health
Department:
Health
REPUBLIC OF SOUTH AFRICA

2030 NDP

SOUTH AFRICAN PRIMARY HEALTHCARE LEVEL ESSENTIAL MEDICINES LIST
CHAPTER 3: NUTRITION AND ANAEMIA
NEMLC RECOMMENDATIONS FOR MEDICINE AMENDMENTS (2016 -2018)

Medicine amendment recommendations, with supporting evidence and rationale are listed below. Kindly review the medicine amendments in the context of the nutrition and anaemia chapter

SECTION	MEDICINE	ADDED/DELETED/AMENDED
3.1.1 Anaemia, iron deficiency	Ferrous sulfate, oral	Description and dosing amended
Iron prophylaxis in preterm infants	Ferrous lactate, oral	Dose and duration amended
	Ferrous gluconate syrup, oral	Dose and duration amended
Empiric treatment for worms (this will not treat tapeworm)	Mebendazole, oral	Retained
	Albendazole, oral	Added as a therapeutic alternative
3.2.1.1 Complicated SAM	Ceftriaxone, IM, pre-referral dose	Retained for use in < 28 days of age
- If the child has any danger signs	Cefotaxime, IM, re-referral dose	Not added for use in < 28 days of age
3.2.1.2 Moderate acute malnutrition (MAM)	Vitamin A (retinol), oral	Added
	Multivitamin, oral	Added
	Mebendazole, oral **OR** albendazole, oral	Added
3.2.1.3 Uncomplicated SAM	Albendazole, oral	Added
3.2.2 Not growing well (including failure to thrive/ growth faltering)	Albendazole, oral	Added
.2.2 Not growing well (including failure to thrive/ growth faltering) *- Conditions which justify recommending that mothers do not breastfeed*	Alternative(s) to breastfeeding	Indication added
3.3 Overweight and obesity	n/a	n/a
3.4 Vitamin B deficiencies	Vitamin B co, oral	Deleted
3.4.1 Vitamin B3/nicotinic acid deficiency (pellagra) *- For severe deficiency*	Nicotinamide, oral	Dose not amended
3.4.2 Vitamin B6/pyridoxine deficiency *- For deficiency: Children*	Pyridoxine, oral	Dose not amended
- For medicine-induced neuropathy: Children	Pyridoxine, oral	Dose amended

3.1.1 ANAEMIA, IRON DEFICIENCY

Treatment: Adults

Ferrous sulfate, oral: *description and dosing amended*

Dosing: Lower dosing of oral iron recommended for anaemia:

- Open-label randomised controlled trial[1] showed that low-dose iron treatment is effective in elderly patients with iron-deficiency anaemia. Iron doses of 15 mg per day increased haemoglobin (Hb) levels from 10.0 g/dL to 11.3 g/dL; 150 mg per day increased Hb from 10.2 g/dL to11.6 g/dL

[1] Rimon E, Kagansky N, Kagansky M, Mechnick L, Mashiah T, Namir M, Levy S. Are we giving too much iron? Low-dose iron therapy is effective in octogenarians. Am J Med. 2005 Oct;118(10):1142-7. https://www.ncbi.nlm.nih.gov/pubmed/16194646

over 60 days. Adverse drug reactions (abdominal discomfort, nausea, vomiting, changes in bowel movements and black stools were significantly more common at higher iron doses).

- Aligned with Adult Hospital Level STGs and EML, 2015

Recommendations: Dosing for ferrous sulfate and ferrous fumarate be made consistent with Adult Hospital Level STGS and EML, 2015, section 2.2 Anaemia, iron deficiency.

Level of Evidence: III Disease-oriented RCT, Guidelines

Description: Amended as follows, aligned with SAMF 2016 and MCC registered package insert(s) of product(s) currently available on tender[2]:

Adults

- Ferrous sulfate compound BPC (dried), oral, 170 mg (± 55 ~~65~~ mg elemental iron) ~~8~~12 hourly with meals.

OR

Ferrous fumarate, oral, 200 mg (± 65 mg elemental iron) ~~8~~12 hourly.

o ……

Level of Evidence: III Guidelines

Children

Iron prophylaxis in preterm infants

Ferrous lactate, oral: *dose and duration amended*

Ferrous gluconate syrup, oral: *dose and duration amended*

There is limited RCT evidence for the dose and duration of iron prophylaxis for preterm infants. Other factors generally considered to determine the dose of iron administered includes breastfeeding, supplemental iron intake in formula feeds, etc. However, the latter are impractical for the local primary healthcare setting. Most guidelines recommend a dose of 2 mg/kg/day,[3] [4]and the NDoH Newborn Care Guidelines[5] recommends ferrous lactate, oral, 0.6 mL daily until 6 months of age.

The text of the STG was updated as follows:

If < 2.5 kg at birth:

- Ferrous lactate, oral, 0.6mL daily (provides ± 15 mg elemental iron) until 6 months of age.

OR

Ferrous gluconate syrup, oral, 2.5 mL daily (provides ± 15 mg elemental iron) until 6 months of age.

Empiric treatment for worms (this will not treat tapeworm)

Mebendazole, oral: *retained*

Albendazole, oral: *added as a therapeutic alternative*

Aligned with the gastro-intestinal chapter – refer to the respective NEMLC report.

3.1.1 ANAEMIA, IRON DEFICIENCY AND 3.2.1.3 UNCOMPLICATED SAM AND 3.2.2 NOT GROWING WELL (INCLUDING FAILURE TO THRIVE/ GROWTH FALTERING)

Albendazole, oral: *added*

Aligned with section 2.11.2: Helminthic infestation, excluding tapeworm, as per the attached NEMLC report dated 2 March 2017.

[2] Contract cirvular HP09-2016SD

[3] Paediatric Hospital STGs and EML, currently under review.

[4] Baker RD, Greer FR; Committee on Nutrition American Academy of Pediatrics. Diagnosis and prevention of iron deficiency and iron-deficiency anemia in infants and young children (0-3 years of age). Pediatrics. 2010 Nov;126(5):1040-50.https://www.ncbi.nlm.nih.gov/pubmed/20923825

[5] National Department of Health: Newborn care charts, 2014

3.2.1.1 COMPLICATED SAM

An external comment was received suggesting cefotaxime rather than ceftriaxone for children <28 days old. There is no other indication for cefotaxime at PHC, and in this context, it is only a single, pre-referral dose. The PHC Committee noted the cautions for ceftriaxone use in children <28 days old, but did not think it practical to include cefotaxime for this single indication. that the PHC Committee was of the opinion that the caution (as previously accepted by NEMLC) is adequate.

If the child has any danger signs:

Ceftriaxone, IM, pre-referral dose: *retained for use in < 28 days of age*

Cefotaxime, IM, re-referral dose: *not added for use in < 28 days of age*

NEMLC ratified: At the NEMLC meeting of 2 March, 2017, the revised caution box was accepted for inclusion in the PHC STGs and EML:

NEMLC report: 2 March 2017 – Chapter 10: Infections

Ceftriaxone: *caution box amended*

The caution box relating to ceftriaxone was updated for clarity purposes, and aligned with the most recent FDA warning[6].

CAUTION: USE OF CEFTRIAXONE IN NEONATES AND CHILDREN

- » If *SUSPECTING SERIOUS BACTERIAL INFECTION* in neonate, give ceftriaxone, even if jaundiced.
- » Avoid giving calcium-containing IV fluids (e.g. Ringer Lactate) together with ceftriaxone:
  - If ≤ 28 days old, avoid calcium-containing IV fluids for 48 hours after ceftriaxone administered.
  - If >28 days old, ceftriaxone and calcium-containing IV fluids may be given sequentially provided the giving set is flushed thoroughly with sodium chloride 0.9% before and after.
  - Preferably administer IV fluids without calcium contents
- » Always include the dose and route of administration of ceftriaxone in the referral letter.

Integrated Management of Childhood Illness (IMCI) Guidelines: Recommendation for ceftriaxone aligned with IMCI Guidelines[7].

Ceftriaxone pre-referral dose: Benefits of immediate administration of single dose ceftriaxone outweigh the risks of kernicterus in severely septic neonate < 28 days of age.

Level of Evidence: III Guidelines, Expert opinion

3.2.1.2 MODERATE ACUTE MALNUTRITION (MAM)

Provides guidance on moderate acute malnutrion at primary level of care. The chapter currently contains STGs for Childhood malnutrition, including not growing well/growth faltering and Severe acute malnutrition (complicated and uncomplicated).

3.2.1.2: Moderate acute malnutrition (MAM)

E44.0

Description

Children and infants older than 6 months who have either:

- » A WHZ-score between -2 and -3.
- » MUAC between 11.5 cm and 12,5cm.
- » No pitting oedema or SAM danger signs (see above).
- » Good appetite.

All cases require careful assessment for possible TB or HIV.

[6] FDA safety alert: Ceftriaxone, 21 April 2009. Available at: http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHeathcareProfessionals/ucm084263.htm

[7] National Department of Health, Integrated Management of Childhood Illness (IMCI) Guidelines, 2014.

General measures

» Provide RTUF and/or other nutritional supplements according to supplementation guidelines.
» Counsel according to IMCI guidelines.
» Regular follow-up to ensure that the child gains weight and remains well.
» Discharge with supplementation, once the following criteria are met:
  – WHZ (weight-for-height z-score) : >–2 WHZ for two consecutive visits at least one month apart and/or
  – MUAC: >11.5cm (preferable at 12cm, if MUAC used alone).
» Follow patients for at least 6 months to ensure sustained growth.

Medicine treatment

Do not repeat if child has received these during inpatient stay:

Give an additional dose of Vitamin A:

- Vitamin A (retinol), oral.

Age range	**Dose** units	**Capsule** 100 000 u	**Capsule** 200 000 u
Infants 6–11 months	100 000	1 capsule	–
Children 12 months–5 years	200 000	2 capsules	1 capsule

- Multivitamin, oral, daily.

Empiric treatment for worms:

- Mebendazole, oral.
  - Children 1–2 years: 100 mg 12 hourly for 3 days.
  - Children > 2–5 years: 500 mg as a single dose.

OR

- Albendazole oral, single dose.
  - Children 1–2 years: 200 mg as a single dose.
  - Children ≥ 2 years and adults: 400 mg as a single dose.

Referral

» No response to treatment.
» All children other than those with insufficient food intake.
» Severe malnutrition.

Level of Evidence: III Guidelines[8]

3.2.2 NOT GROWING WELL (INCLUDING FAILURE TO THRIVE/ GROWTH FALTERING)

Conditions which justify recommending that mothers do not breastfeed

Alternative to breastfeeding: *indication added*

Additional criterion added to the STG that pertains to mother(s) failing 2nd or 3rd line treatment, aligned with the Paediatric Hospital Level STGs and EML, 2017 and the PMTCT Guidelines.

The following text was added to the STG, aligned with the Paediatric Hospital Level STGs and EML, 2017:

» Infants of mothers who are failing second or third line ARV treatment (VL >1000 copies/ml) should be advised not to breastfeed.

Level of Evidence: III Guidelines

3.3 OVERWEIGHT AND OBESITY

STG included to create awareness on this common condition.

[8] National Department of Health. Integrated management of children with acute malnutrition in South Africa: Operational Guidelines, 2015.

The following was included in the chapter, aligned with WHO definitions available at: http://www.who.int/mediacentre/factsheets/fs311/en/, and cross referenced to other appropriate PHC STGs.

3.3 Overweight and obesity

Description

Overweight and obesity are abnormal or excessive fat accumulation that may impair health.
Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults (> 19 years). It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

For adults:

» overweight is a BMI ≥25; and
» obesity is a BMI ≥30.

Children aged between 5–19 years:

Overweight and obesity are defined as follows for children aged between 5–19 years:
» overweight is BMI-for-age greater than 1 standard deviation above the WHO Growth Reference median; and
» obesity is greater than 2 standard deviations above the WHO Growth Reference median.

For children< 5 years of age:

» overweight is weight-for-height greater than 2 standard deviations above WHO Child Growth Standards median; and
» obesity is weight-for-height greater than 3 standard deviations above the WHO Child Growth Standards median.

General measures

» maintain ideal weight, i.e. BMI ≤ 25 kg/m^2
» weight reduction, i.e. BMI > 25 kg/m^2
» follow a prudent eating plan i.e. low fat, high fibre and unrefined carbohydrates, with fresh fruit and vegetables
» regular moderate aerobic exercise, e.g. 30 minutes brisk walking 3–5 times/week (150 minutes/week)
» screen for hypertension, diabetes and hyperlipideamia, and manage appropriately (See Sections: 4.7: Hypertension, 9.2 Type 2 Diabetes mellitus , 4.1: Prevention of ischaemic heart disease and atherosclerosis).
» calculate risk of developing cardiovascular events and manage appropriately (See Section: 4.1: Prevention of ischaemic heart disease and atherosclerosis).

Referral

Dietician and support group, where available.

3.4 VITAMIN B DEFICIENCIES

An external comment was received that stated that the doses in Vitamin B co were sub-therapeutic, and therefore 'a waste'. The commenter suggested that the doses of each component should be specified, or that the tablets should be removed from the EML.
Each component vitamin B is available at therapeutic doses on the EML, so the PHC Committee recommend deleting the vitamin B co tablets.

Vitamin B co, oral: *deleted*
The composition of vitamin B Co strong tablets that is currently on contract HP09-2016SD, is as follows:
a) Vit B1 (Thiamine) 5mg
b) Vit B2 (Riboflavin) 2mg

c) Vit B6 (Pyridoxine) 2mg
d) Vit B3 (Nicotinamide) 20mg

National consumption of these vitamin B co tablets using supplier data for a period of 12 months:

National consumption of vitamin B co tablets:

VITAMIN B CO STRONG TABLETS SUPPLIER ORDERS DELIVERED (1 JANUARY to 31 DECEMBER 2017)

Eastern Cape	792200	R	1 282 958.98
Free State	195660	R	316 869.17
Gauteng	1461420	R	2 366 753.24
KwaZuluNatal	1412455	R	2 287 454.97
Limpopo	590870	R	956 907.31
Mpumalanga	481900	R	780 431.62
North West	512000	R	829 178.24
Northern Cape	231600	R	375 073.59
Western Cape	1000	R	1 619.49
National orders delivered	**5679105**	**R**	**9 197 246.61**

Recommendation: Vitamin B co tablets be deleted from the EML for management of vitamin B deficiencies.

Rationale: The dose of the individual vitamin B components was considered too low for management of nicotinic acid deficiency, pyridoxine deficiency and thiamine deficiency, and each component vitamin B is available at therapeutic doses on the PHC EML.

Level of Evidence: III Guidelines[9], Expert opinion

AT THE NEMLC MEETING OF 12 APRIL 2018: The NEMLC further deliberated on the removal of vitamin B co tablets from the PHC EML

NEMLC DISCUSSION:

- **3.4 VITAMIN B DEFICIENCIES:** Although vitamin B co tablets were being deleted from the PHC EML, management of a malnourished patient (HIV-infected/uninfected) with early onset neuropathy needs consideration. However, these patients would likely be treated at secondary level of care. Though, with the implementation of Universal Test and Treat (UTT) life-long multivitamins would not be required, rather initial short-term use when ART is initiated and patient is stabilised. Equity was also queried as to providing supplements to patients with advanced HIV disease, as opposed to other chronic illnesses. The NEMLC was of the opinion that general malnourishment to be addressed by other means such as a social policy to provide food parcels, rather than providing an essential medicine in the form of vitamins.

NEMCL Recommendations:

- PHC Committee recommendation of deleting vitamin B co tablets from the PHC EML be accepted.
- Adult Hospital Level Committee review whether multivitamins should be included in the Adult Hospital Level EML (specifically advanced HIV disease); as well as the need of vitamin C, oral for scurvy.
- NDoH HIV Directorate be engaged regarding the need of food parcels or other means of nutrition for undernourished patients with advanced HIV disease a opposed to providing vitamins from the essential medicines list.

3.4.1 VITAMIN B3/NICOTINIC ACID DEFICIENCY (PELLAGRA)

For severe deficiency

Nicotinamide, oral: *dose not amended*

Dosing is aligned to product formulations currently available on the market (i.e scored 100 mg tablets) and duration of therapy aligned with SAMF 2016, as follows:

[9] SAMF, 2016

Children

- Nicotinamide, oral, 50 mg 8 hourly ~~for one week~~ until resolution of major signs and symptoms.

Adults

- Nicotinamide, oral, 100 mg 8 hourly ~~for one week~~ until skin lesions heal.

Level of Evidence: III Guidelines

3.4.2 VITAMIN B6/PYRIDOXINE DEFICIENCY

For deficiency: Children

Pyridoxine, oral: *dose not amended*

Dose retained as "12.5 mg daily for 3 weeks" for pragmatic purposes, as pyridoxine is available as a scored 25 mg tablet.

Level of Evidence: III Expert opinion

For medicine-induced neuropathy: Children

Pyridoxine, oral: *dose amended*

Pyridoxine dose aligned with the Paediatric Hospital Level STGs and EML, 2017.

Level of Evidence: III Guidelines