Mainstreaming Nutrition

into Health and Family Planning Services in Bangladesh

GUIDE TO

Nutrition Specific Interventions

NATIONAL NUTRITION SERVICES
MINISTRY OF HEALTH AND FAMILY WELFARE

Cover Photo: Cover Photo: Laizu Begum, 20, holds her old son Mustafa, 23 months old, in her arms at Charfasson, Bhola on 26 March 2013. Mustafa was given Multiple Micronutrient Powder (MNP) to improve the nutrition content of his diet.

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Intervention 1

Early initiation of breastfeeding within first hour after birth

'Baby's first vaccine'

Why is it important?

- **Saves lives and can prevent one in five newborn deaths.** Early initiation ensures that a newborn receives colostrum, the "first milk." Colostrum is often considered the baby's first 'vaccine' because of its high levels of vitamin A, antibodies, and other protective factors. Colostrum is clean, pure and protects against infection. Early and frequent breastfeeding, especially if accompanied by maternal-infant skin-to-skin contact, stabilizes the baby's temperature, respiratory rate, and blood sugar level. Delayed initiation of breastfeeding increases risk for mortality.
- **Helps establish breastfeeding.** Early suckling is associated with successful establishment and maintenance of breastfeeding throughout infancy.
- **Fosters bonding between mother and child**
- **Takes advantage of the newborn's intense suckling reflex and alert state**
- **Reduces risk of mother's postpartum hemorrhage**

What can health service providers do?

- Provide Infant and Young Child Feeding (IYCF) counseling and lactation support during all contact points with pregnant and lactating women, including during ANC, PNC, EPI outreach, IMCI, NVAC, routine consultations, community sessions and household visits.
- Counsel women and family members (husbands, mother-in-laws) on the importance of early initiation of breastfeeding, benifits of colostrum and the risks of not initiating breastfeeding within first hour of birth.
- Identify practices, beliefs, concerns, and constraints to early initiation of breastfeeding and address them through appropriate, consistent messages and behaviour change communication.

- Ensure that maternity facilities have polices and staff who encourage mothers and infants to stay in the same room and initiate breastfeeding within first hour after birth.
- Protect, promote and maintain a baby friendly environment, by practicing the "Ten Steps to Successful Breastfeeding" in maternity services (Baby Friendly Hospital Initiative).
- Praise the mother for giving colostrum, provide ongoing encouragement, and assist with positioning and attachment to the breast.
- Support mothers who give birth at home in breastfeeding.
- Ensure up-to-date knowledge and training on IYCF counseling.

Essential supplies and job aids:

- Information, Education and Communication materials on IYCF - including counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Growth Monitoring Promotion (GMP) card as a communication and counseling tool for mothers to engage in appropriate IYCF practices.
- Training guide on IYCF counseling.
- Monitoring and reporting tools to assess IYCF practice of mothers.

Key indicator to monitor:

% of children 0-23 months who were breastfed within the first hour of birth.

References:

National strategy for IYCF Bangladesh 2007.

Global strategy for infant and young child feeding, WHO/UNICEF, 2003.

Alive and Thrive: www.aliveandthrive.org.

Intervention 2

Exclusive breastfeeding from birth up to 6 months

'Baby's best food'

Exclusive breastfeeding means that an infant receives only breastmilk with no additional foods or liquids, not even water from birth till 6 months of age. The benefits of exclusive breastfeeding on child survival, growth, and development are well documented. Exclusive breastfeeding also provides health benefits for mothers.

Why is it important?

- **Saves lives**. Suboptimal breastfeeding results in an increased risk for mortality in the first 2 years of life. Non-exclusive breastfeeding during the first 6 months of life results in 1. 4 million deaths and 10% of disease burden in children younger than 5 years.
- **Protects against illness**. Breastmilk contains anti-bacterial and anti-viral agents, anti bodies and high levels of vitamin A that protect infants against disease.
- **Promotes recovery of the sick child**. Breastfeeding provides a nutritious, easily digestible food when a sick child over 6 months of age loses his or her appetite for other foods. Continued breastfeeding during diarrhoea reduces dehydration and the severity and duration of diarrhoea.
- **Provides total food security**. Breastmilk is free and is a hygienic source of food with the right amount of energy, protein, fat, vitamins, and other nutrients for infants during the first six months of their life.
- **Meets all water requirements**. Studies show that, exclusively breastfed infants under 6 months old do not need additional fluids, even in countries with extremely high temperatures and low humidity, breastmilk is enough for their needs. Offering water before 6 months of age reduces breastmilk intake and increases the risk of illness from contaminated water.
- **Optimizes a child's physical and mental growth and development**. Infants fed breastmilk show higher developmental scores as toddlers and higher IQs as children than those who are not fed breastmilk. Breastmilk supplies key nutrients that are critical for health, growth, and development.
- **Benefits maternal health**. Reduces the mother's risk of fatal postpartum hemorrhage and premenopausal breast and ovarian cancer. Frequent and exclusive breastfeeding contributes to a delay in the return of fertility and helps with birth spacing.
- **Bonds mother and child**. Breastfeeding provides frequent interaction between mother and infant, fostering emotional bonds, a sense of security, and stimulus to the baby's developing brain.

What can health service providers do?

- **Provide timely and accurate information**. Provide Infant and Young Child Feeding (IYCF) counseling and growth monitoring promotion (GMP) during all contact points with pregnant and lactating women, including during ANC, PNC, EPI outreach, IMCI, NVAC, routine consultations, community sessions and household visits.
- Many women and family members (husbands, mother in laws) are unaware of the benefits of exclusive breastfeeding and the risks of not doing it. Identify the practices, beliefs, concerns, and constraints to early and exclusive breastfeeding and address them through appropriate and consistent messages.
- **Prevent and treat early problems**. Most breastfeeding problems occur in the first 2 weeks of life. These problems include cracked nipples, engorgement and mastitis. Support mothers in proper positioning and attachment of the baby to the breast and frequent breastfeeding can prevent these problems.
- **Establish good practices in health facilities**. Avoid distribution of free samples of infant formula, the use of glucose water, and separation of mother from the newborn.
- Protect, promote and maintain a 'baby-friendly' environment, by practicing the 'Ten Steps to Successful Breastfeeding' in maternity services (Baby Friendly Hospital Initiative).
- Praise the mother for exclusively breastfeeding, provide ongoing encouragement, and assist with positioning and attachment to the breast.
- Ensure up-to-date knowledge and training on IYCF counseling.

Essential supplies and job aids:

- Information, Education and Communication materials on IYCF - including counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Growth Monitoring Promotion (GMP) card as a communication and counseling tool for mothers to engage in appropriate IYCF practices.
- Training guide on IYCF counseling.
- Monitoring and reporting tools to assess IYCF practice of mothers.

Key indicator to monitor:

% of children less than 6 months who are exclusively breastfed.

References:

National strategy for IYCF Bangladesh, 2007.

Global strategy for infant and young child feeding, WHO/UNICEF, 2003.

Evidence on the long-term effects of breastfeeding, WHO, 2009.

Alive and Thrive: www.aliveandthrive.org.

Black RE, Victora CG, Walker SP, and the Maternal and Child Nutrition Study Group. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet 2013; published online June 6. http:// dx.doi.org/10.1016/S0140-6736(13)60937-X.

Intervention 3

Age appropriate complementary feeding of children from 6-23 months

"For adequate growth and development"

When the child becomes 6 months old, breastmilk alone is no longer sufficient to meet the nutritional requirements for growth, which is the greatest between 6-23 months of age. Growth faltering occurs mainly in the first two years if there is insufficient nutrient intake and illness. Complementary food should be introduced starting at 6 months and be adequate in both diversity (number of food groups) and meal frequency for the child's age group. Breastfeeding should also continue during this period along with complementary feeding.

Why is it important?

- **Brain and body development**. Good nutrition is essential at this time to ensure healthy brain and body development.
- **Prevent long-term, irreversible consequences**. Poor feeding practices and low quality food can affect future learning ability, economic productivity, immune response, and reproductive outcomes.

What can health service providers do?

- **Provide timely and targeted counseling on appropriate complementary feeding practices**. Counsel caregivers on options for improving diet and feeding practices, to ensure that complementary food is introduced in a timely manner and is diverse enough. Provide Infant and Young Child Feeding (IYCF) counseling and growth monitoring promotion (GMP) during all contact points with pregnant and lactating women, including during ANC, PNC, EPI outreach, IMCI, NVAC, routine consultations, community sessions and household visits.
- Identify the practices, beliefs, concerns, and constraints to age appropriate complementary feeding and address them through effective counseling, consistent messages and behaviour change communication.

- **Promote and enhance access to nutritionally adequate complementary foods and fortified products to enrich home-prepared foods**. Education alone to improve the use of available foods can be highly effective in some settings, but fortified foods and food assistance may be needed where food insecurity is a major constraint.
- **Prevent and treat common early childhood illnesses**. Reducing the frequency and duration of illness and promoting increased food intake after illness is an important strategy for improving growth and recovery.
- Praise the mother for practicing appropriate complementary feeding, provide ongoing encouragement and advice.
- Ensure up to date knowledge and training on IYCF counseling.

Essential supplies and job aids:

- Information, Education and Communication materials on IYCF - including counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Growth Monitoring Promotion (GMP) card as a communication and counseling tool for mothers to engage in appropriate IYCF practices.
- Training guide on IYCF counseling.
- Monitoring and reporting tools to assess IYCF practice of mothers.
- Materials for cooking demonstrations of nutrient-rich locally prepared foods for young children.

Key indicators to monitor:

% of children 6– 23 months of age who are fed a minimum acceptable diet. This composite indicator is measured by:

- % of children 6– 23 months of age who are fed 4 or more food groups.
- % of children 6- 23 months who are fed an age appropriate meal frequency.

References:

National strategy for IYCF Bangladesh, 2007.

Guiding Principles for Complementary Feeding of the Breastfed Child, WHO, 2003.

Globsal strategy for infant and young child feeding, WHO/UNICEF, 2003.

Alive and Thrive: www.alivethrive.org.

Intervention 4

Handwashing with soap at critical times – before eating/preparing food, before feeding a child and after defecation

'Clean hands save lives and prevent undernutrition'

Why is it important?

- **Prevents the spread of disease:** Handwashing with soap works by interrupting the transmission of pathogens that cause disease. Meta analyses have shown that handwashing with soap can reduce the incidence of diarrhoea in children under five by 37%-48%.
- **Saves lives and prevents illness.** Diarrhoeal disease and respiratory tract infections are the two biggest killers of children in the developing world. Handwashing with soap reduces the transmission of bacteria, viruses and protozoa that cause diarrhoeal diseases, respiratory infections and infections of the intestines, skin and eyes.
- **Decreases the loss of vital nutrients from infections**, which are critical to physical and cognitive growth and development of the body. Diarrhoea and intestinal worm infections can cause the loss of nutrients from the body and decreased absorption of nutrient from food. Preventing infections by washing hands with soap at critical times can therefore also prevent undernutrition.
- **Cost-effective:** Handwashing with soap is one of the most effective and least expensive ways to prevent diarrhoeal diseases and subsequent risk of undernutrition.
- Low rates of handwashing are rarely caused by a lack of soap. Soap is present in the vast majority of households worldwide, but it is commonly used for bathing and laundry, not for handwashing.
- Lack of water is usually not a problem either, as hands can be effectively washed with little, or recycled water. In studies around the world, one major reason for low rates of handwashing with soap is that this is simply not a habit and both water and soap may not be easy to access together where and when they need to be used.

What can health service providers do?

- **Provide timely and targeted counseling on hygiene promotion along with IYCF counseling**. Ensure that caregivers understand the importance of handwashing with soap to prevent disease and undernutrition.
- Promote handwashing with soap including demonstrations, at every contact opportunity with mothers, husbands and in-laws such as during ANC, PNC, EPI outreach, IMCI, NVAC, routine consultations, community sessions and household visits.
- Identify the practices, beliefs, concerns, and constraints to handwashing with soap at critical times and address them through consistent messages and behaviour change communication.
- Conduct joint promotion and dialogue with religious leaders, school teachers, etc. to ensure consistent messages and support is provided to caregivers and children on handwashing with soap.
- Praise caregivers and children for handwashing with soap at critical times and provide ongoing encouragement and advice.
- Ensure up to date knowledge and training on hygiene promotion and IYCF counseling.

Essential supplies and job aids:

- Information, Education and Communication materials on hygiene including handwashing with soap - including counseling cards, pamphlets, posters, video clips/CDs, as well as practical demonstrations of effective handwashing.
- Growth Monitoring Promotion (GMP) card as a communication and counseling tool for mothers to engage in appropriate IYCF practices.
- Training guides on IYCF counseling and hygiene promotion.
- Monitoring and reporting tools to assess the actual practice of handwashing with soap of caregivers.

Key indicator to monitor:

% of caregivers handwashing with soap at critical times – before eating and preparing food, before feeding a child and after defecation.

References:

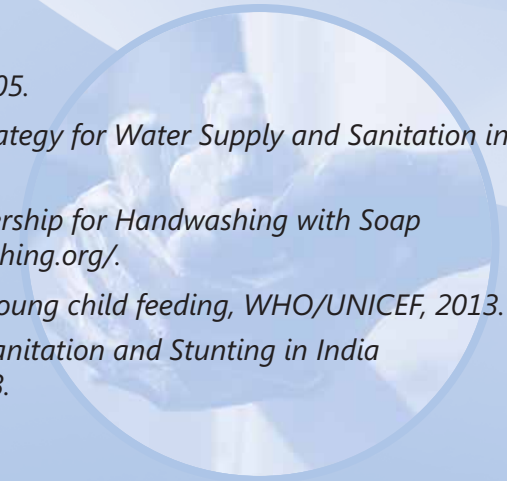
National Sanitation Strategy, 2005.

National Hygiene Promotion Strategy for Water Supply and Sanitation in Bangladesh, 2011.

The Global Public-Private Partnership for Handwashing with Soap (PPPHW): http://globalhandwashing.org/.

Globsal strategy for infant and young child feeding, WHO/UNICEF, 2013.

Chambers and van Medeazza, Sanitation and Stunting in India Undernutrition's Blind Spot, 2013.



Intervention 5

Vitamin A supplementation for children 6-59 months once every six months

Why is it important?

- Vitamin A supplementation every six months is an inexpensive, quick, and effective way to improve vitamin A status and save children's lives.
- Vitamin A is essential for the healthy growth and development of children
- It is essential for the functioning of the immune system
- Vitamin A deficiency is one of the main causes of night blindness amongst young children

What can health service providers do?

- Support implementation of National Vitamin A Campaigns (NVAC) bi-annually
- Provide information and promote to caregivers about the benefits of Vitamin A for growth and development
- Ensure high coverage of Vitamin A supplementation during campaigns, through community mobilization, good planning, monitoring and organization
- Ensure adequate Vitamin A capsule supplies are forecasted and available on time
- Identify low NVAC coverage areas and address any constraints.
- Find children who missed the campaign and provide them with Vitamin A capsules.

Essential supplies and job aids:

- Vitamin A capsules:

  100,000 IU (for children 6-11 months)

  200,000 IU (for children 12-59 months)
- National Vitamin A Campaign (NVAC) guideline
- Dosing and administration chart for Vitamin A

- Information, Education and Communication materials on micronutrient supplementation, including Vitamin A, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs
- Supply forecasting and distribution tools (tally sheets, etc)
- Monitoring and reporting tools (cards, registers)
- Implementation guides on micronutrient supplementation, including Vitamin A

Vitamin A supplementation:

Age	Dose	Frequency
6-11 months	100,000 i.u (blue capsule)	Once in a year
12-59 months	200,000 i.u (red capsule)	Every 4-6 months

Key indicator to monitor:

% of children 6- 59 months old supplemented with vitamin A once every six months.

References:

National Guidelines for Vitamin A program in Bangladesh, 2008.

Guideline: Vitamin A supplementation for infants and children 6-59 months of age, WHO, 2011.

Vitamin A Supplementation: Progress for child survival, UNICEF, 2005.

Intervention 6

Iron Folic Acid (IFA) supplementation for Pregnant and Lactating Women (PLWs) and adolescent girls

Why is it important?

- Iron deficiency is the most common and widespread nutritional disorder in the world.
- Because women of reproductive age lose iron through menstruation and their diets are often lacking in available iron, they are particularly vulnerable to iron deficiency.
- Women's nutrient needs increase during pregnancy and lactation. Pregnant women also require more protein, iron, iodine, vitamin A, folic acid, and other nutrients. If the requirements are not met, the consequences can be serious for women and their infants.
- Folic acid helps prevent neural tube defects
- The major health consequences of Iron Deficiency Anemia (IDA) include poor pregnancy outcome, impaired physical and cognitive development, increased risk of morbidity in children and reduced work productivity in adults.
- Most women and adolescent girls in Bangladesh do not consume diets adequate in micronutrients, including iron. Iron folic acid supplementation helps provide them with the necessary quantities of these micronutrients during a critical time in their growth and development.
- **Consequences of iron deficiency anemia for pregnant women and their fetuses are:**
  - increased risk of prolonged labour
  - increased risk of premature delivery
  - low birth weight, leading to increased risk of infant mortality and stunting
  - weakness and fatigue

What can health service providers do?

- Provide information and counsel pregnant, lactating mothers and family members on the risks of anemia and the importance of IFA supplementation especially during pregnancy. Counsel mothers on the possible side effects of IFA (such nausea, constipation, black stools).
- Provide adequate dose of IFA during each ANC visit. It is recommended that pregnant women should take iron folic acid supplements daily starting from the first trimester until delivery and continue three months post-partum.

- Encourage mothers to complete full dose of IFA supplementation and promote compliance. Praise the mother for taking IFA supplementation during pregnancy, provide ongoing encouragement and advice.
- Promote consumption of iron rich and fortified foods during pregnancy and lactation, including additional food intake and rest during pregnancy.
- Register every pregnant woman in your community and encourage her to complete ANC visits and receive IFA supplementation.
- Ensure there are adequate supplies of IFA tablets (in improved, strip packaging) for pregnant women. Monitor supplies, report and address any stock outs. Monitor compliance.

Essential supplies and job aids:

- IFA tablets: 60 mg elemental iron and 400 microgram folic acid
- Equipment and tools to assess hemoglobin (Hb) and anemia status – Hemocue machine, Hb color scale
- Dosing and administration table chart for Iron Folic Acid (IFA)
- Information, Education and Communication materials on micronutrient supplementation, including Iron Folic Acid, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs
- Supply forecasting and distribution tools
- Monitoring and reporting tools
- Training guides on micronutrient supplementation, including Iron Folic Acid

Dosing and administration table chart for Iron Folic Acid (IFA):

Target group	Dose	Duration
Adolescent (13 to 19 years), Non pregnant non lactating women	Elemental iron 60 mg + Folic acid 400 microgram, 2 tablet/ week	For 3 months, every 3 months
Pregnant women	Elemental iron 60 mg + Folic acid 400 microgram, 1 tablet/ day	Throughout whole pregnancy period
Lactating women	Elemental iron 60 mg + Folic acid 400 microgram, 1 tablet/ day	0 - 3 months after delivery (post-partum)

Key indicators to monitor:

% of women who consumed at least 100 IFA tablet during last pregnancy

% of adolescent girls supplemented with IFA weekly

References:

National strategy for anemia prevention and control in Bangladesh, 2007

Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anaemia, INACG/ UNICEF/WHO, 1998.

Intervention 7

Multiple Micronutrient Powder (MNP) supplementation for children 6-23 months

Why is it important?

- After six months of age, when children start receiving semi-solid foods, the intake of several vitamins and minerals can be insufficient to meet an infant's requirements. This increases their risk of developing anaemia and other micronutrient deficiencies.
- Micronutrient powders are single-dose packets of iron and other vitamins and minerals in powder form that can be sprinkled onto any ready to eat semi-solid food consumed at home or at any other point of use. The powders are used to increase the micronutrient content of the infant's diet without changing their usual dietary habits.
- WHO recommends the use of multiple micronutrient powders containing at least iron, vitamin A and zinc for home fortification of foods as an option to improve iron status and reduce anaemia in infants and children 6–23 months of age.

What can health service providers do?

- Provide information and counsel caregivers on the benefits and use of multiple micronutrient powders for young children. Counsel mothers on the possible side effects of MNPs and how to manage them.
- Provide adequate dose of MNPs as per guidelines and monitor compliance.
- Organise cooking demonstrations and promotion sessions on utilization of MNPs
- Promote consumption of nutrient-rich and fortified foods for young children, especially between 6-23 months during the critical period of rapid growth and development.

Essential supplies and job aids:

- Composition of MNP-5 sachet

Micronutrients	Amount
Iron	12.5 mg
Zinc	5 mg
Folic acid	160 microgram
Vitamin A	300 microgram RI
Vitamin C	30 mg

Dosing:

Age 6-23 months. Starting from 6 months

1 sachet/ day for 2 months

4 months off

1 sachet/ day for 2 months

4 months off

1 sachet/ day for 2 months

4 months off

- Dosing and administration table chart for multiple Micronutrient Powder (MNP)
- Information, Education and Communication materials on micronutrient supplementation, including use of MNPs, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs
- Supply forecasting and distribution tools
- Monitoring and reporting tools
- Training guides on micronutrient supplementation, including use of MNPs

Key indicator to monitor:

% of children 6- 23 months who consume MNP as per guidelines

References:

Use of multiple micronutrient powders for home fortification of foods consumed by infants and children 6–23 months of age, WHO, 2011.

Intervention 8

ORS with zinc in management of acute diarrhoea

Why is it important?

- Diarrhoeal disease is the second leading cause of death in children under five years old. It is both preventable and treatable.
- ORS contain salts and sugar which help the child to absorb water to replace what is lost during diarrhoeal episodes. ORS with zinc reduces the duration of the episode as well as its incidence and severity of diarrhoea in the subsequent months.

Zinc supplements given in the management of acute diarrhoea along with ORS:

- shortens the duration of the diarrhoeal episode.
- reduces the severity of the diarrhoeal episode.
- lowers the incidence of diarrhoea 2–3 months following episode.
- improves appetite and growth.

What can health service providers do?

- Counsel caregivers on the use of ORS with zinc supplementation in the management of childhood diarrhoea.
- Conduct monitoring and follow-up of compliance.
- Promote appropriate Infant and Young Child Feeding (IYCF) practices for children with acute diarrhoea. Encourage continued breastfeeding and frequent feeding of sick children.
- Ensure there are adequate supplies of zinc supplements and ORS. Monitor supplies, report and address any stock outs.

Essential supplies and job aids:

- Zinc tablet (dispersible): 10 mg/ tablet.
- Dosing and administration table chart for ORS and zinc in management of acute diarrhoea.
- Information, Education and Communication materials on management of diarrhoea and feeding of the sick child, including use of ORS with zinc, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs.

- Supply forecasting and distribution tools for ORS and zinc.
- Monitoring and reporting tools .
- National training guide on IMCI (Integrated Management of Childhood Illness).

Age	Dosing (Zinc)
6 months up to 5 years	1 tab for 10 days

Key indicator to monitor:

% of children 6- 59 months with acute diarrhoea treated with ORS and zinc.

References:

National IMCI protocol, 2012.

Diarrhoea treatment guidelines including new recommendations for the use of ORS and zinc supplementation for clinic-based healthcare workers, USAID/UNICEF/WHO, 2005.

Intervention 9

Deworming of children 24-59 months once every six months

Why is it important?

- Soil-transmitted helminths (worms) are among the most common infections in developing countries. They:
  - impair the nutritional status of people by feeding on host tissues, including blood, which leads to a loss of iron and protein, and leads to malabsorption of nutrients.
  - cause a loss of appetite and therefore a reduction in nutrition intake and physical fitness.
- Nutritional impairment caused by soil-transmitted helminths is recognized to have a significant impact on growth and physical development.
- WHO recommends periodic drug treatment (deworming) of all children living in endemic areas.

What can health service providers do?

- Support and participate in National Vitamin A Plus Campaigns (NVAC) bi-annually, which includes deworming.
- Promote adequate hygiene and sanitation practices to caregivers to prevent helminth infections.
- Provide information and promote to caregivers about the benefits of deworming.
- Ensure adequate supplies of deworming tablets. Monitor supplies, report and address any stock outs.
- Identify low NVAC coverage areas and address any constraints.
- Find children who missed the NVAC campaign and provide them with deworming tablets.
- Provide routine deworming to young children and pregnant and lactating women as necessary.

Essential supplies and job aids:

- Deworming tablets - Albendazole (400 mg).
- Dosing and administration table chart for deworming.
- Information, Education and Communication materials on deworming, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Supply forecasting and distribution tools.
- Monitoring and reporting tools.
- Training guides on NVAC and deworming.

Key indicator to monitor:

% of children 24-59 months dewormed once every six months.

References:

Deworming for Health and Development, WHO, 2004.

Intervention 10

Consumption of foods rich in Iron and Vitamin A

Why is it important?

- Consumption of nutrient-rich foods, including those rich in iron and vitamin A can protect women and adolescent girls' health and nutritional status.
- Women are more likely to suffer from nutritional deficiencies than men for reasons including women's reproductive biology, social status, and limited access to nutritious foods.
- Adolescent girls are particularly vulnerable to malnutrition because they are growing faster than at any time after their first year of life. They need protein, iron, and other micronutrients to support the adolescent growth spurt and meet the body's increased demand for iron during menstruation. Adolescent girls nutrition is important to prepare them for motherhood in the future when they become adults.
- Well-nourished women are better able to provide for themselves, their children, and their families.
- Well-nourished mothers are more likely to have infants with healthy birth weights, and such children are less likely to ever suffer from malnutrition.

What can health service providers do?

- Provide counseling of pregnant and lactating women, parents, and adolescents girls to increase consumption and dietary intake of Iron and Vitamin A rich and fortified foods
- Promote awareness in the community regarding special nutrition needs of PLWs and adolescent girls and the risk of undernutrition in these groups
- Promote nutrition of PLWs and adolescents at all contact point opportunities, including in ANC, PNC, EPI outreach, IMCI, routine consultations, community sessions and household visits.
- Provide support to adolescent clubs in your community to integrate nutrition promotion activities, including nutrition screening, follow-up, cooking demonstrations, etc

Essential supplies and job aids:

- Information, Education and Communication materials on promotion of iron-rich and vitamin A rich foods, maternal and adolescent girls' nutrition, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Monitoring and reporting tools to assess nutrition practice and behaviours of PLWs and adolescent girls.
- Communication guides on nutrition promotion.

Key indicators to monitor:

% of PLWs consuming an adequate diet (extra 1 fistful of food for pregnant women, 2 extra fistfuls of food for lactating women).

Dietary diversity score of pregnant/lactating women and adolescent girls.

References:

Bangladesh Maternal health strategy, 2000.

Gender and Nutrition, FAO, 2012.

Meeting Nutritional Needs Throughout Life, FAO/FMFH, 2013.

Intervention 11

Household consumption of iodised salt and fortified oil with Vitamin A

Why is it important?

Food fortification is a food based approach to control micronutrient deficiencies at the population level at a reasonable cost. Iodine deficiency and Vitamin A deficiency, two major micronutrient deficiencies globally and in Bangladesh can be reduced by consuming iodized salt and vitamin A fortified edible oil in the household.

What can health service providers do?

- Promote awareness in the community about the existence and benefits of fortified foods (such as iodised salt, cooking oil with Vitamin A).
- Provide counseling and promotion on consumption and utilization of fortified foods at all contact point opportunities, including in ANC, PNC, EPI outreach, IMCI, routine consultations, community sessions and household visits.
- Provide follow-up to caregivers, monitoring and reporting of nutrition promotion and counseling activities.

Essential supplies and job aids:

- Information, Education and Communication materials on promotion on iodised salt and fortified edible oil with Vitamin A, such as counseling cards, pamphlets, posters, flashcards, video clips/CDs.
- Monitoring and reporting tools to assess nutrition practice and behaviours of caregivers and households.
- Communication guides on nutrition promotion.

Key indicators to monitor:

% of households consuming iodized salt.

% of households consuming vitamin A fortified edible oil.

References:

Guideline on food fortification with micronutrients, WHO, FAO, 2006.

Recommended iodine levels in salt and guidelines for monitoring their adequacy and effectiveness, WHO, 1996.

Iodine deficiency disorders and universal salt iodisation: South Asia Priorities, UNICEF, 2002.

Intervention 12

Management of acute malnutrition in children 0-59 months

Why is it important?

- Severe acute malnutrition (SAM) is a life threatening condition requiring urgent treatment. Severe acute malnutrition remains a major killer of children under five years of age globally.
- The risk of death increases to 5–8 fold in children suffering from moderate and severe acute malnutrition.
- Undernourished children, including those suffering from acute malnutrition, have increased susceptibility to infections and hence frequent episodes of illness and longer recovery periods.
- Undernutrition, including acute malnutrition, leads to growth retardation and impaired psychosocial and cognitive development which has longer-term negative consequences in adulthood.
- Children suffering from SAM can be treated in in-patient and out-patient care depending on existence of medical complications, using therapeutic treatment or other nutrient-dense foods at home.
- The dietary management of children with Moderate Acute Malnutrition (MAM) is based on the optimal use of locally available foods to improve nutritional status and prevent severe acute malnutrition. In situations of food shortage, or where some nutrients are not sufficiently available through local foods, supplementary foods have been used to manage children with MAM.

What can health service providers do?

- Routinely screen all children 0-59 months for their nutritional status at all possible contact points, including PNC, EPI outreach, routine consultations, community-based promotion sessions and house to house visits (active case finding).
- Refer acutely malnourished children for appropriate in-patient or out-patient care according to criteria defined in national protocols.
- Provide nutritional treatment according to national protocols and standards.
- Motivate caregivers and in-laws to adhere to treatment and adopt appropriate feeding and caring practices to prevent acute malnutrition.
- Conduct assessments and regular household follow-ups to understand and address the causes of acute malnutrition, including providing appropriate IYCF counseling and hygiene promotion.

- Organize cooking demonstrations for caregivers in preparing energy dense recipes using locally available foods for children with acute malnutrition.
- Refer and facilitate access of ultra poor and vulnerable households to livelihoods programmes and social services to prevent underlying causes of acute malnutrition.
- Regularly monitor the nutritional status of children with acute malnutrition, provide counseling and prevention services.

Essential supplies and job aids:

- Anthropometric equipment (height boards, weighing scales, MUAC tape).
- Guide on taking anthropometric measurements of children 6-59 months.
- Weight for Height tables.
- Flowchart/algorithm on in-patient and out-patient management of severe acute malnutrition.
- National SAM and CMAM protocols.
- Case assessment and checklist forms.
- Monitoring and reporting tools (registers and patient cards).
- Cooking materials and utensils for cooking demonstrations.
- Nutritional treatment and commodities, systematic medicines, micronutrients, etc. (as per protocols).

Key indicators to monitor:

% of children 0-59 months screened for their nutritional status (% screened as wasted, stunted, underweight).

% of children 0-59 months with acute malnutrition who received appropriate treatment as per national protocol.

% of children 0-59 months with acute malnutrition who were discharged as cured, died, defaulted, non-responder.

References:

National guidelines for the management of severely malnourished children in Bangladesh, 2008.

National guideline for Community-based Management of Acute Malnutrition in Bangladesh, 2011.

WHO Child Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children, Joint Statement WHO/UNICEF, 2009.

Community-based management of severe acute malnutrition, Joint Statement, WHO/UNSCN/UNICEF, 2007.

Intervention 13

Adequate food intake and rest during pregnancy and lactation

Why is it important?

- Maternal nutrition plays a critical role in fetal growth and development. Good maternal health and nutrition are important contributors to child survival.
- Women's nutrient needs increase during pregnancy and lactation. Pregnant women also require more protein, iron, iodine, vitamin A, folic acid, and other nutrients. If the requirements are not met, the consequences can be serious for women and their infants.
- During pregnancy all women need more food, a varied diet, adequate rest and micronutrient supplements. When energy and other nutrient intake does not increase, the body's own reserves are used, leaving a pregnant woman weakened.
- Inadequate weight gain during pregnancy often results in low birth weight.
- Low birth weight babies are at greater risk of death, prone to infection, grow and develop more slowly.
- Fetal growth restriction is associated with maternal short stature and underweight and causes 12% of neonatal deaths globally.
- Undernutrition during pregnancy, affecting fetal growth, and the first 2 years of life is a major determinant of both stunting of linear growth and subsequent obesity and non-communicable diseases later in adulthood.

What can health service providers do?

- Counsel pregnant, lactating mothers (PLWs) and family members (husbands, in-laws) on the importance of maternal nutrition and health, including adequate food intake and rest during pregnancy.
- Promote maternal nutrition during all contact point opportunities, including in ANC, PNC, EPI outreach, IMCI, routine consultations, community sessions and household visits.
- Promote awareness in the community regarding special nutrition needs of PLWs and adolescent girls and the risk of undernutrition in these groups.
- Measure and record the weight and MUAC of every pregnant mother during ANC and PNC visits and provide nutrition counseling accordingly.
- Measure and record the weight of the newborn child at birth and provide counseling on IYCF to caregivers.

Essential supplies and job aids:

- Weighing scale for mothers/adults.
- Mid-Upper Arm Circumference (MUAC) tape for mothers/adults.
- Infant weighing machine/scale to measure birth weight.
- Adult height measuring device/tool.
- Counseling cards and guides on maternal nutrition.
- BMI calculation chart.
- ANC/PNC registers and cards to monitor nutritional status of PLWs.

Key indicators to monitor:

% of PLWs consuming an adequate diet (extra 1 fistful of food for pregnant women, 2 fistfuls of food for lactating women).

% of pregnant women who gained at least 9 kg during last pregnancy.

% newborn babies born with low birth weight (<2.5 kg).

References:

Bangladesh Maternal Health strategy, 2000.

Maternal nutrition during pregnancy and lactation, AED/CORE group, Linkages Project, 2004.

Fall, C. (2009). Maternal nutrition: Effects on health in the next generation, Indian J Med Res 130, p. 593-599.

Intervention 14

Calcium supplementation during pregnancy and post-partum

Why is it important?

- Hypertensive disorders such as pre-eclampsia and eclampsia are among the main causes of maternal deaths and preterm births, especially in low-income countries. Preterm births are the leading cause of early neonatal deaths and infant mortality
- Calcium supplementation reduces the risk of hypertension and pre-eclampsia during pregnancy, especially for high-risk women and for those with low dietary calcium intake.
- Since calcium inhibits absorption of iron, calcium supplementation should be separated in time during the day from the recommended iron folic acid supplementation during pregnancy.
- In populations where calcium intake is low, calcium supplementation as part of the antenatal care is recommended for the prevention of preeclampsia in pregnant women, particularly among those at higher risk of developing hypertension

What can health service providers do?

- Provide adequate calcium supplementation to women during pregnancy and post-partum according to national guidelines. In Bangladesh, it is recommended that pregnant women consume one calcium tablet daily starting from the second trimester up to delivery, and to continue daily calcium supplementation post-partum until the child is 6 months of age.
- Calcium supplementation requires close monitoring of women's total daily calcium intake (diet, supplements and antacids). The overall intake of calcium per day should not exceed the locally established upper tolerable limit.
- Promote healthy dietary practices as part of maternal nutrition counseling, to ensure adequate calcium intake through local calcium-rich foods.
- Ensure adequate planning and monitoring of supplies and maternal nutrition services

Essential supplies and job aids:

- Calcium supplements 500mg/tablet
- Dosing and administration table chart for calcium supplementation

- Information, Education and Communication materials on maternal nutrition and micronutrient supplementation - including counseling cards, pamphlets, posters, flashcards, video clips/CDs
- Guidelines on micronutrient supplementation
  Supply forecasting, monitoring and reporting tools

Target group	Dose	Duration
Pregnant women	500mg / day	From second trimester up to delivery
Lactating women	500mg / day	From delivery to 6 months post-partum

Key indicator to monitor:

% of women who are supplemented with calcium in pregnancy and post-partum according to guidelines

References:

Guideline: Calcium supplementation in pregnant women, WHO, 2013.

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