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 Ministry of Health, Nutrition & Indigenous Medicine
 Suwasiripaya,
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 Colombo 10.
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All Provincial Directors of Health Services
 All Regional Directors of Health Services
 All Heads of Institutions
 All Medical Officers of Health

Iron Supplementation for Infants and Young Children

Prevalence of anaemia among Sri Lankan children of 6 to 12 month and 1-2 year age groups, in whom there is rapid physical and mental development, is found to be high; 34% and 24% respectively (MRI 2012). Iron deficiency has been a major cause for the high prevalence of anaemia. Iron is a micronutrient required for growth and development of infants and young children, and scientific evidence shows that iron deficiency and iron deficiency anemia can lead to reduction in IQ, retardation in growth and increased risk of infections. Therefore iron supplementation has been strongly recommended by the WHO as an evidence based intervention aimed at improving iron status and reducing anemia among these groups of children (WHO 2013. Essential Nutrition Actions). The Technical Advisory Committee on New Born and Child Health and the Subcommittee on Maternal and Child Nutrition of the Ministry of Health chaired by the DDG PHS II have recommended the adoption of this evidence based intervention in Sri Lanka as a short term measure to prevent anemia among this important target group.

For the past few years multiple micronutrient (MMN) supplementation for infants and young children has been implemented in all the districts of Northern Province, Eastern Province, Uva Province, Hambantota and Nuwaraeliya districts. From year 2017 onwards this programme will be expanded to all 26 health districts.

Hence the following iron supplementation regime for all infants and young children will be implemented in Sri Lanka from 01st of January 2017 onwards;

Birth outcome	Age of commencement	Dose	Frequency	Duration
Term ≥ 2.5 kg	Infants on completion of 6 months of age	One MMN sachet per day	Once daily	2 months (60 days)
	Children on completion of 12 months of age	One MMN sachet per day	Once daily	2 months (60 days)
	Children on completion of 18 months of age	One MMN sachet per day	Once daily	2 months (60 days)
	(See annex 1 for feeding instructions)			
	If MMN is not available			
	Infants on completion of 6 months of age	Elemental Iron – 10-12.5mg/day	Once daily (1 hour before or 2 hours after a meal)	3 months

Pre terms and low birth weight children are excluded from the above regime. They should be managed during the first 2 years of life according to the following schedule.

Birth outcome	Age of commencement	Dose	Frequency	Duration
Pre-term* (< 37 weeks POA)	Infants from the age of 2 weeks	Elemental Iron 3mg/kg/day	Once daily	Till completion of 2 years of age
	Soon after birth	Multivitamin drops ** 0.3ml/kg/day	Once daily	Till completion of 2 years of age
Or Low birth weight* (< 2.5kg)	Soon after birth	Folic acid** 500 micrograms	Once weekly	Till completion of 1 year of age
	From completion of 1 year	Folic acid** 1 mg	Once weekly	till completion of 2 years of age

**If the baby is discharged prior to 2 weeks, supplementation can be started at the follow up clinic at 2 weeks. If the infant is not followed up at the hospital clinic, the area MOH should continue the same schedule till 2 years of age.*

*** For the prevention of anemia of prematurity*

Preparations of supplements and mode of administration:

Iron supplements are available either as a component of a multiple micronutrient powder or a liquid (drops/syrup). Please note that the concentration of elemental iron differs between dosage forms i.e. between drops and syrups as well as among different brands.

Multiple micronutrients (MMN); 1g sachet of lipid encapsulated powder contains 15 micronutrients including iron (ferrous fumarate) 10mg, Vitamin C (ascorbic acid) 30mg, folic acid 150ug, Zinc (zinc gluconate) 4.1mg. For detailed guidelines on MMN supplementation including composition please refer to the guideline (annex I).

Iron drops:

Strength of the commonly used iron drops have a concentration of 50 mg **elemental iron** in 1 ml (which should be dosed at 0.06ml/kg/day) or 25mg **elemental iron** in 1 ml (which should be dosed at 0.12ml/kg/day).

Iron syrup:

Commonly used iron syrup has a concentration of 50mg **elemental iron** in 5ml (0.3ml/kg/day) and 25mg elemental iron in 5ml (0.6ml/kg/day).

Multivitamin drops;

Multivitamin drops available in the country have 40mg of vitamin C in 0.6ml Therefore 0.3ml/kg/day will provide 20mg of Vitamin C /kg/day.

Folic Acid tablets;

The available tablet strength is 1mg. Therefore, half a tablet dissolved in expressed breast milk should be given once a week till the baby is one year of age and from one year onwards 1mg once a week till completion of 2 years of age.

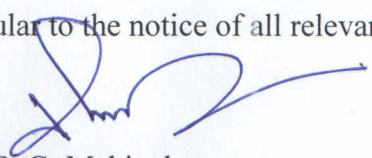
Logistics

MMN will be issued by the Family Health Bureau and iron drops/syrup and multi vitamin drops by the Medical Supplies Division of the Ministry of Health for the government sector health institutions.

The MOOH should arrange to obtain their MMN stocks through Regional Medical Supplies Division (RMSD). OIC RMSD is required to prepare in triplicate and send the Monthly Stock Return/Request form (Nutrition Supplies) (see annex II) on a quarterly basis to MOMCH and the FHB. *(Please note that this return should be replaced when the new Monthly Stock Return H 1158 Form becomes available).*

Iron drops/syrup and multi vitamin drops are to be requested by MOH annually and obtained through the respective RMSDs. These should be issued to preterm/ low birth weight babies on prescription by Medical Officer in charge of the clinic centre (MOH/AMOH/MO/RMO).

You are requested to adhere to the above iron supplementation regime for all infants and young children in Sri Lanka from 01st of January 2017 onwards. Please bring the contents of this circular to the notice of all relevant health staff to ensure the success of this programme.


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Annex 1

Guideline for Multiple Micro Nutrient (MMN) Supplementation

For Infants and Young Children

The multiple micronutrients (MMN) to be used in Sri Lanka for home based fortification of complementary food is distributed free of charge by the Ministry of Health of Government of Sri Lanka.

MMN is a supplement with 15 minerals and vitamins including iron and Zinc (Zn) which are important for a child's healthy physical and cognitive development. There is scientific evidence to show that providing multiple micronutrients is much more beneficial than giving iron supplements alone because Zn and iron deficiency generally co-exist. Therefore in addition to the early introduction of iron rich food such as fish, meat, dried sprats etc., according to IYCF guidelines, it is beneficial for a child to receive multiple micronutrients to optimize the development on completion of six months of age, especially considering the high prevalence of anaemia among infants and young children in Sri Lanka (26.5% - MRI 2012).

Composition of MMN

1g sachet of lipid encapsulated powder containing 15 micronutrients includes Iron (ferrous fumarate) 10mg, Zinc (zinc gluconate) 4.1mg, folic acid 150ug, Vitamin C (ascorbic acid) 30mg, Copper 0.56 mg, iodine 90ug, selenium 17 ug, Vitamin A 400 ug, Vitamin B1 0.5mg, Vitamin B2 0.5mg, Vitamin B6 0.5mg, Vitamin B12 0.9ug, Niacin 6mg, Vitamin D3 5ug and Vitamin E 5mg.

Addition of Vitamin C is known to enhance iron absorption and the low dose of vitamin A optimizes iron metabolism.

Target group

All infants and young children completing the ages of **6, 12 and 18 months**.

PHM can use the Births and Immunization Register to identify this target group (i.e. infants and young children due to come for vaccination at 6, 12 & 18 month of age).

Dose and duration

Dose: One sachet per day.

Duration: For a period of two (02) consecutive months (i.e. 60 days) for each child from the date of commencement.

Note: Use only one sachet per day. If the care givers happen to forget on a particular day, can continue as usual from the next day. The dose of one sachet per day should not be exceeded.

Method of using MMN

Given to the child mixed with semisolid or solid food. Use the entire content in the sachet for a meal.

The content of the whole sachet should be added to a **small** quantity of semisolid or solid food just before feeding, mixed well and fed to the child as the first few mouthfuls of the child's meal.

MMN should never be mixed with water or any other fluids as the content of the sachet are not water soluble and tends to float.

Care should be taken to feed the quantity of food mixed with MMN within a period of about 10-15 minutes (within 30 minutes at the most). If food mixed with MMN is kept for long periods it will get discoloured and would be unpalatable.

Storage of unopened sachets

In a closed airtight container preferably kept away from sunlight and heat.

Adverse effects

Dark discolouration of stools can occur which is a normal occurrence. Very rarely nausea and vomiting may occur. Any adverse effects should be reported to the area Medical Officer of Health (MOH).

Other public health intervention programmes- The children should continue to get the vaccines and the Vitamin A mega dose (according to the schedule recommended in General Circular No. 01/05-2009). Thripasha (for eligible children) and the de worming preventive dose should also be given as usual at the recommended intervals. Giving MMN is not an indication to change these schedules.

Other multivitamin/mineral supplements- Prescribing officers should be aware that the recipients would not need any other micronutrient supplements during the period of MMN supplementation.

Frequency of distribution of sachets

Monthly for 2 consecutive months.

30 sachets given to the mother in a single instalment for a period of one month.

Place of distribution

Child Welfare Clinic(CWC)- when children are brought for routine clinic visit and vaccination

Field weighing post – when children are brought for weighing

e.g. Provide the first 30 sachets when children are brought to the CWC at 6, 12 and 18 months. The second batch of 30 sachets can be given either at the field weighing post or CWC, whichever is convenient to the mother.

The date and the number of sachets issued should be recorded in the child's CHDR.

Checking compliance

When a mother comes for the second month's requirement, PHM should assess the compliance by inquiring about the frequency and the method of using it. Further compliance (whether following feeding instructions correctly etc.) should be checked during home visits.

Education of parents/caregivers on MMN

Before issuing the supplements, parents/caregivers should be provided adequate information on the importance of this supplementation and the nutrients supplied from the sachet, the dose and duration, method of using the contents of the sachet (things to do and things not to be done), when and where to obtain the second month's supply, how to store the unopened sachets etc. If mothers have any queries regarding the benefits or worried about side effects they should be educated on these points.

Parents/caregivers should be encouraged to maintain a calendar/record on the dates on which MMN was given to the child.

LOGISTICS

Estimating the requirement

For a given year – to cover 6, 12 & 18 month cohorts
Total number of registered births (e.g. for 2015) = A
Total estimated number of children for supplementation = $3 \times A$
No. of sachets needed for the entire course = $3 \times A \times 60 = B$
No. of sachets per box = 30
No. of boxes for the entire course = $B \div 30$

Distribution

The national requirement will be estimated by Family Health Bureau of Ministry of Health and will be distributed from FHB to Regional Medical Supplies Divisions (RMSD) island wide. The RMSDs should distribute the stocks to all MOH offices according to the distribution plan.

Responsibilities & record keeping

National level

Family Health Bureau is responsible for providing technical guidance, coordinating the implementation, monitoring and evaluation and supply of MMN for the smooth implementation of the programme.

Health Education Bureau is responsible for the development and dissemination of relevant IEC material and improving communication skills of health workers while the Medical Research Institute is responsible for conducting impact assessment surveys in the districts.

Provincial level

The PDHS is responsible for the implementation at Provincial level ensuring regular monitoring and evaluation to achieve and maintain high coverage. CCP of the Province should provide technical guidance on the programme at provincial and district level.

District level

RDHS is responsible for the implementation of the programme at district level according to the circular and guideline. MO - MCH should provide technical guidance on the programme and carry out supervision, monitoring and evaluation of the programme with the support of the staff of MCH unit. Coverage and stock

balance of each MOH area should be monitored periodically (through Annual Data Sheets and the Monthly stock return/Request Form H 1158 sent from the MOHs). MOMCH, together with the RMSD should also ensure the availability of adequate supply of MMN in every MOH area in the district by obtaining stocks from the FHB according to realistic estimates.

RMSD

Monthly Stock Return/Request Form (H 1158) should be prepared in triplicate; one copy should be sent to MO - MCH, one to FHB and the third copy should be maintained as the office copy. RMSD should collaborate with the MOMCH to ensure adequate and timely supplies.

MOH

MOH should ensure that all eligible children in the MOH area receive and consume MMN as per guidelines given.

Both Stock Balance and the coverage should be monitored by the MOH.

- i. **Stock Balance** - At MOH office the receipt of MMN should be recorded in the consumables inventory of the MOH office. Amounts issued to each of the PHMs should be recorded in a separate register (as for other nutrition supplements such as vitamin A mega dose etc.).

At the end of each month the H 1158 should be prepared in triplicate. One copy should be sent to MOMCH and one to the RMSD. The third copy should be filed at the MOH office.

- ii. **Coverage – through Annual Data Sheet**—MMN coverage for the MOH area should be reported through the Annual Data Sheet.

PHM

PHM should record the number of MMN packs received and the total number issued during the month in her consumables inventory. At the end of each month she should produce the inventory to MOH office and get further supplies accordingly.

The date of issuing the MMN sachets should be recorded in the CHDR A & B portions by the PHM at the time of issue (in the notes section of the CHDR of A & B portions for the time being until such time the CHDR is revised to enter this information in a separate cage in the future). The date/month of issuing the MMN should be recorded in the Growth Monitoring Register by an asterisk mark (*) in the box for the month in which MMN was given. Eligible children not receiving MMN sachets should be traced actively using the Growth Monitoring Register and supplied with necessary stocks.

MMN coverage of the PHM area for 6, 12 and 18 months old children should be reported to MOH office to prepare the Annual Data Sheet.

Parents/caregivers

Parents/caregivers should maintain a calendar/record on the dates on which MMN was given to the child.