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

Data DENT
Data for Decisions to Expand Nutrition Transformation

IFPRI
INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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Abbreviations

ANC	Antenatal Care
ARI	Acute Respiratory Infection
BMI	Body Mass Index
CNSI	Comprehensive Nutrition-Specific Intervention
eLENA	E-Library of Evidence for Nutrition Actions
EWEC	Every Woman Every Child
FCHV	Female Community Health Volunteer
GMP	Growth Monitoring Program
GNMF	Global Nutrition Monitoring Framework
H4L	Health for Life
HAZ	Height-For-Age Z-Score
HMIS	Health Management Information System
IFA	Iron and Folic Acid
IMAM	Integrated Management of Acute Malnutrition
IMNCI	Integrated Management of Newborn And Childhood Illness
ITC	Inpatient Therapeutic Care
IYCF	infant and young child feeding
KMC	Kangaroo Mother Care
MAM	moderate acute malnutrition
MCHN	Maternal and Child Health and Nutrition
MIYCN	Maternal, Infant and Young Child Nutrition
MNP	Micronutrient Powder
MoEST	Ministry of Education, Science and Technology
MoHP	Ministry of Health and Population
MSNP	Multi-Sector Nutrition Plan
NCD	Noncommunicable Diseases
NDHS	Nepal Demographic and Health Survey
NHSSP	National Health Sector Support Programme
NNMSS	Nepal National Micronutrient Status Survey
NNPS	National Nutrition Policy and Strategy
NPC	National Planning Commission
NSCAWCN	National Strategy for Control of Anemia among Women and Children in Nepal
NSMP	National Safe Motherhood Plan

ODF	Open Defecation Free
ORS	Oral Rehydration Salts
OTC	Outpatient Therapeutic Care
PHC/ORC	Primary Health Care Outreach Clinic
PNC	Postnatal Care
ROSA	Regional Office for South Asia
SAM	severe acute malnutrition
SDG	Sustainable Development Goals
SMP	School Meal Program
STEPS	Stepwise Approach to Surveillance
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WAZ	Weight-for-Age Z-Score
WHO	World Health Organization
WHZ	Weight-for-Height Z-Score

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 Nepal'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 in order to assess the data availability on nutrition actions, and on the indicators of determinants and outcomes.

Our policy review identified a total of 53 recommended evidence-based nutrition actions, of which 50 nutrition actions were applicable in Nepal. Of these, 45 were addressed in the country's nutrition policies and programs and some of the actions were only available in some districts. Nutrition actions that were not included in current policies and programs included calcium supplementation and advice on consuming calcium during pregnancy, and daily iron and folic acid (IFA) supplementation during childhood. Current policies addressed daily or intermittent IFA supplementation during preconception and food supplementation for malnourished lactating women during the postnatal period; however, there was no program to implement these actions. Nepal's Multi-Sector Nutrition Plan (MSNP) recognized and addressed all key determinants of nutrition; it also expressed an intent to address all SDG nutrition targets for maternal, infant, and young child nutrition. Noncommunicable diseases (NCDs), however, were addressed separately by a multisectoral plan for NCDs.

Our data review found that out of 45 actions that policies and programs addressed, population-based surveys contained data on only 27 actions and administrative data systems contained data on only 25 actions. Population-based surveys and administrative data sources contained no data on: food supplementation during adolescence; weight monitoring and various types of counseling during pregnancy; optimal timing (delayed) of umbilical cord clamping, support for breastfeeding and immediate skin-to-skin contact, optimal feeding of low-birth-weight infants and counseling of mothers of low-birth-weight infants on kangaroo mother care (KMC) during delivery and in the postpartum period; breastfeeding counseling, counseling on appropriate complementary feeding, counseling after growth monitoring, and inpatient management of severe acute malnutrition (SAM) during early childhood. Population-based surveys contained data on most of the indicators of immediate and underlying determinants, while administrative data systems did not have data on all indicators of immediate determinants. Data on all indicators of nutrition outcomes were available from population-based surveys.

In conclusion, Nepal's policy and program landscape for nutrition is robust, however the gaps in data availability for tracking progress on nutrition actions are much larger than the gap in policies and programs for addressing recommended actions. Future population-based surveys and modifications of administrative 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 together with supportive policies and legislation and functioning health, education, and social protection systems, then countries will be able to improve the nutrition and health status of 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 will, in turn, 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 nutrition status and, ultimately, in nutrition outcomes. However, little is known in the South Asia region both 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, the 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 have compiled an overview of nutrition policies, programs, and data information systems for tracking nutrition actions, determinants, and outcomes in all the countries in the South Asia region, including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. This report presents findings for Nepal.

It has two major objectives:

1) To assess the extent to which Nepal'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 relevant nutrition outcomes, and

2) To examine the availability of data to track progress on nutrition actions, determinants, and outcomes in Nepal.

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 so as to be able to better track 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 focuses primarily on the critical period from adolescence to early childhood, but, where relevant, we also include information pertaining to noncommunicable disease (NCD) outcomes that have been 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 guides; and third, to synthesize information on nutrition actions, determinants, and outcomes against the base framework.

2.1.1 Identification of nutrition actions, determinants, and outcomes

Global guidance documents recommend several nutrition actions throughout the life-course: that is, in adolescence and 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 the following:

- "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 from additional targets that were included in the WHO's Global Nutrition Monitoring Framework (GNMF) (WHO 2017). To ensure country specificity, we also included additional nutrition outcomes that are 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 May 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 Nepal included seven nutrition-relevant national policies/plans/strategies and five program documents, as well as program implementation guidelines currently in use (Box 2).

Box 2. List of documents reviewed

Policy/plan/strategy

- *National Nutrition Policy and Strategy* (Nepal, Child Health Division, Department of Health Services, Ministry of Health and Population 2004)
- *National Strategy for the Control of Anemia Among Women and Children in Nepal* (Nepal, Department of Health Services 2002)
- *National Policy on Skilled Birth Attendants* (Nepal, Ministry of Health and Population 2006)
- *Strategy for Infant and Young Child Feeding: Nepal 2014* (Nepal, Ministry of Health and Population 2014)
- *Multi-Sector Nutrition Plan 2018–2022* (Nepal, National Planning Commission [NPC] 2017)
- *National Safe Motherhood Plan 2002–2017* (Nepal, Family Health Division 2002)
- *Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016)

- *Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2014-2020)* (Government of Nepal and WHO Country Office Nepal 2014)

Program document/program implementation guideline

- *Growth Monitoring Guideline* (Nepal, Child Health Division, n.d.)
- *Guidelines for Weekly Iron Folic Acid Supplementation for Adolescent girls* (Nepal, Department of Child Health 2016)
- *Comprehensive Nutrition-Specific Intervention Training Package for Health Workers (CNSI)* (Nepal, Ministry of Health 2019)
- *NEPAL Integrated Management of Acute Malnutrition (IMAM) Guideline* (UNICEF and Nepal, Child Health Division 2017)
- *Essential Package of Health Services Country Snapshot: Nepal* (Wright 2015)

2.1.3 Synthesis of information

Among the nutrition actions that global guidance documents recommend, we first identified those that were applicable in Nepal.[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 Nepal'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 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 those 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 outcomes were targeted in the national plans, we also assessed whether country-specific nutrition outcomes were present as key policy targets.

Two IFPRI researchers 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.

[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.

2.2 Methods: Data Availability

For each of the nutrition actions, determinants, and outcomes in the framework developed above, we assessed both population-based surveys and administrative data sources as to their data availability. In order to assess data availability in population-based household surveys, we reviewed the questionnaires used in the Nepal Demographic and Health Survey (NDHS) 2016 (Nepal, Ministry of Health, New ERA, ICF 2017), the Nepal National Micronutrient Status Survey (NNMSS) 2016 (Nepal, Ministry of Health and Population, New ERA, UNICEF, EU, USAID, CDC 2018) and Nepal STEPS Survey 2019 FactSheet (Nepal Health Research Council and WHO Nepal Country Office, 2019). To assess the availability of data on nutrition actions in administrative data sources, we examined the indicators captured in the Health Management Information System (HMIS) (Ministry of Health and Population [MoHP], National Health Sector Support Programme [NHSSP], Health for Life [H4L] 2013).

3 Findings: Overview of Policies and Programs in Nepal

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 Nepal's policies; and 3) the key nutrition outcomes that are targeted in Nepal'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, 50 are applicable in Nepal (Table 1).[1] Policies addressed 47 of these nutrition actions, and programs addressed 45. Both policy and programs addressed three of three actions aimed during adolescence. Policies addressed three of three actions during preconception, but programs addressed only two of three. Policies and programs addressed 14 of 16 actions during pregnancy. Policies addressed 12 of 12 actions aimed at women during delivery and in the postnatal period and programs addressed 11 of 12. Both policies and programs addressed 15 of 16 actions targeting early children. Appendix 1 provides details on how policies and programs address the recommended nutrition actions and Appendix 2 provides details on program implementation.

Neither policies nor programs addressed calcium supplementation and advice on consuming calcium during pregnancy, or daily IFA supplementation during early childhood. Programs in Nepal did not address daily or intermittent iron and folic acid (IFA) supplementation during preconception or food supplementation for malnourished lactating women during the postnatal period (Table 1).

[1] Actions that are not applicable include vitamin A and micronutrient powder (MNP) supplementation during pregnancy and preventive deworming during preconception.

Table 1. Nutrition actions addressed and not addressed by policies and programs in Nepal, 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
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 • Preventive deworming • Tetanus toxoid vaccination • Nutritional counseling on healthy diet • Weight monitoring • Advice about weight after weighing • Advice on consuming IFA • Advice on consuming additional food • Advice on birth preparedness • Advice on exclusive breastfeeding	• Calcium supplementation • Advice on consuming calcium
Delivery and postnatal period	• Institutional birth • Skilled birth attendant • Assessment of birth weight • Optimal timing (delayed) of umbilical cord clamping • 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 • Food supplementation for 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	• Daily IFA supplementation

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

Note: * = available in 41 of 77 districts; ** = in 41 districts, adolescents up to Class 8 receive a midday meal under a school feeding program; *** = food supplementation is provided to children six to 23 months in only six food-insecure districts; + = available in 41 of 77 districts; ++ = available in 56 of 77 districts; +++ = in six food-insecure districts SAM is treated by providing therapeutic food, and in the remainder of the districts it is treated through counseling.

3.2 Which Key Determinants of Malnutrition Are Targeted in Strategies?

We reviewed Nepal's *Multi-Sector Nutrition Plan (MSNP) 2018–2022*. It recognized and included activities for addressing both immediate determinants of nutrition—inadequate nutrient intake by children (breastfeeding, complementary feeding), infectious diseases, and inadequate intake by mothers—and underlying determinants—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 included in the plan.

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: MSNP 2018–2022 (Nepal, NPC 2017)

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

The MSNP 2018–2022 aimed to address all five of the Sustainable Development Goal (SDG) maternal, infant, and young child nutrition outcome targets, including low birth weight, stunting, wasting, overweight among children under five, and anemia among women of reproductive age (Table 3); among the additional nutritional outcome indicators in the GNMF, the MSNP 2018–2022 aimed to address only underweight among non-pregnant women Three country-specific nutrition targets were included in the MSNP 2018–2022; these include underweight among children under five, anemia among adolescents 11 to 19 years, and anemia among children six to 59 months.

Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2014-2020) had targets to reduce mortality from diabetes, halt in rise of overweight and obesity and reduce prevalence of hypertension (Table 3).

Table 3. Nutrition outcomes on which Nepal'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	✓
Additional country-specific nutrition goals/targets		
Underweight (children zero to 59 months)		✓
Anemia (children six to 59 months)		✓
Anemia (adolescent girls 11 to 19 years)		✓

✓=Addressed; ✗=Not addressed

Source: MSNP 2018–2022 (Nepal, NPC 2017).and and Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2014-2020) (Government of Nepal and WHO Country Office Nepal 2014

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

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

4.1 Availability of Data on Program and Policy Actions

Multiple data sources exist in Nepal. The Nepal Demographic and Health Survey (NDHS) 2016, the Nepal National Micronutrient Status Survey (NNMSS) 2016 and Nepal STEPS Survey 2019 are the primary nationally representative population-based surveys, and the Health Management Information System (HMIS) is the primary administrative data source.

Of 45 nutrition actions that policies and programs addressed in Nepal, our review of population-based surveys revealed that the surveys provided data to assess coverage of only 27 actions. These included two each targeting adolescence and preconception, eight focused on pregnant women, seven aimed at women during delivery and the postnatal period, and eight for early childhood (Table 4). The HMIS contained data on 25 actions; these included one each for adolescence and preconception; six each for pregnant women, women during delivery, and the postnatal period; and 11 for early childhood.

Neither the population-based surveys nor HMIS had data on food supplementation during adolescence (Table 4). Neither the surveys nor HMIS contained much data on energy and protein dietary supplementation, weight monitoring, or on the various types of counseling. In neither the population-based surveys nor HMIS was there any data on nutrition actions during delivery and in the postnatal period, optimal timing (delayed) of umbilical cord clamping, support for breastfeeding and immediate skin-to-skin contact, or indicators related to the care of low-birth-weight newborns; HMIS also did not have data on breastfeeding counseling. Neither population-based surveys nor HMIS had data on indicators during early childhood, including those related to counseling on infant and young child feeding (IYCF), counseling after growth monitoring, or inpatient management of severe acute malnutrition (SAM).

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

Nutrition actions	Data availability		
	Population-based surveys		Administrative data sources
	NDHS 2016	NNMSS 2016	HMIS
Adolescence			
Daily or intermittent iron and folic acid (IFA) supplementation	✗	✓	✓
Preventive deworming	✗	✓	✗
Food supplementation	✗	✗	✗
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	✓	✓	✓
Preventive deworming	✓	✓	✓
Tetanus toxoid vaccination	✓	✗	✓
Nutritional counseling on healthy diet	✗	✗	✗
Weight monitoring	✗	✗	✗
Advice about weight after weighing	✗	✗	✗
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	✗	✗	✗

Nutrition actions	Data availability		
	Population-based surveys		Administrative data sources
	NDHS 2016	NNMSS 2016	HMIS
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	✗	✓	✓
Children (zero to 59 months)			
Breastfeeding counseling	✗	✗	✗
Counseling on appropriate complementary feeding	✗	✗	✗
Food supplementation for 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 NDHS 2016 (Nepal, Ministry of Health, New ERA, ICF 2017), NNMSS 2016 (Nepal, Ministry of Health and Population, New ERA, UNICEF, EU, USAID, CDC 2018) and review of HMIS Indicators, 2070 (MoHP, NHSSP, H4L 2013)

Note: NDHS = Nepal Demographic and Health Survey 2016; NNMSS = Nepal National Micronutrient Status Survey 2016; HMIS = Health Management Information System

4.2 Availability of Data on Key Determinants

Both population-based surveys and HMIS contained data on breastfeeding within an hour of delivery and on exclusive breastfeeding up to six months (Table 5); only population-based surveys, however, had data on breastfeeding up to 24 months. In terms of complementary feeding, both population-based surveys and HMIS had data on the introduction of solid, semi-solid, and soft foods, but only population-based surveys had data on other indicators related to complementary feeding. Only the NNMSS 2016 contained data on minimum dietary diversity among pregnant women. Data on diarrhea and ARI was available from both population-based surveys and HMIS.

Data on completion of high school among women was available from both surveys, while age of marriage and age of childbirth was only available from NDHS 2016 (Table 5). Among five indicators related to hygiene and sanitation, NDHS 2016 had data on all indicators; NNMSS 2016, on the other hand, had data only on toilet facility, access to safe water, and a designated place for handwashing. Data on food insecurity was available from both surveys.

HMIS lacked data on indicators related to breastfeeding and complementary feeding (Table 5). The only indicators for which there was no data in either of the population-based surveys was coverage under social protection schemes (Table 5).

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

Determinants	Potential indicators	Data availability		
		NDHS 2016	NNMSS 2016	HMIS
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	✓	✗	✗
	Percentage of women aged 20 to 24 years who had given birth to a child before their twentieth birthday	✓	✗	✗

Determinants	Potential indicators	Data availability		
		NDHS 2016	NNMSS 2016	HMIS
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 NDHS 2016 (Nepal, Ministry of Health, New ERA, ICF 2017), NNMSS 2016 (Nepal, Ministry of Health and Population, New ERA, UNICEF, EU, USAID, CDC 2018) and review of HMIS Indicators, 2070 (MoHP, NHSSP, H4L 2013)

Note: NDHS = Nepal Demographic and Health Survey 2016; NNMSS = Nepal National Micronutrient Status Survey 2016; HMIS = Health Management Information System

4.3 Availability of Data on Nutrition Outcomes

Data on all nutrition outcomes targeted by Nepal's policies and programs was available from the population-based surveys (Table 6). Of the NCD-related indicators, data on diabetes among adults was available in STEP survey 2019. Data on low birth weight was not available from the NNMSS 2016 and data on overweight among adolescence was not available from the NDHS 2016. HMIS contained data on only two indicators, low birth weight among infants and underweight among children zero to 59 months.

Table 6. Data availability on nutrition outcomes

	Outcome indicators	Data availability			
		NDHS 2016	NNMSS 2016	STEP 2019	HMIS
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 one)	✗	✓	-	✗
	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])	✗	✗	✓	✗
Country specific	Underweight (percentage of children zero to 59 months who were below -2 WAZ)	✓	✓	-	✓
	Anemia (percentage of children six to 59 months who were anemic)	✓	✓	-	✗
	Anemia (percentage of adolescent girls 11 to 19 years who were anemic)	✗	✓	-	✗

✓=Available; ✗=Not available

Source: Review of questionnaires used in NDHS 2016 (Nepal, Ministry of Health, New ERA, ICF 2017), NNMSS 2016 (Nepal, Ministry of Health and Population, New ERA, UNICEF, EU, USAID, CDC 2018), and review of HMIS Indicators, 2070 (MoHP, NHSSP, H4L 2013)

Note: NDHS = Nepal Demographic and Health Survey 2016; NNMSS = Nepal National Micronutrient Status Survey 2016; HMIS = Health Management Information System; GNFM = Global Nutrition Monitoring Framework; SDG = Sustainable Development Goal; HAZ = height-for-age z-score; 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

Nepal has a robust nutrition policy framework and various programs that are intended to deliver nutrition actions throughout the life-course. Findings show that policies and programs address 45 of the 50 recommended nutrition actions that are applicable to Nepal, though some of the actions are available only in some districts. Neither Nepal's nutrition policies nor its programs currently address calcium supplementation and advice on consuming calcium during pregnancy, or daily IFA supplementation during childhood. Programs do not currently address daily or intermittent IFA supplementation during preconception or food supplementation for malnourished lactating women during the postnatal period. It is promising, however, that the multisectoral nutrition plan for the country recognizes and addresses all key determinants of nutrition and aims to tackle a range of globally accepted nutrition goals, Nepal's policies also include country-specific goals related to child underweight and anemia and adolescent anemia.

5.2 Data Gaps

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

- School platforms are used to distribute IFA and deworming to adolescent girls in Nepal; the opportunity to acquire this data from the education sector should be explored.
- The data gap in nutrition actions during pregnancy is mostly around indicators related to counseling, a gap which the upcoming Demographic and Health Survey (DHS) using the DHS-8 questionnaire should fill. Future rounds of population-based surveys, however, should be designed to fill the data gaps around delivery as well.
- Data gaps are prominent for interventions targeting children, including on new-born and postnatal care (PNC) and on nutrition actions during early childhood; these need to be closed.
- The HMIS has no indicator on counseling throughout the life-course; this data system needs to be revised to include data on indicators around counseling during pregnancy, in the postpartum period, and on the care of young children.

5.3 Recommendations

This report is intended to spark discussions among the nutrition policy community in Nepal 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 to close in the context of the current burden of malnutrition in Nepal; 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 than 40 percent among non-pregnant women)*	(WHO 2019)	✓ 41 percent among women of reproductive age (WRA)	✓	National Nutrition Policy and Strategy (NNPS) 2004; Multi-Sector Nutrition Plan (MSNP) 2018–2022	✓ **Adolescent Girls IFA Supplementation Program**	2
2	**Preventive deworming** *(If prevalence of any soil-transmitted helminth infection is 20 percent or higher among adolescents 11 to 19 years)*	(WHO 2018)	✓	✓	MSNP 2018–2022	✓ **Adolescent Girls IFA Supplementation Program**	2
3	**Food supplementation** *(All countries, all settings)*	*e-Library of Evidence for Nutrition Actions* (eLENA) (WHO, n.d.)	✓	✓	MSNP 2018–2022	✓ **School Feeding Program**	2

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)	✓ 41 percent among WRA	✓	National Strategy for the Control of Anemia Among Women and Children in Nepal (NSCAWCN) (Nepal, Department of Health Services 2002)	✗	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)	✓	✓	MSNP 2018–2022	✓ **Reproductive and Maternal Health 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)	✓	✓	Iodized Salt (Production, Sale and Distribution) Act, 2055 (1998) (Nepal Law Commission 1999)	✓	3
	Pregnancy						
8	**Antenatal care (ANC) screening by a trained provider** *(All countries, all settings)*	(WHO 2004, 2016)	✓	✓	NNPS 2004; National Safe Motherhood Plan (NSMP) 2002–2017; MSNP 2018–2022	✓ **Safe Motherhood 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)
9	**ANC screening by a trained provider during the first trimester** *(All countries, all settings)*	(WHO 2004, 2016)	✓	✓	NNPS 2004; NSMP 2002–2017; MSNP 2018–2022,	✓ **Safe Motherhood Program**	3
10	**Four or more ANC visits** *(All countries, all settings)*	(WHO 2004, 2016)	✓	✓	NNPS 2004; NSMP 2002–2017; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
11	**Energy and protein dietary supplementation** *(If underweight prevalence among women is more than 20 percent)*	(WHO 2019)	✓ [1] 17 percent (NDHS 2017)	✓	NNPS 2004	✓ **Mother Child Health and Nutrition Program**	2
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)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **IFA Distribution Program**	3
13	**Vitamin A supplementation** (Where five percent or more of women have a history of night blindness during pregnancy in the past three to five years, or if 20 percent or more of pregnant women have vitamin A deficiency)	(WHO 2019)	✗ 3 percent (NNMSS2016)	✓	NNPS 2004	✗	NA

[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)
14	**Calcium supplementation** (Where dietary calcium intake is low)	(WHO 2019)	✓	✗	NA	✗	NA
15	**Iron-containing MNP supplementation** (Settings with a high prevalence of nutritional deficiencies)	(WHO 2019)	✗	✗	NNPS 2004	✗	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)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Worm Control Program**	3
17	**Tetanus toxoid vaccination** *(All countries, all settings)*	(WHO 2016)	✓	✓	NSMP 2002–2017	✓ **Safe Motherhood program**	3
18	**Nutritional counseling on healthy diet** *(If underweight prevalence among women is more than 20 percent)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
19	**Weight monitoring** *(All countries, all settings)*	(WHO 2016)	✓	✓	NNPS 2004	✓ **Safe Motherhood Program**	3
20	**Advice about weight after weighing** *(All countries, all settings)*	(WHO 2016)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
21	**Advice on consuming calcium** *(All countries, all settings)*	(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)
22	**Advice on consuming IFA** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
23	**Advice on consuming additional food** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
24	**Advice on birth preparedness** *(All countries, all settings)*	(WHO 2015)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
25	**Advice on exclusive breastfeeding** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
	Delivery and postnatal						
26	**Institutional birth** *(All countries, all settings)*	(EWEC 2016)	✓	✓	NSMP 2002–2017	✓ **Safe Motherhood Program**	3
27	**Skilled birth attendant** *(All countries, all settings)*	(EWEC 2016)	✓	✓	National Policy on Skilled Birth Attendants (SBA) (Nepal, Ministry of Health and Population 2006)	✓ **Safe Motherhood 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)
28	**Optimal timing (delayed) of umbilical cord clamping** *(All countries, all settings)*	(WHO 2019)	✓	✓		✓ **Community-Based Integrated Management of Neonatal and Childhood Illnesses (CB–IMNCI)**	3
29	**Assessment of birth weight** *(All countries, all settings)*	(WHO 2013)	✓	✓	MSNP 2018–2022	✓ **CB–IMNCI**	3
30	**Support for early breastfeeding and immediate skin-to-skin contact** *(All countries, all settings)*	(WHO 2019)	✓	✓	MSNP 2018–2022	✓ **CB–IMNCI**	3
31	**Optimal feeding of low-birth-weight infants** *(All countries, all settings)*	(WHO 2019)	✓	✓	MSNP 2018–2022	✓ **CB–IMNCI**	3
32	**Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC)** *(All countries, all settings)*	(WHO 2019)	✓	✓	MSNP 2018–2022	✓ **CB–IMNCI**	3
33	**Postnatal care for babies around day three, day seven, and within six weeks after birth** *(All countries, all settings)*	(EWEC 2016)	✓	✓	NSMP 2002–2017; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
34	**Postnatal care for women within three and seven days and within six weeks after delivery** *(All countries, all settings)*	(EWEC 2016)	✓	✓	NSMP 2002–2017; MSNP 2018–2022	✓ **Safe Motherhood 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)
35	**Breastfeeding counseling** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Safe Motherhood Program**	3
36	**IFA supplementation** *(With a 20 percent or higher population prevalence of gestational anemia)*	(WHO 2019)	✓ 27 percent (NNMSS 2016)	✓	NNPS 2004; MSNP 2018–2022	✓ **IFA Distribution Program**	3
37	**Food supplementation for malnourished lactating women** *(All countries, all settings)*	(WHO 2018)	✓	✓	NNPS 2004	✗	3
	Early childhood						
38	**Breastfeeding counseling** *(All countries, all settings)*	(WHO 2019)	✓	✓	Strategy for Infant and Young Child Feeding: Nepal 2014; MSNP 2018–2022	✓ **Maternal, Infant and Young Child Nutrition (MIYCN) program**	3
39	**Counseling on appropriate complementary feeding** *(All countries, all settings)*	(WHO 2019)	✓	✓	Strategy for Infant and Young Child Feeding: Nepal 2014; MSNP 2018–2022	✓ **MIYCN program**	3
40	**Food supplementation for complementary feeding** *(In food-insecure populations)*	Bhutta et al. 2013; eLENA (WHO, n.d.)	✓	✓		✓ **Mother Child Health and Nutrition Program**	2

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)
41	**Iron-containing micronutrient powder (MNP)** *(Where the prevalence of anemia in children under five years of age is 20 percent or more)*	(WHO 2019)	✓ 53percent (NDHS 2016)	✓	MSNP 2018–2022	✓ **MNP Promotion Program**	2
42	**Daily IFA supplementation** *(Daily if anemia prevalence among children aged 6 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)	✓ 53 percent (NDHS 2016)	✗	NA	✗	NA
43	**Zinc supplementation during diarrhea** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **CB–IMNCI**	3
44	**Oral rehydration salts (ORS) during diarrhea** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **CB–IMNCI**	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 6 to 59 months)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Vitamin A Deficiency Control Program**	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)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Worm Control 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)
47	**Growth monitoring (weight assessment)** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **Growth Monitoring Program (GMP)**	3
48	**Counseling on nutritional status** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **GMP**	3
49	**Identification of severe or moderate underweight** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **IMAM program**	2
50	**Inpatient management of severe acute malnutrition (SAM)** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **IMAM program**	2
51	**Outpatient management of SAM** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **IMAM program**	2
52	**Management of moderate acute malnutrition (MAM)** *(All countries, all settings)*	(WHO 2019)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **IMAM program**	2
53	**Immunization** *(All countries, all settings)*	(EWEC 2016)	✓	✓	NNPS 2004; MSNP 2018–2022	✓ **National Immunization Program**	3

NA = Not applicable

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	*Guidelines for Weekly Iron Folic Acid Supplementation for Adolescent Girls* (Nepal, Department of Child Health 2016) states that all girls 11 to 19 years should receive 60 mg of iron and 400 mg of folic acid for a total of 26 weeks per year, with a gap of 13 weeks between the two distributions.
2	Preventive deworming	*Guidelines for Weekly Iron Folic Acid Supplementation for Adolescent Girls* (Nepal, Department of Child Health 2016) states that all girls 11 to 19 years should receive deworming tablets twice a year.
3	Food supplementation	National School Meal Program (SMP) for school targets students of pre-primary to grade eight levels. SMP is the largest nutrition programme in the country implemented by Ministry of Education, Science and Technology (MoEST). Currently, 41 out of 77 districts of Nepal have SMP.
	Preconception	
4	Contraception	*Nepal Health Sector Strategy 2015–2020* (FAO 2015) specifies that all women of reproductive age should receive various family planning services free of cost through government health facilities, including the oral contraceptive pill (OCP), Depo-Provera, condoms, emergency contraception, vasectomy, or minilaparotomy (minilap).
5	Iodine supplementation	*Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) instructs health workers to disseminate information on the use of iodized salt and particularly suggests the use of 'two-child logo' salt because of its optimal iodine content.
	Pregnancy	
6	Antenatal care (ANC) screening by a trained provider	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that ANC checkups in all public and some private facilities are to be provided free of charge to all citizens.
7	ANC screening by a trained provider during the first trimester	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that ANC checkups in all public and some private facilities are to be provided free of charge to all citizens.
8	Four or more ANC visits	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that ANC checkups in all public and some private facilities are to be provided free of charge to all citizens.
9	Energy and protein dietary supplementation	*Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) states that pregnant women should receive 3 kg of supplementary food every month; the food supplementation intervention is expected to improve the access of pregnant women to increased caloric, protein, and micronutrient intake.

S.N	Nutrition actions	Program Implementation/operational guidelines
		Nepal Integrated Management of Acute Malnutrition (IMAM) Guideline (UNICEF and Nepal, Child Health Division 2017) specifies that pregnant women and lactating mothers of severe acute malnutrition (SAM) infants younger than six months should receive their own dry ration of 200 g of fortified blended food per day in order to improve their nutritional status.
10	Daily or intermittent IFA supplementation	*National Strategy for the Control of Anemia Among Women and Children in Nepal (NSCAWCN)* (Nepal, Department of Health Services 2002) states that all pregnant women after the completion of their first trimester should receive IFA (60 mg of iron and 400 mg of folic acid) from a health facility or through a Female Community Health Volunteer (FCHV) for the remaining six months of their pregnancy.
11	Preventive deworming	Pregnant women should receive deworming tablets (albendazole) after the completion of their first trimester.
12	Tetanus toxoid vaccination	*Essential Package of Health Services Country Snapshot: Nepal* (Wright 2015) states that a tetanus injection is one of the components of ANC under the essential package of health services
13	Nutritional counseling on healthy diet	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) suggests disseminating information about various types of counseling.
14	Weight monitoring	The program guideline of the *Ama Surakshya* program, part of the *National Safe Motherhood Plan (NSMP) 2002–2017* (Nepal, Family Health Division 2002), requires the provision of weight monitoring in ANC clinics.
15	Advice about weight after weighing	The *Ama Surakshya* program requires the provision of advice from the ANC clinic about weight after weighing.
16	Advice on consuming IFA	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) suggests disseminating information regarding the importance of consuming IFA during pregnancy.
17	Advice on consuming additional food	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) suggests disseminating information regarding nutritious diet and additional food during pregnancy.
18	Advice on birth preparedness	*National Safe Motherhood Plan* (NSMP) *2002–2017* (Nepal, Family Health Division 2002) aims to promote birth preparedness and complication readiness, including awareness raising and improving the availability of funds, transport, and blood supplies.
19	Advice on exclusive breastfeeding	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) suggests that during ANC visits information should be disseminated regarding early initiation of breastfeeding and exclusive breastfeeding until six months of age.
	Delivery and postnatal	
20	Institutional birth	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that institutional deliveries, including Basic Emergency Obstetric and Newborn Care (BEmONC) and Comprehensive Emergency Obstetric and Newborn Care (CEmONC) in all public and some private facilities, are to be provided free of charge to all citizens, and that targeted populations are also to be afforded free and subsidized specialist care.

S.N	Nutrition actions	Program
		Implementation/operational guidelines
21	Skilled birth attendant	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health, 2016) states that institutional deliveries, including BEmONC and CEmONC in all public and some private facilities, are to be provided free of charge to all citizens, and that targeted populations are also to be afforded free and subsidized specialist care.
22	Optimal timing (delayed) of umbilical cord clamping	Essential newborn care guidelines provide guidance on timing of cord clamping.
23	Assessment of birth weight	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that under the Community-Based Integrated Management of Newborn and Childhood Illness (CB–IMNCI) program, health workers at health facilities with birthing centers are responsible for weighing the newborn.
24	Support for early breastfeeding and immediate skin-to-skin contact	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that health workers at health facilities with birthing centers are responsible for supporting the early initiation of breastfeeding and ensuring immediate skin-to-skin contact.
25	Optimal feeding of low-birth-weight infants	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) makes provision for extra support for feeding small and preterm babies.
26	Counseling of mothers of low-birth-weight infants on Kangaroo Mother Care (KMC)	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that KMC units are to be made available from primary healthcare centers and that the healthcare center is to provide support for immediate skin-to-skin contact and for on-demand breastfeeding of babies weighing 1000 to 1800 grams.
27	Postnatal care (PNC) for babies around day three, day seven, and within six weeks after birth	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that PNC check-ups in all public and some private facilities are to be provided free of charge to all citizens.
28	PNC for women within three and seven days and within six weeks after delivery	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that PNC check-ups in all public and some private facilities are to be provided free of charge to all citizens.
29	Breastfeeding counseling	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) calls for the dissemination of information to postpartum women regarding the various aspects of breastfeeding, including positioning and frequency.
30	IFA supplementation	*National Strategy for the Control of Anemia Among Women and Children in Nepal (NSCAWCN)* (Nepal, Department of Health Services 2002) states that all women should receive IFA (60 mg of iron and 400 mg of folic acid) for 45 days after delivery.

S.N	Nutrition actions	Program Implementation/operational guidelines
	Early childhood	
31	Breastfeeding counseling	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) calls for the dissemination of information regarding exclusive breastfeeding until the infant is six months old and continued breastfeeding up to at least two years.
32	Counseling on appropriate complementary feeding	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) calls for the dissemination of information regarding complementary feeding which includes the timing of the introduction of complementary food, frequency and quantity of feeding, and general information about nutritious foods.
33	Food supplementation for complementary feeding	Under the Maternal and Child Health and Nutrition (MCHN) program, children under five years should receive food supplementation in six districts.
34	Micronutrient powder (MNP) supplementation	*Manual for Comprehensive Nutrition-Specific Intervention (CNSI) Training Package for Health Workers* (Nepal, Ministry of Health 2019) specifies that children six to 23 months should receive Baal Vita, which is a mixture of 15 different types of vitamins and minerals as well as iron.
35	Zinc supplementation during diarrhea	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that frontline workers, including FCHVs, should provide zinc with ORS for the treatment of diarrhea.
36	Oral rehydration salts (ORS) during diarrhea	*Nepal's Every Newborn Action Plan* (Nepal, Ministry of Health 2016) states that "frontline workers", FCHVs should provide zinc with ORS for the treatment of diarrhea.
37	Vitamin A supplementation	Under the vitamin A deficiency control program, children six to 59 months should be given a vitamin A capsule every six months.
38	Preventive deworming	Under the deworming program, children of 12 to 59 months should, along with vitamin A, receive deworming tablets every six months.
39	Growth monitoring (weight assessment)	*Growth Monitoring Guideline* (Nepal, Child Health Division, n.d.): Growth monitoring is conducted through various community-based services such as healthcare centers and outreach clinics and during immunization programs. According to this guideline, children under five years are expected to be weighed every three months.
40	Counseling on nutritional status	*Growth Monitoring Guideline* (Nepal, Child Health Division, n.d.) states that mothers should receive counseling after weight measurement.
41	Identification of severe or moderate underweight	*Nepal Integrated Management of Acute Malnutrition (IMAM) Guideline* (UNICEF and Nepal, Child Health Division 2017) identifies SAM cases through an active-adaptive case-finding method.

S.N	Nutrition actions	Program
		Implementation/operational guidelines
42	Inpatient management of SAM	*Nepal Integrated Management of Acute Malnutrition (IMAM) Guideline* (UNICEF and Nepal, Child Health Division 2017) states that, on the basis of assessment, infants under six months are to be referred for inpatient care; in districts not covered under IMAM, inpatient management of SAM is undertaken in Nutritional Rehabilitation Homes; inpatient management of SAM (children six to 59 months) includes Inpatient Therapeutic Care (ITC) or, in some cases, a stay in a Nutritional Rehabilitation Home. The guideline for the IMAM program provides details of treatment. In districts not covered under IMAM, inpatient management of SAM is undertaken in Nutritional Rehabilitation Homes.
43	Outpatient management of SAM	*Nepal Integrated Management of Acute Malnutrition (IMAM) Guideline* (UNICEF and Nepal, Child Health Division 2017) states that, on the basis of assessment, caregivers of children under six months will receive IYCF counseling at the community level on an outpatient basis (along with any medical support required and supplementary feeding for the mother, if available); outpatient management of SAM for children six to 59 months includes Outpatient Therapeutic Care (OTC) with simple routine medicines and ready-too-use therapeutic food (RUTF).
44	Management of moderate acute malnutrition (MAM)	*Nepal Integrated Management of Acute Malnutrition (IMAM) Guideline* (UNICEF and Nepal, Child Health Division 2017) states that children with MAM are to be managed by providing mothers with MNP, supplementary foods including *Sarbottham Pitho, Poshilo Pitho*, and *Poshilo Jaulo* preparations, and routine medicines; they are to receive counseling on IYCF, homemade nutritious food, and maternal nutrition. Food is provided only in six food-insecure districts, while in the remaining districts MAM is managed through counseling.
45	Immunization	Under the National Immunization Program, children under five years receive vaccinations against tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, polio, pneumococcal diseases, and Japanese encephalitis.

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	Multi-Sector Nutrition Plan (MSNP) 2018–2022	*National Infant and Young Child Feeding (IYCF) Strategy* (Nepal, Ministry of Health and Population 2014) aims to improve behavior with regard to breastfeeding and IYCF practices. The strategy identifies various actors (government, development partners, I/NGOs) and their roles and responsibilities in order to fulfil its objective.
Complementary feeding	MSNP 2018–2022	*National Infant and Young Child Feeding (IYCF) Strategy* (Nepal, Ministry of Health and Population 2014) aims to improve behavior around breastfeeding and IYCF practices. The strategy identifies various actors (government, development partners, I/NGOs) and their roles and responsibilities in order to fulfil its objective; the MSNP 2018–2022 aims to conduct food preparation and cooking demonstrations on the preparation of local nutritious foods; MSNP 2018–2022 also aims to conduct Maternal, Infant, and Young Child Nutrition (MIYCN) counseling at various contact points including during antenatal care (ANC) and postnatal care (PNC) visits, in the course of growth monitoring, Primary Health Care/Outreach Clinic (PHC/ORC), Integrated Management of Newborn and Childhood Illness (IMNCI), and outpatient department (OPD) services.
Infectious diseases	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to increase coverage of disease prevention and management.
b. Inadequate nutrient intake by mothers	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to conduct MIYCN counseling at various contact points including during ANC and PNC visits, in the course of growth monitoring, PHC/ORC, IMNCI, and OPD services.
2. Underlying determinants		
a. Women's status		
Education	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to: a. Run campaigns for girls' education in order to increase their enrolment in schools in targeted areas. b. Prioritize the minimum enabling conditions (classroom; teacher; textbooks; Water, Sanitation and Hygiene (WASH) infrastructure; and book corners) in schools. c. Construct separate toilets for boys and girls in schools, with group handwash facilities especially for girls. d. Provide safe drinking water in schools.

Key determinants of nutrition	Strategies that recognize	Activities included in national strategies
Right age of marriage/ childbirth	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to: a. Run campaigns to prevent marriage before the age of 20. b. Provide information on the importance of delaying the first pregnancy after marriage.
b. Sanitation and hygiene	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to: a. Ensure supply of safe drinking water at the household and institutional level by constructing and repairing water supply schemes in communities, promoting alternative and innovative technologies for water supply, and promoting water treatment schemes. b. Sensitize communities to the need for construction, maintenance, and hygienic use of improved household toilets, including the safe disposal of child faeces. c. Support and strengthen WASH coordination committees and support local governments in the acceleration of open defecation free (ODF) campaigns. d. Support the construction and management of Child, Gender, and Differently Abled (CGD)–friendly toilet facilities including menstrual hygiene management facilities at institutions. e. Construct, establish, and promote user-friendly hand washing facilities in households and institutions. f. Raise awareness on handwashing at critical times to communities, schools, children, and health workers. g. Raise awareness on menstrual hygiene management in communities and schools. h. Raise awareness about, and promote, safe food hygiene at the community level.
c. Food security	MSNP 2018–2022	National Nutrition and Food Security Coordination Committee was formed in 2011 under the National Planning Commission (NPC); it helps the NPC manage nutrition- and food-security-related issues. The MSNP allocates its grants at the local level (rural and urban municipalities) based on their relative food security status.
d. Socio-economic conditions	MSNP 2018–2022	*Multi-Sector Nutrition Plan (MSNP) 2018–2022* (NPC, 2018) aims to include nutrition as a major objective of the social protection program.

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