Are Data Available for Tracking Progress on Nutrition Policies, Programs, and Outcomes in Pakistan?

Data DENT
Data for Decisions to Expand Nutrition Transformation

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Abbreviations

ANC	Antenatal Care
ARI	Acute Respiratory Infection
BISP	Benazir Income Support Programme
BMI	Body Mass Index
BMS	Breast Milk Substitute
CMAM	Community-Based Management of Acute Malnutrition
DHIS	District Health Information System
eLENA	e-Library of Evidence for Nutrition Actions
EPI	Expanded Program on Immunization
EWEC	Every Woman Every Child
GNMF	Global Nutrition Monitoring Framework
GNR	Global Nutrition Report
HAZ	Height-for-Age Z-Score
IFA	Iron and Folic Acid
IFPRI	International Food Policy Research Institute
IMCI–N	Integrated Management of Childhood Illness–Nutrition
IRMNCAH&N	Integrated National and Provincial Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition
IYCF	infant and young child feeding
KMC	Kangaroo Mother Care
LHW	Lady Health Worker
MAM	moderate acute malnutrition
MNCH	Maternal, Neonatal, and Child Health
MNP	Micronutrient Powder
NCD	Noncommunicable Disease
NCDRFS	Non-Communicable Diseases Risk Factor Survey
NIP	National Immunization Policy
NMIS	Nutrition Management Information System
NNS	National Nutrition Survey
PDHS	Pakistan Demographic and Health Survey
PHC	Primary Health Care
PMNS	Pakistan Multi-Sectoral Nutrition Strategy
PNC	Postnatal Care
ROSA	Regional Office for South Asia

RUTF	Ready-To-Use Therapeutic Food
SAM	severe acute malnutrition
SDG	Sustainable Development Goal
UNICEF	United Nations Children’s Fund
WAZ	Weight-for-Age Z-Score
WHO	World Health Organization
WHZ	Weight-for-Height Z-Score
WIFA	Weekly Iron and Folic Acid

Executive Summary

The World Health Organization (WHO) and other global nutrition and health agencies recommend nutrition actions throughout the life-course to address malnutrition in all its forms. In this report, we examined how Pakistan's nutrition policies and programs addressed recommended nutrition actions, nutrition outcomes, and the determinants of these outcomes. We reviewed population-based surveys and administrative data systems to assess the availability of data on nutrition actions and on indicators of determinants and outcomes.

Our policy review identified a total of 53 recommended evidence-based nutrition actions, of which 51 were applicable to Pakistan; of those, 47 were addressed in nutrition policies and programs. Nutrition actions not included in current policies and programs were: daily iron and folic acid (IFA) supplementation and deworming during preconception; and food supplementation for complementary feeding, and daily IFA supplementation during early childhood. The Pakistan Multi-Sectoral Nutrition Strategy (PMNS) (2018–2025) was found to recognize and address all the key determinants of nutrition; it also expressed an intent to address all the Sustainable Development Goal (SDG) nutrition targets for maternal, infant, and young child nutrition. Targets for noncommunicable diseases (NCDs) were not currently set in the national strategies.

Our data review found that, out of 47 actions that policies and programs addressed, population-based surveys contained data on 26 actions and administrative data sources contained data on 22 actions. Neither surveys nor administrative sources contained data on any actions aimed at adolescence, on energy and protein dietary supplements, on various types of counseling, on birth preparedness during pregnancy, or on optimal timing (delayed) of umbilical cord clamping; they also did not contain data on indicators related to newborn care, IFA supplementation around delivery and in the postpartum period, or counseling after growth monitoring during early childhood. The data gaps in population-based surveys on nutrition actions during early childhood were compensated for by the data on these nutrition actions that was available from administrative sources. Neither of the population-based surveys contained data on nutrition actions during early childhood such as breastfeeding counseling, counseling on appropriate complementary feeding, growth monitoring, and identification and management of severe acute malnutrition (SAM), or management of moderate acute malnutrition (MAM); administrative data sources, however, contained data on these actions. Population-based surveys contained data on most of the indicators on immediate and underlying determinants of undernutrition, but administrative data sources lacked data on indicators of immediate determinants. Population-based surveys contained data on all outcome indicators.

In conclusion, Pakistan's policy landscape for nutrition is robust, but there is limited consideration of targets for NCDs. The gaps in data availability for tracking progress on nutrition are much greater than are the gaps in policies and programs for addressing the recommended actions. Future population-based surveys and future modifications of other data systems should aim to fill the identified data gaps for nutrition actions.

1 Introduction

The World Health Organization (WHO) and other global nutrition and health agencies recommend nutrition actions throughout the life-course to address malnutrition in all its forms. It is anticipated that if evidence-based nutrition actions are implemented, supportive policies and legislation are introduced, and functioning health, education, and social protection systems established, then countries will be able to improve the nutrition and health status of their women and children, from which economic development and increased equity will inevitably follow (Nguyen et al. 2020).

As global recommendations are updated based on available evidence, it is anticipated that national governments and partners, in turn, will build on these recommendations to update national policies and programs. In addition, as countries develop national and subnational nutrition strategies and align policies and programs to these strategies, it will be critical to efficiently track progress on the roll-out of nutrition actions. Alongside the tracking of progress on nutrition actions, countries must also know whether programs are on track to help achieve change in key determinants of nutritional status and, ultimately, in nutrition outcomes. However, little is known in the South Asia region about policy coherence with globally recommended actions. Even less is known about the degree to which countries are able to track their progress on interventions, determinants, and outcomes as they build their national nutrition strategies.

To address this gap, International Food Policy Research Institute's (IFPRI) South Asia Office, in collaboration with the UNICEF Regional Office for South Asia (ROSA) and others, examined the alignment of national nutrition policies and programs with recommended global nutrition actions, and then assessed the availability of national data for tracking progress on nutrition. We compiled an overview of nutrition policies, programs, and data information systems for tracking nutrition actions, determinants, and outcomes in all the countries of the South Asia region: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. This report presents findings for Pakistan.

This review has two major objectives:

1) To assess the extent to which Pakistan's policies and programs a) address the recommended nutrition actions across the life-course; b) recognize both immediate and underlying determinants of nutrition; c) aim to tackle the key nutrition outcomes of relevance; and

2) To examine the availability of data for tracking progress on nutrition actions, determinants, and outcomes in Pakistan.

Review findings are intended to provide an evidence base that will further support national governments and their partners in identifying gaps in nutrition actions and improving data availability for tracking progress on nutrition actions, determinants, and outcomes.

2 Approach

The approach and methods used for the policy review and for the data availability review are described below. The review focused primarily on the critical period from adolescence to early childhood but, where relevant, we also included information relevant to noncommunicable disease (NCD) outcomes that were part of national strategies.

2.1 Methods: Policy Review

The policy review required three steps: first, to create a base framework of nutrition actions, determinants, and outcomes; second, to assemble national nutrition policies, strategies, and implementation guidelines; and third, to synthesize information on nutrition actions, determinants, and outcomes against the base framework.

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2.1.1 Identification of nutrition actions, determinants, and outcomes

Global guidance documents recommend several nutrition actions throughout the life-course, that is, adolescence, preconception, during pregnancy, around delivery, postnatally, and in early childhood. We identified a long list of recommended evidence-based nutrition actions from various sources (Box 1).

Box 1. Sources of recommended evidence-based nutrition actions

- *Essential Nutrition Actions: Mainstreaming Nutrition Through the Life-Course* (WHO 2019)
- *Guideline: Implementing Effective Actions for Improving Adolescent Nutrition* (WHO 2018)
- *Recommendations on Antenatal Care for a Positive Pregnancy Experience* (WHO 2016)
- *WHO Recommendations on Health Promotion Interventions for Maternal and Newborn Health 2015* (WHO 2015)
- *WHO Recommendation on Postnatal Care of the Mother and Newborn* (WHO 2013)
- *Making Pregnancy Safer: The Critical Role of the Skilled Attendant. A Joint Statement by WHO, ICM and FIGO* (WHO 2004)
- "Measuring the Coverage of Nutrition Interventions Along the Continuum of Care: Time to Act at Scale." (Gillespie et al. 2019)
- *The Global Strategy for Women's, Children's and Adolescents' Health 2016–2020* (Every Woman Every Child [EWEC] 2016)
- "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" (Bhutta et al. 2013)

Appendix 1 presents a full list of the identified nutrition actions by life-course. This list formed the frame of reference for the review of policies and programs.

To identify whether current policies and plans recognize and address immediate and underlying determinants of nutrition, we used the conceptual framework laid out under:

- "Strategy for Improved Nutrition of Children and Women in Developing Countries" (UNICEF 1991), and
- "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries" (Black et al. 2008).

Finally, the reference list of nutrition outcome indicators came from nutrition targets under the Sustainable Development Goals (SDGs) and additional targets included in the Global Nutrition Monitoring Framework (GNMF) (WHO 2017). To ensure country specificity, we also included additional nutrition outcomes stated in the country strategies; some of these were not included in either the SDG or GNMF list of targets.

2.1.2 Nutrition policy and program documents

We identified the government-issued nutrition-relevant policies, strategic plans, program implementation and operational guidelines (as of December 31, 2020). We accessed these documents through online searches, UNICEF regional and country offices, and key informants working in the region. Our final list of documents for Pakistan included six nutrition-relevant national policies/plans/strategies and four program documents, as well as program implementation guidelines currently in use (Box 1).

Box 2. List of documents reviewed

Policy/plan/strategy

- *National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan* (Ministry of Health, WHO Pakistan Office and Heartlife 2004)
- *National IRMNCAH&N Strategy (2016–2020)* (Pakistan, Ministry of Health 2017)
- *Pakistan Multi-Sectoral Nutrition Strategy (2018–2025)* (Ministry of Planning, Development and Reform 2018)
- *Pakistan Infant and Young Child Feeding Strategy, 2016–2020* (Pakistan, Ministry of National Health Services, Regulation and Coordination 2015)
- *National Vision 2016–2025 for Coordinated Priority Actions* (Pakistan, Ministry of National Health Services, Regulation and Coordination 2016)
- *Pakistan Adolescent Nutrition Strategy* (Pakistan, Ministry of Health Services, Regulations and Coordination, gain, WHO and UNICEF 2020)

Program document/program implementation guideline

- *National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009, revised 2015)

- National Maternal, Neonatal and Child Health Program (Pakistan, Ministry of Health 2007)
- *Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015)
- *Adolescent Nutrition and Supplementation Guidelines for Pakistan* (Pakistan, Ministry of National Health Services, Regulations and Coordination and WHO 2019)

2.1.3 Synthesis of information

Among the nutrition actions that global guidance documents recommend, we first identified those that were applicable in Pakistan.[1] We developed a spreadsheet on which to enter the information for each recommended and applicable nutrition action (policy name, year published, policy recommendations, program guideline name). We then reviewed Pakistan's policies and programs to determine whether the recommended and applicable nutrition actions were being directly or indirectly addressed by the policies. If a nutrition action was addressed in the policy, we reviewed program implementation and operational guidelines in order to assess implementation status, recommendations, and geographic reach.

We examined whether policies and strategies recognized the immediate and underlying determinants of nutrition and what activities were aimed at addressing these determinants. We did not, however, assess the overall adequacy of the activities aimed at addressing these determinants.

Finally, we reviewed the policies and plans to examine which nutrition outcomes were targeted. In addition to examining which global nutrition targets were targeted in the national plans, we also assessed whether country-specific nutrition outcomes were present as key policy targets.

Two researchers at IFPRI reviewed the national policy and program documents and their mapping to the framework of actions, determinants, and outcomes. The resulting spreadsheet was cross-checked by staff at UNICEF regional and country offices.

2.2 Methods: Data Availability

For each of the nutrition actions and each of the indicators for determinants and outcomes, we identified the availability of data for progress tracking in population-based household surveys and administrative data sources. We reviewed the questionnaires used in the Pakistan Demographic and Health Survey (PDHS) 2017–18 (Pakistan, National Institute of Population Studies, and ICF 2019), the National Nutrition Survey (NNS) 2018 (Ministry of National Health Services, Regulation and Coordination, and UNICEF 2019) and the Non-Communicable Diseases Risk Factor Survey (NCDRFS) Pakistan (Pakistan Health Research Council and WHO 2016). We also reviewed, and identified the availability of data

[1] Some recommended nutrition actions are only applicable based on settings; for example, IFA supplementation for adolescents is only applicable if the anemia prevalence among women of reproductive age is more than 20 percent. Appendix 1 provides related details.

3 Findings: Overview of Policies and Programs in Pakistan

In this section, we address 1) the extent to which policies and programs address recommended nutrition actions across the life-course; 2) the key determinants of malnutrition that are targeted in Pakistan's policies; and 3) the key nutrition outcomes that are targeted in Pakistan's policies.

3.1 To What Extent Do Policies and Programs Address Recommended Nutrition Actions?

Global guidance documents recommend a total of 53 nutrition actions through the life-course; of these 51 nutrition actions were applicable in Pakistan (Table 1).[2] Policies and programs addressed 47 nutrition actions. Both policy and programs addressed three of three actions targeting adolescence; two of four actions focused on the preconception period; 16 of 16 actions (policies) and 12 of 12 actions (programs) aimed at pregnancy, delivery, and the postnatal period; and 14 of 16 actions targeting early childhood. Appendix 1 provides details on how policies and programs address the recommended nutrition actions and Appendix 2 provides details on program implementation.

Policies and programs did not address daily IFA supplementation and deworming during preconception; nor did they address food supplementation for complementary feeding and daily IFA supplementation during early childhood.

[2] Actions that are not applicable include vitamin A and MNP supplementation during pregnancy.

Table 1. Nutrition actions addressed and not addressed by policies and programs in Pakistan by life-course

Life-course	Nutrition actions	
	Addressed in national policies and programs	Not addressed in national policies and/or programs
Adolescence	• Daily or intermittent iron and folic acid (IFA) supplementation* • Preventive deworming* • Food supplementation	
Preconception	• Contraception • Iodine supplementation	• Daily or intermittent IFA supplementation • Preventive deworming
Pregnancy	• Antenatal care (ANC) screening by a trained provider • ANC screening by a trained provider during the first trimester • Four or more ANC visits • Energy and protein dietary supplementation** • Daily or intermittent IFA supplementation • Calcium supplementation • Preventive deworming • Tetanus toxoid vaccination • Nutritional counseling on healthy diet • Weight monitoring • Advice about weight after weighing • Advice on consuming calcium • Advice on consuming IFA • Advice on consuming additional food • Advice on birth preparedness • Advice on exclusive breastfeeding	
Delivery and postnatal period	• Institutional birth • Skilled birth attendant • Optimal timing (delayed) of umbilical cord clamping • Assessment of birth weight • Support for early breastfeeding and immediate skin-to-skin contact • Optimal feeding of low-birth-weight infants • Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC) • Postnatal care (PNC) for babies around day three, day seven, and within six weeks after birth • PNC for women within three and seven days and within six weeks after delivery • Breastfeeding counseling • IFA supplementation • Food supplementation for malnourished lactating women	-

Life-course	Nutrition actions	
	Addressed in national policies and programs	Not addressed in national policies and/or programs
Early Childhood	• Breastfeeding counseling • Counseling on appropriate complementary feeding • Iron-containing micronutrient powder (MNP) • Zinc supplementation during diarrhea • Oral rehydration salts (ORS) during diarrhea • Vitamin A supplementation • Preventive deworming • Growth monitoring (weight assessment) • Counseling on nutritional status • Identification of severe or moderate underweight • Inpatient management of severe acute malnutrition (SAM) • Outpatient management of SAM • Management of moderate acute malnutrition (MAM) • Immunization	• Food supplementation for complementary feeding • Daily IFA supplementation

Source: Review of policies and programs (see Appendix 1 for details)

Note: * = to be scaled up in 2020; ** = food supplement (Mamta) is available to pregnant women who are enrolled in the Benazir Income Support Programme (BISP)

3.2 Which Key Determinants of Malnutrition Are Targeted in Strategies?

We reviewed the Pakistan Multi-Sectoral Nutrition Strategy (2018–2025). The strategy recognized and included activities for addressing the immediate determinants of nutrition, including inadequate nutrient intake by children (breastfeeding, complementary feeding), infectious diseases, and inadequate nutrient intake by mothers; it also addressed underlying determinants, including women's status (education and appropriate age of marriage and childbirth), sanitation and hygiene, food security, and coverage by social protection schemes (Table 2). Appendix 3 provides details on the activities that are included in the strategies.

Table 2. Immediate and underlying determinants recognized and addressed in national strategies

Potential indicators	Recognized and addressed
Immediate determinants	
1. Inadequate nutrient intake by children	
Breastfeeding	
Early initiation of breastfeeding	✓
Exclusive breastfeeding	✓
Continued breastfeeding	✓
Complementary feeding	
Timely introduction of complementary feeding	✓
Minimum dietary diversity	✓
Minimum meal frequency	✓
Minimum acceptable diet	✓
2. Infectious diseases	
Diarrhea	✓
Acute respiratory infection (ARI)	✓
3. Inadequate nutrient intake by mothers	✓
Underlying determinants	
1. Women's status	
Completion of high school	✓
Early marriage	✓
Early childbirth	✓
2. Sanitation and hygiene	
Use of improved sanitation facilities	✓
Safe water, handwashing	✓
Safe disposal of faeces	✓
3. Food security	✓
4. Socio-economic conditions	
Covered by social protection schemes	✓

✓=Addressed; ✗=Not addressed

Source: Pakistan Multi-Sectoral Nutrition Strategy 2018–2025 (Ministry of Planning, Development and Reform 2018)

3.3 Which Nutrition Outcomes Are Targeted by Pakistan's Strategies?

The PMNS 2018–2025 aimed to address all five maternal, infant, and young child nutrition outcome targets in the SDGs, that is, low birth weight, stunting, wasting, overweight among children under five years, and anemia among women of reproductive age (Table 3). It did not address the additional outcome indicators under the GNMF. Pakistan's nutrition policies and plans also did not appear to have set targets for the global goals around NCD–related outcomes (Table 3). However, National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan aimed to address the issue of non-communicable diseases.

Table 3. Nutrition outcomes on which Pakistan's strategies are focused

Nutrition outcomes	Sources	Included in country policy/plan
Global nutrition goals/targets		
Low birth weight (infants)	SDG	✓
Stunting (children zero to 59 months)	SDG	✓
Wasting (children zero to 59 months)	SDG	✓
Overweight (children zero to 59 months)	SDG	✓
Anemia (non-pregnant women 15 to 49 years)	SDG	✓
Underweight (non-pregnant women 15 to 49 years)	GNMF	✗
Overweight (school-age children and adolescents five to 19 years)	GNMF	✗
Overweight (women over 18 years)	SDG	✗
Overweight (men over 18 years)	SDG	✗
Hypertension (adults over 18 years)	SDG	✗
Diabetes (adults over 18 years)	SDG	✗

✓=Addressed; ✗=Not addressed

Source: Pakistan Multi-Sectoral Nutrition Strategy 2018–2025 (Ministry of Planning, Development and Reform 2018) and and National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan (Ministry of Health, WHO Pakistan Office and Heartlife 2004)

Note: SDG = Sustainable Development Goal; GNMF = Global Nutrition Monitoring Framework

4 Findings: Data Availability for Tracking Progress on Nutrition in Pakistan

4.1 Availability of Data on Program and Policy Actions

Multiple data sources exist in Pakistan. The Pakistan Demographic and Health Survey (PDHS) 2017–18, the National Nutrition Survey (NNS) 2018 and Non-Communicable Diseases Risk Factor Survey (NCDRFS) 2014-15 are the primary nationally representative population-based surveys. The Nutrition Management Information System (NMIS) and the District Health Information System (DHIS) are the primary administrative data sources in the country.

Of 47 nutrition actions that policies and programs were found to address in Pakistan, our review of population-based surveys revealed that the surveys provided data to assess coverage of only 25 actions: two during preconception, 11 during pregnancy, six during delivery and the postnatal period and six during early childhood (Table 4). Administrative data sources contained data on 22 actions: one during preconception, five during pregnancy, four during delivery and the postnatal period, and 12 during early childhood.

None of the population-based surveys and administrative data sources contained data on actions targeting adolescence (Table 4). In administrative data sources, data on actions focused on pregnancy was scarce for most of the nutrition actions. Neither surveys nor administrative data sources contained data on advice about weight after weighing, nor did they contain data about advice on consuming calcium and IFA, or advice on birth preparedness. Neither population-based surveys nor administrative data sources contained data on a number of actions aimed at delivery and the postnatal period, including optimal timing of umbilical cord clamping, support for early breastfeeding and immediate skin-to-skin contact, indicators related to care of low-birth-weight infants, IFA supplementation, and food supplementation. Population-based surveys did not contain data on certain actions targeting early childhood, including counseling on infant and young child feeding (IYCF), growth monitoring, and counseling and all indicators related to identification and management of severe acute malnutrition (SAM) and moderate acute malnutrition (MAM); administrative data sources, however, contained data on all these indicators. The only indicator for which there was no data in either surveys or administrative data sources was counseling on growth monitoring.

Table 4. Data availability on nutrition actions across the life-course

Nutrition actions	Data availability			
	Population-based surveys		Administrative data sources	
	PDHS 2018	NNS 2018	NMIS	DHIS
Adolescence				
Daily or intermittent iron and folic acid (IFA) supplementation	✗	✗	✗	✗
Preventive deworming	✗	✗	✗	✗
Preconception				
Contraception	✓	✗	✗	✓
Iodine supplementation	✗	✓	✗	✗
Pregnancy				
Antenatal care (ANC) screening by a trained provider	✓	✓	✗	✓
ANC screening by a trained provider during the first trimester	✓	✓	✗	✓
Four or more ANC visits	✓	✓	✗	✓
Energy and protein dietary supplementation	✗	✗	✗	✗
Daily or intermittent IFA supplementation	✓	✓	✗	✓
Calcium supplementation	✗	✓	✗	✗
Preventive deworming	✓	✓	✗	✗
Tetanus toxoid vaccination	✓	✓	✗	✓
Nutritional counseling on healthy diet	✗	✓	✗	✗
Weight monitoring	✗	✓	✗	✗
Advice about weight after weighing	✗	✗	✗	✗
Advice on consuming calcium	✗	✗	✗	✗
Advice on consuming IFA	✗	✗	✗	✗
Advice on consuming additional food	✓	✗	✗	✗
Advice on birth preparedness	✗	✗	✗	✗
Advice on exclusive breastfeeding	✓	✓	✗	✗
Delivery and postnatal period				
Institutional birth	✓	✓	✗	✓
Skilled birth attendant	✓	✓	✗	✓
Optimal timing (delayed) of umbilical cord clamping	✗	✗	✗	✗
Assessment of birth weight	✓	✓	✗	✓
Support for early breastfeeding and immediate skin-to-skin contact	✗	✗	✗	✗
Optimal feeding of low-birth-weight infants	✗	✗	✗	✗
Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC)	✗	✗	✗	✗

Nutrition actions	Data availability			
	Population-based surveys		Administrative data sources	
	PDHS 2018	NNS 2018	NMIS	DHIS
Postnatal care (PNC) for babies around day three, day seven, and within six weeks after birth	✓	✓	✗	✗
PNC for women within three and seven days and within six weeks after delivery	✓	✓	✗	✗
Breastfeeding counseling	✓	✗	✗	✗
IFA supplementation	✗	✗	✗	✗
Food supplementation for malnourished lactating women	✗	✗	✓	✗
Children (zero to 59 months)				
Breastfeeding counseling	✗	✗	✓	✗
Counseling on appropriate complementary feeding	✗	✗	✓	✗
Iron-containing micronutrient powder (MNP)	✗	✓	✓	✗
Zinc supplementation during diarrhea	✓	✓	✓	✗
Oral rehydration salts (ORS) during diarrhea	✓	✓	✗	✗
Vitamin A supplementation	✓	✓	✓	✗
Preventive deworming	✓	✓	✓	✗
Growth monitoring (weight assessment)	✗	✗	✓	✗
Counseling on nutritional status	✗	✗	✗	✗
Identification of severe or moderate underweight	✗	✗	✓	✓
Inpatient management of severe acute malnutrition (SAM)	✗	✗	✓	✗
Outpatient management of SAM	✗	✗	✓	✓
Management of moderate acute malnutrition (MAM)	✗	✗	✓	✗
Immunization	✓	✓	✗	✓

✓=Available; ✗=Not available

Source: Review of questionnaires used in PDHS 2017-19 (Pakistan, National Institute of Population Studies, and ICF 2019), NNS 2018 (Ministry of National Health Services, Regulation and Coordination, and UNICEF 2019) and Food Security and Nutrition Information System in Pakistan (FAO and IFPRI 2018)

Note: PDHS = Pakistan Demographic and Health Survey; NNS = National Nutrition Survey; NMIS = Nutrition Management Information System; DHIS = District Health Information System

4.2 Availability of Data on Key Determinants

Both PDHS 2018 and NNS 2018 contained data on indicators related to breastfeeding, complementary feeding, and prevalence of infectious diseases (diarrhea and acute respiratory infection [ARI]) (Table 5). Data on indicators related to women's status (completion of secondary school, early marriage, and early childbirth) were also available in PDHS 2018 and NNS 2018; likewise, both of them contained data on indicators related to hygiene (having a toilet, access to safe water, a designated place for handwashing and safe disposal of children's faeces). Only PDHS 2018 contained data on mothers with under-two children who used a toilet, and only NNS 2018 contained data on food insecurity and coverage by social protection schemes.

Administrative data sources had data on breastfeeding within one hour of birth, exclusive breastfeeding, introduction of solid, semi-solid, or soft foods, and diarrhea and ARI.

Administrative data sources did not contain data on continued breastfeeding, nor did they have data on three indicators related to complementary feeding (minimum dietary diversity, minimum meal frequency, and minimum acceptable diet).

Table 5. Potential indicators and data availability on immediate and underlying determinants

Determinants	Potential indicators	Data availability			
		NDHS 2016	NNMSS 2016	NMIS	DHIS
Immediate determinants					
Nutrient intake by children					
Breastfeeding					
	Percentage of infants zero to five months who were breastfed within one hour of birth	✓	✓	✓	✗
	Percentage of infants zero to five months who were fed only breast milk	✓	✓	✓	✗
	Percentage of children six to 23 months who had been breastfed in the 24 hours preceding the survey	✓	✓	✗	✗
Complementary feeding					
	Percentage of children six to eight months who had been introduced to solid, semi-solid, or soft foods	✓	✓	✓	✗
	Percentage of children six to 23 months who were consuming at least four out of the seven defined food groups	✓	✓	✗	✗
	Percentage of children six to 23 months who were breastfed and who also achieved the minimum dietary diversity and age-appropriate minimum meal frequency	✓	✓	✗	✗
	Percentage of children six to 23 months who received a minimum acceptable diet (apart from breast milk)	✓	✓	✗	✗
Infectious diseases					
	Percentage of children zero to 59 months who had had diarrhea in the last week	✓	✓	✗	✓
	Percentage of children zero to 59 months who had had acute respiratory infection (fever and chest drawing) in the last week	✓	✓	✗	✓
Nutrient intake by mothers					
	Percentage of currently pregnant women who were consuming foods from at least five out of the ten food groups	✗	✗	✗	✗
Underlying determinants					
Women's status					
	Percentage of women aged 15 to 49 years who had completed their high school (ten+ years of schooling)	✓	✓	✗	✗
	Percentage of women aged 20 to 24 years who had been married before their eighteenth birthday	✓	✓	✗	✗

Determinants	Potential indicators	Data availability			
		NDHS 2016	NNMSS 2016	NMIS	DHIS
	Percentage of women aged 20 to 24 years who had given birth to a child before their twentieth birthday	✓	✓	✗	✗
Sanitation and hygiene					
	Percentage of households with children under two years in which the house had a toilets	✓	✓	✗	✗
	Percentage of children under two years who were living in households with safe water	✓	✓	✗	✗
	Percentage of households with children under two years where the mother also used the toilet	✓	✗	✗	✗
	Percentage of households with children under two years which had a designated place for handwashing with soap	✓	✓	✗	✗
	Percentage of children under two years whose faeces were safely disposed of	✓	✓	✗	✗
Food security					
	Percentage of households moderately or severely food insecure	✗	✓	✗	✗
Socio-economic conditions					
	Percentage of households covered under social protection schemes	✗	✓	✗	✗

✓=Available; ✗=Not available

Source: Review of questionnaires used in PDHS 2017-19 (Pakistan, National Institute of Population Studies, and ICF 2019), NNS 2018 (Ministry of National Health Services, Regulation and Coordination, and UNICEF 2019) and Food Security and Nutrition Information System in Pakistan (FAO and IFPRI 2018)

Note: PDHS = Pakistan Demographic and Health Survey; NNS = National Nutrition Survey; NMIS = Nutrition Management Information System; DHIS = District Health Information System

4.3 Availability of Data on Nutrition Outcomes

Population-based surveys contained data on a majority of the nutrition outcomes targeted by Pakistan's policies and strategies. Data on NCD–related outcomes other than overweight among women were not available in PDHS 2018 and NNS 2018; however, NCDRFS 2014-15 contained data on overweight among men, diabetes and hypertension among adults. Only NNS 2018 had data on anemia among women of reproductive age and overweight among adolescent girls, and only PDHS 2018 had data on overweight among women. Data on low birthweight was available in the DHIS.

Other than data on low birth weight, no other nutrition outcome indicators were being tracked by administrative data systems.

Table 6. Data availability on nutrition outcomes

	Outcome indicators	Data availability				
		PDHS 2018	NNS 2018	NCDRFS 2014-15	NMIS	DHIS
SDG	Low birth weight (percentage of infants born with birth weights under 2500 grams)	✓	✓	-	✗	✓
	Stunting (percentage of children zero to 59 months who were below -2 HAZ)	✓	✓	-	✗	✗
	Wasting (percentage of children zero to 59 months who were below -2 WHZ)	✓	✓	-	✗	✗
	Overweight (percentage of children zero to 59 months who were above 2 WAZ)	✓	✓	-	✗	✗
	Anemia (percentage of non-pregnant women 15 to 49 years who were anemic)	✗	✓	-	✗	✗
GNMF	Underweight (percentage of non-pregnant women 15 to 49 years who had a BMI of less than 18.5 kg/m^2)	✓	✓	✓	✗	✗
	Overweight (percentage of children and adolescents five to 19 years who had a BMI-Z greater than 1)	✗	✓	-	✗	✗
	Overweight (percentage of women over 18 years who had a BMI greater than 25 kg/m^2)	✓*	✓*	✓	✗	✗
SDG	Overweight (percentage of men over 18 years who had a BMI greater than 25 kg/m^2)	✗	✗	✓	✗	✗
	Hypertensive (percentage of adults over 18 years who are had a systolic blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg)	✗	✗	✓	✗	✗
	Diabetic (percentage of adults over 18 years who had a fasting blood sugar level above 7.0 mmol/l [126 mg/dl])	✗	✗	✓	✗	✗

✓=Available; ✗=Not available; - =Not applicable; * = Available for women 15-49 years

Source: Review of questionnaires used in PDHS 2017-19 (Pakistan, National Institute of Population Studies, and ICF 2019), NNS 2018 (Ministry of National Health Services, Regulation and Coordination, and UNICEF 2019), Non-Communicable Diseases Risk Factor Survey Pakistan (NCDRFS) (Pakistan Health Research Council and WHO 2016) and Food Security and Nutrition Information System in Pakistan (FAO and IFPRI 2018)

Note: DHIS = District Health Information System; GNMF = Global Nutrition Monitoring Framework; HAZ = height-for-age z-score; NNS = National Nutrition Survey; NCDRFS = Non-Communicable Diseases Risk Factor Survey; PDHS = Pakistan Demographic and Health Survey; SDG = Sustainable Development Goal; WHZ = weight-for-height z-score; WAZ = weight-for-age z-score; BMI = body mass index; BMI-Z = body mass index z-score

5 Conclusions and Recommendations

5.1 Policy Gaps

Pakistan has a robust nutrition policy framework and various programs intended to deliver nutrition actions throughout the life-course. Findings showed that policies and programs address 47 of 51 recommended nutrition actions that are applicable in Pakistan. Gaps in addressing nutrition actions are more concentrated during preconception and early childhood. Policies and programs do not currently address IFA supplementation and deworming during preconception, food supplementation for complementary feeding, or daily IFA supplementation during early childhood. It is promising, however, that Pakistan's multi-sectoral nutrition plan recognizes and addresses all the key determinants of nutrition and, apart from some NCD goals, it aims to tackle a range of globally accepted nutrition goals.

5.2 Data Gaps

The gaps in data availability for tracking progress on nutrition are much greater than are the gaps in policies and programs for addressing recommended nutrition actions.

- While NNS 2018 collected data on the heights and weights of adolescent girls, future rounds of the survey should also collect information on actions for providing IFA supplementation and deworming to adolescent girls.
- Data gaps in population-based surveys on nutrition actions during pregnancy were mostly around indicators related to counseling; the upcoming Demographic and Health Survey (DHS) using the DHS-8 questionnaire should fill this gap. Future rounds of population-based surveys, however, should be designed to fill the current gaps in data on nutrition actions during delivery as well.
- Data gaps are prominent for interventions targeting children, including on new-born and on nutrition actions during early childhood; these need to be closed.
- Administrative data sources should collect information on counseling of, and provision of calcium supplementation to, women during pregnancy. Administrative data sources should also begin to collect data on nutrition actions during the postnatal period.

5.3 Recommendations

This report is intended to spark discussions among the nutrition policy community in Pakistan and where relevant, to support decisions about closing both policy and data gaps Our primary recommendations are noted below.

- Assess whether the gaps identified in our nutrition policy review are relevant in the context of the current burden of malnutrition in Pakistan; if relevant consider updating national nutrition strategies to fully encompass all forms of malnutrition.

- Review opportunities for strengthening nutrition data collection—both via surveys and administrative data—to close gaps in data needed for tracking progress on existing policies and programs. Given the data gaps identified in our review, efforts to improve the availability of data on child nutrition interventions are likely most important.

6 Appendices

6.1 Appendix 1: Nutrition Actions Addressed by Policies and Programs

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
	Adolescence						
1	**Intermittent or daily iron and folic acid (IFA) supplementation** *(Intermittent if anemia prevalence is more than 20 percent and daily if anemia prevalence is more that 40 percent among non-pregnant women)*	(WHO 2019)	✓ 52 percent Global Nutrition Report (GNR) country profile)	✓	Pakistan Multi-Sector Nutrition Survey (PMNS) (2018–2025)	✓ **Weekly Iron and Folic Acid (WIFA) Supplementation Program**	3
2	**Preventive deworming** *(If prevalence of any soil-transmitted helminth infection is 20 percent or higher among adolescents 11 to 19 years)*	(WHO 2018)	✓	✓	Integrated National and Provincial Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition (IRMNCAH&N) Strategy (2016–2020)	✓ **WIFA Supplementation Program**	3
3	**Food supplementation** *(All countries, all settings)*	*e-Library of Evidence for Nutrition Actions* (eLENA) (WHO, n.d.)	✓	✓	Pakistan Adolescent Nutrition Strategy (PANS 2020) (Pakistan, Ministry of Health 2020)	✓*	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
	Preconception						
4	**Daily or intermittent IFA supplementation** *(Intermittent if anemia prevalence is more than 20 percent and daily if anemia prevalence is more than 40 percent among non-pregnant women)*	(WHO 2019)	✓ 52 percent (GNR country profile)	✗	NA	✗	NA
5	**Preventive deworming** *(If prevalence of any soil-transmitted helminth infection is 20 percent or higher among women of reproductive age 15 to 49 years)*	(WHO 2019)	✓	✗	NA	✗	NA
6	**Contraception** *(All countries, all settings)*	Every Woman Every Child, 2016–2030 (EWEC 2016)	✓	✓	PMNS (2018–2025); IRMNCAH&N (2016–2020)	✓ **Maternal, Neonatal and Child Health (MNCH) Program**	3
7	**Iodine supplementation** *(If 20 percent or fewer households have access to iodized salt and pregnant women are difficult to reach)*	(WHO 2019)	✓	✓	Universal salt iodization	✓	3
	Pregnancy						
8	**Antenatal care (ANC) screening by a trained provider** *(All countries, all settings)*	(WHO 2004, 2016)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program**	3
9	**ANC screening by a trained provider during the first trimester**	(WHO 2004, 2016)	✓	✓	PMNS (2018–2025)	✓	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
	(All countries, all settings)					**MNCH Program**	
10	**Four or more ANC visits** *(All countries, all settings)*	(WHO 2004, 2016)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program**	3
11	**Energy and protein dietary supplementation** *(If underweight prevalence among women is more than 20 percent)*	(WHO 2019)	✓ 1 9 percent (PDHS 2017-18	✓	PMNS (2018–2025)	✓ **Mamta under Benazir Income Support Program (BISP)**	3
12	**Daily or intermittent IFA supplementation** *(Daily in all countries, all settings; intermittent if anemia prevalence among pregnant women is less than 20 percent or daily iron is not acceptable due to side-effects)*	(WHO 2019)	✓	✓	PMNS (2018–2025); IRMNCAH&N Strategy (2016–2020)	✓ **MNCH Program**	3
13	**Vitamin A supplementation** (Where 5 percent or more of women have a history of night blindness during pregnancies in the past three to five years, or if 20 percent or more of pregnant women have vitamin A deficiency)	(WHO 2019)	✗	✗	NA	✗	NA
14	**Calcium supplementation** (Where dietary calcium intake is low)	(WHO 2019)	✓	✓		✓ **MNCH Program**	3

[1]Even though the action was not applicable, country's policy and program had addressed this action. Therefore, we considered the action applicable.

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
15	**Iron-containing micronutrient powder (MNP) supplementation** (Settings with a high prevalence of nutritional deficiencies)[a]	(WHO 2019)	✗	✗	NA	✗	NA
16	**Preventive deworming** *(Where pregnant women have a 20 percent or higher prevalence of infection with hookworm or T. trichiura infection AND a 40 percent or higher prevalence of anemia)*	(WHO 2019)	✓	✓		✓ **MNCH Program**	3
17	**Tetanus toxoid vaccination** *(All countries, all settings)*	(WHO 2016)	✓	✓	National Immunization Policy (NIP)	✓ **Expanded Program on Immunization (EPI)**	3
18	**Nutritional counseling on healthy diet** *(If underweight prevalence among women is more than 20 percent)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program/Primary Health Care (PHC)**	3
19	**Weight monitoring** *(All countries, all settings)*	(WHO 2016)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program /PHC**	3
20	**Advice about weight after weighing** *(All countries, all settings)*	(WHO 2016)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program /PHC**	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
21	**Advice on consuming calcium** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program /PHC**	3
22	**Advice on consuming IFA** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program /PHC**	3
23	**Advice on consuming additional food** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program /PHC**	3
24	**Advice on birth preparedness** *(All countries, all settings)*	(WHO 2015)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
25	**Advice on exclusive breastfeeding** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **MNCH Program**	3
	Delivery and postnatal						
26	**Institutional birth** *(All countries, all settings)*	(EWEC 2016)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
27	**Skilled birth attendant** *(All countries, all settings)*	(EWEC 2016)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
28	**Optimal timing (delayed) of umbilical cord clamping** *(All countries, all settings)*	(WHO 2019)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
29	**Assessment of birth weight** *(All countries, all settings)*	(WHO 2013)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
30	**Support for early breastfeeding and immediate skin-to-skin contact** *(All countries, all settings)*	(WHO 2019)	✓	✓	Pakistan Infant and Young Child Feeding (IYCF) Strategy (2016–2020)	✓ **MNCH Program**	3
31	**Optimal feeding of low-birth-weight infants** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓ **MNCH Program**	3
32	**Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC)** *(All countries, all settings)*	(WHO 2019)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
33	**Postnatal care (PNC) for babies around day three, day seven, and within six weeks after birth** *(All countries, all settings)*	(EWEC 2016)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
34	**PNC for women within three and seven days and within six weeks after delivery** *(All countries, all settings)*	(EWEC 2016)	✓	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3
35	**Breastfeeding counseling** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓ **MNCH Program**	3
36	**IFA supplementation** *(With a 20 percent or higher population prevalence of gestational anemia)*	(WHO 2019)	✓ 51 percent (GNR country profile)	✓	IRMNCAH&N (2016–2020)	✓ **MNCH Program**	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
37	**Food supplementation for malnourished lactating women** *(All countries, all settings)*	(WHO 2018)	✓	✓	IRMNCAH&N (2016–2020)	✓ **Community-Based Management of Acute Malnutrition (CMAM)**	3
	Early childhood						
38	**Breastfeeding counseling** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓ **MNCH Program**	3
39	**Counseling on appropriate complementary feeding** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓ **MNCH Program**	3
40	**Food supplementation for complementary feeding** *(In food-insecure populations)*	Bhutta et al. 2013; eLENA (WHO, n.d.)	✓	✗	NA	✗	NA
41	**Iron-containing MNP** *(In which the prevalence of anemia in children under five years of age is 20 percent or more)*	(WHO 2019)	✓	✓	IRMNCAH&N (2016–2020); PMNS (2018–2025)	✓ **Nutrition Program**	3
42	**Daily IFA supplementation** *(Daily if anemia prevalence among children aged six to 59 months is 40 percent or more; intermittent for children aged 24 to 59 months if anemia prevalence among this group is 20 percent or more)*	(WHO 2019)	✓	✗	NA	✗	NA

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
43	**Zinc supplementation during diarrhea** *(All countries, all settings)*	(WHO 2019)	✓	✓	IRMNCAH&N (2016–2020), PMNS (2018–2025)	✓ **Community Integrated Management of Childhood Illness–Nutrition (IMCI–N)**	3
44	**Oral rehydration salts (ORS) during diarrhea** *(All countries, all settings)*	(WHO 2019)	✓	✓	IRMNCAH&N (2016–2020), PMNS (2018–2025)	✓ **Community IMCI–N**	3
45	**Vitamin A supplementation** *(Where the prevalence of night blindness is one percent or more in children aged 24 to 59 months, or the prevalence of vitamin A deficiency is 20 percent or higher in infants and children aged six to 59 months)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **EPI**	3
46	**Preventive deworming** *(Living in areas where the baseline prevalence of any soil-transmitted infection is 20 percent or higher among children aged 12 months and older)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **EPI**	3
47	**Growth monitoring (weight assessment)** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓ **Nutrition Program**	3
48	**Counseling on nutritional status** *(All countries, all settings)*	(WHO 2019)	✓	✓	IYCF Strategy (2016–2020)	✓	3

S.N	Nutrition actions	References	Nutrition action is applicable	Policy		Program	
				Nutrition action is addressed by policy	Policy document name	Program availability and program name	Geographic coverage (1 = Pilot; 2 = Scale up in select; districts 3 = Nationwide)
						Nutrition Program	
49	**Identification of severe or moderate underweight** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **Nutrition Program**	3
50	**Inpatient management of severe acute malnutrition (SAM)** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **Nutrition Program**	3
51	**Outpatient management of SAM** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **Nutrition Program**	3
52	**Management of moderate acute malnutrition (MAM)** *(All countries, all settings)*	(WHO 2019)	✓	✓	PMNS (2018–2025)	✓ **Nutrition Program**	3
53	**Immunization** *(All countries, all settings)*	(EWEC 2016)	✓	✓	PMNS (2018–2025)	✓ **EPI**	3

NA = Not applicable; [a] = Available under CMAM in selected areas; * = We were not able to find the exact program for this nutrition action

6.2 Appendix 2: Program Implementation/Operational Guidelines for Nutrition Actions

S.N	Nutrition actions	Program Implementation/operational guidelines
	Adolescence	
1	Daily or intermittent iron and folic acid (IFA) supplementation	*Adolescent Nutrition and Supplementation Guidelines for Pakistan* (Pakistan, Ministry of National Health Services and WHO 2019): A weekly IFA supplement should be given for three months, followed by three months of no supplementation; after this, the adolescent should be provided with supplements as part of the target group of all menstruating adolescent girls.
2	Preventive deworming	*Adolescent Nutrition and Supplementation Guidelines for Pakistan* (Pakistan, Ministry of National Health Services and WHO 2019) recommends preventive deworming, using an annual or biannual single dose of albendazole (400 mg) or mebendazole (500 mg).
3	Food supplementation	*Pakistan Adolescent Nutrition Strategy* (Pakistan, Ministry of Health 2007) aims to provide food supplementation to adolescent girls through Lady Health Workers (LHWs), health and nutrition counsellors, primary health care facilities and general physicians, prioritizing food insecure districts and alignment with the health insurance program.
	Preconception	
4	Contraception	*National Maternal, Neonatal and Child Health Program* (Pakistan, Ministry of Health 2007): One of the components of this program is the provision of comprehensive family planning services.
5	Iodine supplementation	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) calls for frontline health workers and health workers at community-level health facilities to promote the use of iodized salt.
	Pregnancy	
6	Antenatal care (ANC) screening by a trained provider	The World Health Organization (WHO) is working on an adaptation of the *Recommendations on Antenatal Care for a Positive Pregnancy Experience* (WHO 2016) for Pakistan; so far, the country is using global guidelines on ANC, postnatal care (PNC), and institutional birth.
7	ANC screening by a trained provider during the first trimester	The WHO is working on an adaptation of the WHO 2016 guidelines for pregnancy for Pakistan; so far, the country is using global guidelines on ANC, PNC, and institutional birth.
8	Four or more ANC visits	The WHO is working on an adaptation of the WHO 2016 guidelines for pregnancy for Pakistan; so far, the country is using global guidelines on ANC, PNC, and institutional birth.
9	Energy and protein dietary supplementation	Food supplementation (Mamta) is made available through the Benazir Income Support Programme (BISP) for pregnant women; supplementation, however, is limited to BISP-enrolled beneficiaries.
10	Daily or intermittent IFA supplementation	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): IFA supplementation is a component of antenatal visits under the Essential Package of Health Services.
11	Calcium supplementation	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) specifies calcium supplementation at doses of 1.5 to 2.0 g of elemental calcium/day.

S.N	Nutrition actions	Program
		Implementation/operational guidelines
12	Preventive deworming	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Worm infestation should be treated only if a heavy infestation is suspected; treatment should be given in second and third trimesters, never in first trimester, and mebendazole is preferred.
13	Tetanus toxoid vaccination	Under Pakistan's *Expanded Program on Immunization (EPI)*, pregnant women receive Tetanus vaccinations.
14	Nutritional counseling on healthy diet	Nutrition counseling is part of ANC visits and is available in all health and nutrition counseling cards.
15	Weight monitoring	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Maternal weight monitoring is a component of antenatal visits under the Essential Package of Health Services.
16	Advice about weight after weighing	Nutrition counseling is part of ANC visits and is available in all health and nutrition counseling cards.
17	Advice on consuming calcium	Nutrition counseling is part of ANC visits and is available in all health and nutrition counseling cards.
18	Advice on consuming IFA	Nutrition counseling is part of ANC visits and is available in all health and nutrition counseling cards.
19	Advice on consuming additional food	Nutrition counseling is part of ANC visits and is available in all health and nutrition counseling cards.
20	Advice on birth preparedness	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Birth preparedness is a component of antenatal visits under the Essential Package of Health Services.
21	Advice on exclusive breastfeeding	*Pakistan Infant and Young Child Feeding Strategy, 2016–2020* (Pakistan, Ministry of National Health Services, Regulation and Coordination 2015): Among other topics, breastfeeding during pregnancy should be discussed with mothers; this includes skin-to-skin contact, early initiation of breastfeeding, colostrum feeding, and advice to avoid prelacteal feeding.
	Delivery and postnatal	
22	Institutional birth	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Basic Health Units (BHUs) provide basic emergency obstetric and newborn care (BEmONC).
23	Skilled birth attendant	*National Maternal, Neonatal and Child Health Program* (Pakistan, Ministry of Health 2007) aims to increase the proportion of births that take place in the presence of skilled attendants, either in facilities or at home.
24	Optimal timing (delayed) of umbilical cord clamping	Essential newborn care guidelines provide details on the optimal timing of umbilical cord clamping.
25	Assessment of birth weight	Essential newborn care guidelines guide the assessment of birth weight.

S.N	Nutrition actions	Program
		Implementation/operational guidelines
26	Support for early breastfeeding and immediate skin-to-skin contact	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Early initiation of breastfeeding is one of the components of newborn care; health workers should observe the successful initiation of breastfeeding after delivery, including attachment at the breast for at least five mins within six hours after the birth.
27	Optimal feeding of low-birth-weight infants	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): One of the components of newborn care is the management of low-birth-weight babies.
28	Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC)	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) advises on the prevention of hypothermia by keeping the baby warm using KMC and the delay of bathing.
29	PNC for babies around day three, day seven, and within six weeks after birth	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) calls for a minimum of five postnatal visits to a healthcare facility; the first should be immediately after the birth, the second on day three (within 48 hours), the third on day seven, the fourth visit should be on day 28, and the fifth visit should be on day 42. At the community level, there should be a minimum of four home visits after the birth; the first should be on the first day (within 24 hours of delivery), the second on day three, the third on day seven; and fourth on day 28.
30	PNC for women within three and seven days and within six weeks after delivery	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) calls for a minimum of five postnatal visits to a healthcare facility; the first should be immediately after the birth, the second on day three (within 48 hours), the third on day seven, the fourth on day 28, and the fifth on day 42. At the community level, a minimum of four home visits should occur after the birth; the first should be on the first day (within 24 hours of delivery), the second on day three, the third on day seven, and the fourth on day 28.
31	Breastfeeding counseling	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): The new mother should be counselled on various topics, including breastfeeding practices, before being transferred to a postnatal area, before being discharged from the healthcare facility, or before the healthcare provider leaves.
32	IFA supplementation	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): As part of nutrition services, new mothers should receive a 30-day supply of iron supplements.
33	Food supplementation for malnourished lactating women	*National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009): Malnourished lactating women should receive take-home food rations.
	Early childhood	
34	Breastfeeding counseling	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Under the Essential Package of Health Services nutrition program, health workers should promote exclusive breastfeeding for up to six months

S.N	Nutrition actions	Program Implementation/operational guidelines
35	Counseling on appropriate complementary feeding	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Under the Essential Package of Health Services nutrition program health workers should encourage mothers to feed infants nutritionally adequate and safe complementary foods starting at six months of age, while continuing breastfeeding up to two years.
36	Iron-containing micronutrient powder (MNP) supplementation	*National Integrated National and Provincial Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition (IRMNCAH&N) strategy 2016-2020 (Pakistan, Ministry of Health 2017)* aims to provide MNP sachet to moderate acute malnutrition and the normal children to address micronutrient malnutrition
37	Zinc supplementation during diarrhea	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Zinc sulphate should be is administered for the treatment of diarrhea.
38	Oral rehydration salts (ORS) during diarrhea	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): ORS should be administered for the treatment of diarrhea.
39	Vitamin A supplementation	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Pakistan is conducting a campaign to provide twice yearly vitamin A supplementation.
40	Preventive deworming	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): Children under five years are being dewormed.
41	Growth monitoring (weight assessment)	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015) conducts growth monitoring.
42	Counseling on nutritional status	*Essential Package of Health Services Country Snapshot: Pakistan* (Wright 2015): infant and young child feeding (IYCF) counseling cards, and information, education and communication (IEC) materials for parents provide details on counseling messages after growth monitoring.
43	Identification of severe or moderate underweight	*National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009): severe acute malnutrition (SAM) infants under six months are identified at the community level LHWs based on visible wasting, edema, and the baby being observed to be too weak or feeble to nurse. *Pakistan Infant and Young Child Feeding Strategy, 2016–2020* (Pakistan, Ministry of National Health Services, Regulation and Coordination 2015) recommends LHWs to use mid-upper arm circumference (MUAC) measurements for the identification of SAM children six to 59 months. If SAM is identified through measurement, it is recommended that LHWs refer cases to a health worker.

S.N	Nutrition actions	Program
		Implementation/operational guidelines
44	Inpatient management of SAM	*National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009) recommends that severely malnourished infants under six months be treated with special care which involves the improvement and re-establishing of breastfeeding where possible, appropriate therapeutic feeding, and nutritional, psychological, and medical care for the mothers/caretakers of infants. Under the National moderate acute malnutrition (MAM) guidelines severely malnourished children six to 59 months with complications are treated at inpatient care; they are given mainly nutritional stabilization and treatment in a facility setting, followed by community-based rehabilitation as soon as they are stable. The children should be followed up every fortnight with growth monitoring, a health check-up, and a three-month supply of suitable RUTF or dietary supplements.
45	Outpatient management of SAM	*National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009) does not include treatment for children under six months. This guidelines specifies that outpatient management of SAM for children six to 59 months should include outpatient therapeutic care. The main treatment includes RUFT and medication, as required. Cases are closely monitored through home visits by community workers.
46	Management of SAM	*National Guidelines for the Management of Acute Malnutrition Among Children Under Five and Pregnant and Lactating Women* (Pakistan, Ministry of Health 2009): Moderately acutely malnourished children six to 59 months with appetite (ability to eat) and without medical complications, who meet the enrolment criteria, are managed under the Supplementary Feeding Program with take-home supplementary rations.
47	Immunization	Under Pakistan's *Expanded Program on Immunization (EPI)*, children receive routine vaccinations.

6.3 Appendix 3: Activities Included in National Strategies to Address the Key Determinants of Nutrition

Key determinants of nutrition	Strategies that recognize	Activities included in national strategies
1. Immediate determinants		
a. Inadequate nutrient intake by children		
Breastfeeding	Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) aims for protection, promotion, and support of optimal breastfeeding, the promotion of facility-based delivery, and lactation management. Action areas of the PMNS include breastfeeding promotion through the Baby Friendly Hospital Initiative, along with the regulation of breastmilk substitutes and other policies to support breastfeeding promotion. It also includes a package of regulations and incentives to support maternity protections in the workplace.
Complementary feeding	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) aims for protection, promotion, and support of optimal complementary feeding practices.
Infectious diseases	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) recognizes infectious diseases as being one of the determinants of stunting and wasting; it calls for action on improved sanitation and hygiene.
b. Inadequate nutrient intake by mothers	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) includes comprehensive antenatal services for pregnant women, including provision of iron and folic acid (IFA), adequate consumption of iodized salt, screening for severe anemia, and health and nutrition counseling.
2. Underlying determinants		
a. Women's status		
Education	PMNS 2018–2025	One of the potential actions under *Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018), through the Ministry of Federal Education, includes increasing women's participation in formal schooling, thereby increasing their level of educational attainment and improving educational outcomes such as literacy.
Right age of marriage/ childbirth	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) recognizes the empowerment of women through delayed age of marriage and the attainment of higher education.

b. Sanitation and hygiene	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) aims to promote good hygiene and sanitation in academic and health curriculums. The plan also aims to advocate for secure political support in setting clear targets for: access to quality and clean water, open defecation–free environments, the installation of toilets, latrines, and other WASH measures. It aims to develop community-level public–private partnership for building water and sanitation projects, particularly in remote areas.
c. Food security	PMNS 2018–2025	One of the main nutrition-sensitive interventions of the *Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) is the boosting of agriculture production, the adoption of crops with improved nutrients, and implementation of drought management and mitigation.
d. Socio-economic conditions	PMNS 2018–2025	*Pakistan Multi-Sectoral Nutrition Strategy (PMNS) 2018–2025* (Ministry of Planning, Development and Reform 2018) has developed an appropriate mix of evidence-based nutrition-focused activities to be included in cash transfer programs; these include nutrition conditionality for assistance, as well as direct food assistance in the form of distribution of food products, food vouchers, or other types of assistance.

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