶

5 Suggestions for Action

The following table highlights some potential actions and advocacy levers to support the nutrition integration agenda.

Table 3: Actions to support nutrition integration

Desired outcomes	What 'good' looks like among international development partners and finance	What 'good' looks like at national and sub-national level	Getting to 'good': actions and evidence-led advocacy levers
Nutrition services are fully and effectively integrated into PHC delivery as a component of UHC	Partners collaborate without duplication to support the full integration of nutrition service packages into PHC. This support could be provided via dedicated TA platforms.	Quality nutrition services are effectively and efficiently delivered through PHC. Complementarities, synergies and integration efficiencies in HMIS and logistics are fully exploited. Nutrition commodities are included in health supply inventories.	Evidence shows that there are clear and significant efficiency savings when supply chains are integrated. Recent research also shows that while integration of nutrition services into PHC is a very widespread commitment, it has not been universally well-implemented.
Nutrition services are scaled to universal coverage	Partners collaborate efficiently on the work of scaling up nutrition services, supporting national efforts to: <ul style="list-style-type: none"> • Secure existing funding flows; • Attract new funding streams with an emphasis on national budget; • Make existing funding work harder and more efficiently 	Quality nutrition services are delivered at universal scale, nationally and sub-nationally. 'Lagging' of nutrition services in comparison to other health services is ameliorated. To ensure sustainability, these changes are institutionalised in national level policy.	Research has shown that the return on nutrition investments can be as high as 16:1. Cost-effectiveness is high in comparison with many other health services. Investment in nutrition service provision has potential multiplier effects on other health outcomes, including neurodevelopmental, cognitive, cardiovascular and infectious morbidities such as respiratory and diarrhoeal disease. Good nutrition is a human right, and scaling to universal coverage also speaks to equity goals.
Nutrition integration into UHC is measured by strong national and sub-national monitoring of nutrition services	Partners help to build national capacity in monitoring nutrition services via packages of indicators incorporated into HMIS.	Nutrition services are comprehensively monitored against a package of indicators included in national HMIS. National government bodies tasked with coordinating nutrition service monitoring oversee robust data collection on national and subnational nutrition services.	Ensuring nutrition integration is monitored at global, national, and sub-national levels can help drive action and results: there is evidence to show that performance indicators can help drive policy change forward and strengthen nutrition service delivery in PHC as a part of UHC.

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