



December 2, 2003

ADMINISTRATIVE ORDER

No. 119 s. 2003

**SUBJECT: Updated Guidelines on Micronutrient Supplementation
(Vitamin A, Iron, and Iodine)**

I. RATIONALE/BACKGROUND

Micronutrient malnutrition, particularly vitamin A, iron and iodine deficiency disorders continue to be public health problems in the country. These deficiencies lead to serious physical, mental, social and economic consequences, especially among children and women.

Micronutrient supplementation, food fortification and dietary diversification are the strategies used in addressing micronutrient deficiencies. Among these strategies micronutrient supplementation has been proven to be a cost-effective and cost-beneficial strategy to immediately correct the deficiencies and prevent the adverse consequences attributed to each deficiency. Food fortification however, is the least expensive and has long-term benefits.

During the past decade, the country made tremendous efforts on the passage of the first law on fortification which is the ASIN Law or Republic Act no. 8172 signed in 1995. The law mandates the universal iodination of salt both for human and animal consumption. Strict implementation of the law will eventually lead to the elimination of iodine deficiency disorders. However, its implementation is not without difficulties and current activities are still focused on continuous advocacy on the utilization of iodized salt to reach the goal of household utilization of 85-90 % by 2004.

The Food Fortification Law or the Republic Act no. 8976 signed in 2000 mandates the fortification of rice with iron, and sugar, oil with vitamin A and flour with vitamin A and iron. This law which will be implemented in 2004 will address the problem of iron deficiency and iron deficiency anemia (IDA) and vitamin A deficiency disorders (VADD).

Other efforts on food fortification include the Sangkap Pinoy Seal program which encourages food manufacturers to fortify their food products with 1/3 of the recommended daily allowance (RDA) of iron, vitamin A and iodine.

Food fortification offers an effective, inexpensive and sustainable strategy in the prevention and control of micronutrient deficiencies. However, until such time that food

fortification is in place, micronutrient supplementation will be pursued as the immediate or short term measure to address the immediate consequences of VADD, IDA and IDD.

Micronutrient supplementation will be provided to all priority women and children, and will be part of the routine services in all health centers nationwide. It will also be given universally during national campaigns. It shall likewise be provided in evacuation centers during emergencies, disasters and calamities. However, *large doses of Vitamin A supplementation (100,000 IU and 200,000 IU) should not be given to pregnant women.* This policy is being made to clarify questions on the administration of this supplement to pregnant women.

This Administrative Order is now being issued to update health workers in the provision of micronutrients . Multiple micronutrient supplementation is also briefly described as one intervention that could be used to address multiple micronutrient deficiencies especially among pregnant and lactating women. Explanations on the prescriptions, administrations, and delivery of supplements as well as the safety of its ingestion are also provided to clarify issues and questions regarding side effects.

IV. GUIDELINES AND PROCEDURES FOR MICRONUTRIENT SUPPLEMENTATION

A. VITAMIN A

1. Targets and Doses

1.1. Universal supplementation of vitamin A

Universal supplementation of vitamin A involves the administration of supplemental doses every six months to all infants and children aged 6 months to 71 months. This is done during regular services in all health facilities including but not limited to the implementation of Integrated Management of Childhood Illnesses (IMCI) approach, Immunization activities, Growth Monitoring and Promotion and during national campaigns such as Garantisadong Pambata in April and October.

Table 1: High dose universal -distribution schedule for the prevention of vitamin A deficiency

<i>Targets</i>	<i>Preparation</i>	<i>Dose/Duration</i>	<i>Remarks</i>
<i>Infants 6-11 months</i>	<i>100,000 I.U.</i>	<i>1 dose only</i>	<i>One capsule is given anytime during the 6-11 months but usually given at 9 months of age during the measles immunization</i>
<i>Children 12-71 months</i>	<i>200,000 I.U.</i>	<i>1 capsule every 6 months</i>	

1.2. Supplementation to High-risk children

Vitamin A supplementation is given to high-risk children because it helps re-establish body reserves drained by chronic or repeated infectious disease (e.g. diarrhea) and protects the children against severity of subsequent infections. It also reduces the complications of an existing measles infection and dramatically lowers measles morbidity and mortality.

Table 2: High dose prevention schedule for children at high-risk of Vitamin A

TARGET/ILLNESS	PREPARATION	DOSE/DURATION
Measles		
Infants (6 mos - 11 mos)	100,000 IU	1 capsule given upon diagnosis, regardless of when the last dose of VAC was given
Pre-school Children (12 mos. - 71 mos)	200,000 IU	
Severe pneumonia	100,000 IU	1 capsule given upon diagnosis, <i>except when the child was given VAC less than 4 weeks before diagnosis</i>
Persistent Diarrhea	100,000 IU	
Malnutrition	100,000 IU	
Infants (6 mos. - 11 mos)		
Severe Pneumonia	200,000 IU	1 capsule given upon diagnosis, <i>except when the child was given VAC less than 4 weeks before diagnosis</i>
Persistent Diarrhea	200,000 IU	
Malnutrition 12-71 mons.	200,000 IU	
Malnutrition 6 years to 12 years old children	200,000 I.U.	1 capsule given upon diagnosis, <i>except when the child was given VAC less than 4 weeks before diagnosis</i>

1.3. Supplementation to pregnant women and post-partum women.

Numerous studies have shown that pregnant women have an increased risk of VADD, particularly in populations where such deficiency is endemic. An increase in Vitamin A supplementation of the mother, results to an elevated Vit.A concentration of her breast milk as well as the vitamin A status of her breastfed child.

Table 3: Supplementation schedule for pregnant and post-partum women

Targets	Preparation	Dose	Duration	Remarks
Pregnant women	10,000 I.U.	1 capsule/tablet of 10,000 I.U. twice a week.	Start from the 4 th month of pregnancy until delivery	Vitamin A 10,000 I.U. should NOT be given to pregnant women who are already taking prenatal vitamins or multiple micronutrients that contain vitamin A
Post-partum women	200,000 I.U.	1 capsule of 200,000 I.U.	One dose only within 4 weeks after delivery	Vitamin A 200,000 I.U. should NOT be given to pregnant women

1.4. Treatment of Xerophthalmia

Xerophthalmia is a serious consequence of vitamin A deficiency that requires immediate treatment. It includes nightblindness, Bitot's spots, corneal xerosis, corneal ulceration and keratomalacia. Vitamin A must be administered immediately in the aforementioned cases, as prescribed in the table below.

Table 4: Treatment schedule for xerophthalmia for all age groups

TARGETS	PREPARATION	DOSE/DURATION
6-11 mos.	100,000 IU	1 capsule given immediately upon diagnosis, 1 capsule given the next day & 1 capsule 2 weeks after
12-59 months	200,000 I.U.	

Table 5: Treatment schedule for xerophthalmia for pregnant women

Targets	Preparation	Dose/Duration	Remarks
Pregnant women with nightblindness	10,000 I.U.	1 capsule /tablet once a day for 4 weeks upon diagnosis.	Do not give 10,000 I.U. if pre-natal vitamins or multiple micronutrients contg. vitamin A. are to be given. Vitamin A can be given regardless of age of gestation if pregnant woman has nightblindness.

1.5. Vitamin A Supplementation During Emergencies

Vitamin A supplementation to children during emergencies is recommended.

Emergency situations include occurrences of natural calamities like floods, typhoons and other situations that will require the use of evacuation centers. Refugees and others that are cut-off from their usual food sources or afflicted by famine constitute very-high risk groups in special need of periodic supplementation. Their access to natural sources of vitamin A is extremely poor and their risk of infectious diseases and other complicating factors is high.

Thus, persons and special groups belonging to this classification are priority groups for supplementation. *The same schedule should be followed as prescribed in table 1 (universal supplementation) and table 2 (for high-risk children)*

2. Handling and storage

Vitamin A should be stored in dark colored bottles and kept in a cool, dry place away from heat and direct sunlight to maintain its maximum potency. The container should always be labeled to include the name of the drug, dosage and its expiry date.

3. Administration of Vitamin A

Vitamin A capsule is given orally. The nipple-like projection of the capsule is cut halfway and the content is squeezed into child's mouth. There are about 6 drops in each 200,000 I.U. capsule. In instances that the 100,000 I.U. is not available, the 200,000 I.U. can be used and 3 drops from the capsule will be equivalent to 100,000 I.U. For bigger children and adults, the capsule is taken as is.

4. Safety of Vitamin A

Vitamin A is known to be safe and effective even for those who do not exhibit vitamin A deficiency. With high-dose capsule, some side effects may occur such as headache, nausea and vomiting. These are, however mild and transitory and would disappear within 24 hours even without treatment. Vitamin A in big doses is also safe even if given in an interval of 4 weeks.

Mothers of children who receive 200,000 I.U. and 100,000 I.U. of VAC should be especially advised on possible side effects.

Lower dose of vitamin A has been established safe for pregnant women. An added benefit to supplementing vitamin A in pregnant women is the improved utilization of iron.

B. IRON

1. Targets and Doses

Iron supplementation shall be provided to the following priority groups with corresponding doses:

1.1 Pregnant and lactating women

The high physiological requirement for iron in pregnancy is difficult to meet with most diets. Therefore, pregnant women must take iron supplements in almost all contexts. It is recommended that supplementation must start as soon as pregnancy is diagnosed. Intake of iron supplements should at least be for 6 months during the pregnancy period. Where the prevalence of anemia in pregnant women is high, supplementation should continue into the post partum period to enable women to acquire adequate iron reserves. Lactating women should take the supplements for 3 months after delivery.

Table B1: Iron supplementation to Pregnant and Lactating Women

Targets	Preparation	Dose/Duration	Remarks
Pregnant women	Tablet (preferably coated) containing 60 mg. elemental iron (EI)with 400 mcg. Folic acid	1 tablet once a day for 6 months or 180 days during the pregnancy period. Or 2 tablets per day (120 mg. EI) if pre-natal consultations are done during the 2 nd and 3 rd trimester.	A dose of 800 mcg. Is safe for pregnant women.
Lactating women	Tablet(preferably coated) containing 60 mg. EI with 400 mcg. Folic acid	1 tablet once day for 3 months or 90 days.	

1.2. Infants 6-11 Months of Age

Infants need a relatively high iron intake because they are growing very rapidly. Infants are normally born with plenty of iron. However, beyond six months of age, iron content of breastmilk is not sufficient to meet many infant's requirements and complementary foods are usually low in iron.

Low-birth weight infants are born with fewer iron supply and are at high risk of iron deficiency even if exclusively breastfed. Supplementation starts at two (2) months of age. Iron requirements of low-birth weight infants cannot be met from the iron in the breast milk because of rapid growth rate during this period.

It is therefore necessary for this group to have iron supplements.

Table B2: Iron supplementation to infant 6-11 months of age

TARGETS	PREPARATION	DOSE/DURATION
Low birth Weight	Drops: 15 mg elemental iron /0.6 ml	0.3 ml once a day to start at two months of age until 6 months when complementary foods are given.
Infants 6-11 months	Drops containing 15 mg. Elemental iron/0.6 ml.	0.6 ml once a day for 3 months

1.3. Other Population Groups

Other population groups may also suffer its consequences and may benefit from iron supplementation programs. Anemic and underweight children should take iron supplements to correct existing anemia and prevent it from becoming severe.

Adolescents and older persons are both at risk of developing iron deficiency and iron deficiency anemia .. Supplementation to this age group is especially important particularly for adolescents where pregnancy could occur.

Table B3: Iron supplementation to preschool and school children

TARGETS	PREPARATION	DOSE/DURATION
Children 1-5 years old	syrup containing 30 mg. Elemental iron/5 ml	1tsp. once a day for 3 months or 30 mg once a week for 6 months with supervised administration
Children 6-11 years old anemic and underweight	syrup containing 30 mg. Elemental iron/5 ml	2tsp. once a day for 6 months

Table B4: Iron supplementation to other population groups

TARGETS	PREPARATION	DOSE/DURATION
Adolescent Girls (10-19 yrs)	tablet containing 60 mg. Elemental iron with 400 mcg folic acid (coated)	One tablet once a day
Older Persons	tablet containing 60 mg. Elemental iron with 400 mcg. folic acid (coated)	One tablet once a day

1.4. Complementary Parasite Control Measures

Iron deficiency is the direct cause of severe anemia. Other causes include parasitic infestations like hookworm, trichuris, malaria and schistosomiasis and other infections. Specific population in these highly endemic areas should also be given iron supplementation together with environmental sanitation and personal hygiene control measures.

In areas where hookworm and trichuris are endemic, anthelmintic treatment to adults and children may be necessary to combine with iron supplementation.

Table B5: Iron supplementation to children and adults in Schistosomiasis and Malaria Endemic Areas

TARGETS	PREPARATION	DOSE/DURATION
Children 5-9 years old in Schistosomiasis and Malaria endemic areas	syrup containing 30 mg. Elemental iron/5 ml	Two tsps. once a day for 2 months
Children aged 10-15 years old & adults in malaria & schisto endemic areas	tablet (preferably coated) containing 60 mg. EI 400 mcg. Folic acid	1 tablet once a day for 2 months

2. Handling and Storage

Iron supplements should be in dark colored containers and stored in a cool dry place away from direct heat and sunlight and not within reach of children. When transferring iron tablets from the original container, make sure that the fingers do not touch the tablets to prevent the growth of molds. The container should also be labeled to include the name of the drug and its expiry date.

3. Safety

There is no risk of toxicity to iron/folate supplements when taken at the prescribed dose. Intake of iron also produces minor undesirable gastrointestinal side effects in some individuals such as epigastric discomfort, nausea, vomiting, constipation, and diarrhea. The frequency of these side effects is directly related to the dose of iron.

In cases of gastrointestinal intolerance, the dose of iron may be reduced and gradually increased until the full dose is reached and is well tolerated. It is also advised that the iron supplements be taken with or after meals and at bedtime.

C. IODINE

Iodine supplementation and salt iodization are the short and long term intervention measures respectively to correct the consequences of iodine deficiency disorders. While salt iodization is the reason for eliminating IDD in some countries, there are instances that iodine supplementation is necessary because of the urgency of the situation that requires immediate intervention. In such situations, the following criteria have to be met for areas to qualify for supplementation :

Criteria for Areas to Qualify for Iodine Supplementation

- a. Urinary Iodine Excretion (UIE) of less than 50ug/L in more than 20% of the population.
- b. Goiter prevalence among schoolchildren is greater than 5%.
- c. Prevalence of goiter among males.

1. Targets

The following are the identified target population groups for iodine supplementation as prioritized:

1.1. Women of reproductive age

Women of reproductive age is the first priority for iodine supplementation. Among pregnant women, iodine deficiency may be associated with complications such as hypothyroidism, gestational abortion, increased first trimester abortions, abnormal fetal position and stillbirths. In addition, the hypothyroidism, infertility and fetal loss may have adverse effects on her quality of life and her role in the family and community. A child with mental and physical disorders, resulting from iodine deficiency may require long-term care taking away time and resources that could be used otherwise. Iodine supplementation is best if given before pregnancy. (IDD Newsletter, Feb. 2003, JTDunn & F. Delange, ICCIDD)

Pregnant women should also be given iodized oil especially in identified iodine- deficient areas. Pregnant women given iodized oil (average age of gestation was 28 weeks) have showed significant increase in birth weights and infant survival.

1.2. Children of school age

Children of school age are also a priority for iodine supplementation. These children have been shown to have increased demand for iodine because of growth spurts occurring during this period. There is also risk in developing hypothyroidism. It is also among this population group that the intake of iodine sources from food could be very poor. The reduction of intelligence quotients (IQ) points among iodine deficient is detrimental to the child's school performance.

1.3. Adult males

A population with high prevalence of goiter among adult males further indicates the severity of the problem of iodine deficiency in the community. Therefore, adult males with or without goiter should also be given iodine supplements.

Table C1 Iodine supplementation to specific population groups

TARGETS	PREPARATION	DOSE/DURATION
Women 15-45 years old	Iodized oil capsule with 200 mg.iodine	1 capsule for 1 year
Children of school age	Iodized oil capsule with 200 mg. Iodine	1 capsule for 1 year
Adult Males	Iodized oil capsule With 200 mg. Iodine	1 capsule for 1 year

2. Safety of Iodized Oil Capsule

There has been no report of side effects due to intake of oral iodized oil. However, there are clinical conditions that may worsen with the intake of iodized oil capsule. They are : (1) toxic goiter (2) untreated tuberculosis (3) recent hemorrhage. Hence, the iodized oil capsule should not be given to individuals with the above clinical conditions.

D. Multiple Micronutrients

(Ref : Administrative Order No. 96, s, 2000 , April 3, 2002)

Multiple micronutrient supplementation is one strategy that can be used to address micronutrient deficiencies of women in developing countries. However, its cost effectiveness/efficiency needs further study because adding one nutrient is increasing the cost considering that women economically deprived are the micronutrient deficient. More studies could also be done comparing the multiple micronutrients vs. iron and vitamin A alone in improving maternal and morbidity rates and reducing the incidence of low birth weights.

1. Target

1.1. Pregnant women

The requirement for micronutrients increases substantially during pregnancy and lactation which cannot be met by diet alone. The average Filipino diet is generally short of the recommended daily allowances so that other micronutrients like Zinc, Selenium, etc may also be found deficient, hence, multiple deficiencies may occur.

Documented benefits (foreign studies) from taking micronutrients by pregnant women include: reduced incidence of low birth weights, reduced maternal mortality and mortality rates.

1.2. Lactating women

Taking of multiple micronutrients during lactation at least for 3 months post-delivery will improve the nutrient status of breast milk

Table C2 Multiple micronutrient supplementation to pregnant & lactating women

Targets	Preparation	Dose/Duration
Pregnant women	Multiple micronutrient	1 capsule a day to start as soon as pregnancy is diagnosed and to continue until delivery
Lactating women	Multiple micronutrient	1 capsule a day for about 3 months.

The micronutrient supplement has the following composition :

Vitamin A	800 RE or 2,640 I.U.
Vitamin B1	1.4 mg
Vitamin B2	1.4 mg
Vitamin B6	1.9 mg
Vitamin B12	2.6 ug
Niacin	18 mg
Vitamin C	70 mg
Vitamin D	200 mg
Vitamin E	10 mg
Copper	2mg
Folic Acid	400 mcg.
Iodine	150 mcg
Iron	30 mg.
Selenium	65 mcg
Zinc	15 mg

- 1 RE = 3.3 I.U. Vitamin A

Literature review showed that the levels of nutrient contained in this multiple micronutrient preparation are the minimum daily recommended nutrient levels for women of reproductive age.

VI. IMPLEMENTING MECHANISM

Based on the provisions of the Local Government Code of 1991, the implementation of public health programs is now the responsibility of the LGUs. Therefore, together with the DOH Central Office and the Centers for Health Development, the procurement and distribution of vitamin A, iron and iodine to all barangays is the responsibility of PHOs and MHOs.

1. Procurement

The Central Office of the Department of Health procures the 200,000 I.U vitamin A capsules for its twice-a-year nationwide distribution campaign for the 12-71 months old. Iron tablets and iodized oil capsule are also procured when funds are available and when necessary. The DOH usually procures through UNICEF, subject to the usual procedure and requirements prescribed both by the government and UNICEF.

Because of logistic constraints, the Central Office cannot procure the other vitamin A doses, iron tablets and syrup. Invoking the provisions of the LGC of 1991, the DOH therefore requires the Local Government Units to provide budget for the procurement of the said micronutrients including iodized oil capsules. This will augment the supply provided by the Department of Health and ensure the availability of the supplement in the delivery of regular services in all health centers.

Procurement can be made locally through local distributors provided that the specification of VAC prescribed by the Central Office are followed. LGUs are also encouraged to have procurement transactions with the following distributors provided at the appendix of this Order. (Appendix 1)

2. Delivery and Distribution of micronutrients

All the necessary micronutrients should be available in all distribution points such as hospitals, main health centers, barangay health stations, and health and nutrition posts following the normal structure of health system . All RHUs and BHSs personnel are thus required to participate in this activity. The BHWs and other volunteers may give the supplements as long as they have been trained and supervised by a midwife, public health nurse or physician.

Clustering per purok of barangays and masterlisting of all target groups per barangay may be necessary to facilitate distribution.

B. How to procure vitamin A capsules , iron or iodized oil capsules preparation from UNICEF and other sources (For LGUs)

- a. Compute for requirements
(UNICEF requires a minimum order of commodities costing \$ 4,000.00)
- b. Request for quotation from UNICEF Philippines.
- c. Upon receipt of quotation, confirm order
- d. Make advance payment in dollars to designated bank. UNICEF processes papers only upon receipt of payment. To be allowed advanced payment, request for exemption from Malacañang, invoking PD 1445.
- e. The ordering LGU/Office is responsible for the delivery and distribution of the commodity to their areas.

Some projects provide 100% of the VAC requirement to all target groups in their areas of coverage like the ECD project in Region VI VII, and X, and the UNICEF Country Program for Children (CPC) V project which covers 21 provinces and 4 cities.

3 Specific Roles and Responsibilities

The following services/units shall be responsible in program implementation.

A. DOH Central Office

1. Allocate funds for the procurement of vitamin A capsule for the universal supplementation.
2. Update policy directions and management guidelines in the implementation of micronutrient supplementation.
3. Advocate to LGUs to allocate funds to augment supply of the micronutrients and to ensure their availability at all times at health centers.
4. Assist LGUs in procuring supplements by providing a list of local suppliers accredited by the Central Office.
5. Develop/update prototype IEC materials for production
6. Monitor the micronutrient supplementation program, assess and evaluate accomplishment.

B. Center for Health and Development

1. Provide budgetary allocation for the procurement of micronutrients like vitamin A capsules, iron tablets/syrup/drops to ensure their availability in the delivery of health services.
2. Conduct proper orientation of health personnel on the micronutrient supplementation program and its policies for appropriate compliance and implementation.
3. Conduct and facilitate integrated nutrition education activities to its health personnel and LGUs.
4. Record and report and assess accomplishments particularly compliance, coverage and impact.
5. Submit accomplishment reports to CO.

C. Hospitals

1. Integrate this Administrative Order in their treatment protocol.
2. Provide budgetary allocations for the procurement of micronutrients like vitamin A, and iron.
3. Participate in nationwide campaigns like Vitamin A Day or Garantisadong Pambata (GP)
4. Conduct orientation of hospital personnel on the micronutrient supplementation program, its policies for appropriate compliance and implementation.
5. Conduct integrated nutrition education activities to its patients through the public health units..
6. Coordinate with the provincial or municipal health office especially for the referral of cases needing attention and follow-up.

D. Local Health Offices

As the implementing agencies for health services by virtue of the LGC of 1991, Local Health Offices shall:

1. Appropriate the necessary funds in support of the advocacy , nutrition education activities, training of health personnel and actual provision of logistics for micronutrient supplementation.
2. Coordinate with other organizations and agencies in the area, e.g. local nutrition committee, for resource generation and mobilization
3. Maintain recording and reporting and assess accomplishments particularly compliance, coverage and impact.
4. Submit accomplishments and reports to the CHDs

5. Recording and Monitoring

- A. The supplementation of vitamin A, iron and iodine to identified target groups should be properly recorded in all health centers in any one of the following:
 1. Target Client List (TCL), found in all health centers.
 2. Growth charts (i.e., ECCD card or UFC cards) during growth monitoring of all preschoolers
 3. Home-Based Maternal Record (HBMR) for pregnant and post-partum women
 4. Patient's records for other targets
- B. Masterlisting of all target groups and monthly updating of the master list are encourage to facilitate identification and follow-up of recipient.
- C. For iron supplementation, monitoring of compliance is important. This can be done by recording the intake of iron tablets and reported side effects.

VII. REPEALING CLAUSE AND EFFECTIVITY

This order shall supersede and repeal A.O. no. 3-A s 2000 : Implementing Guidelines on Micronutrient Supplementation . This shall take effect immediately.


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Secretary of Health

Signed A.O.
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