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## NATIONAL VITAMIN A POLICY GUIDELINES



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NATIONAL MATERNAL AND CHILD HEALTH CENTER

MINISTRY OF HEALTH

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## PREFACE

Although Cambodia has seen a decrease in under-five mortality the rate remains unacceptably high with infant mortality 65 per thousand live births and under-five mortality 83 per 1000 live births<sup>1</sup>. The Cambodia Child Survival Strategy (CCSS) outlines Cambodia's approach to reducing child mortality and achieving the Cambodia Millennium Development Goal 4, which aims to reduce under-five mortality to 65 per 1000 live births by 2015.<sup>2</sup> Achieving universal coverage of a limited package of essential evidence based cost effective interventions will have a positive impact on child mortality<sup>3</sup>. **Vitamin A supplementation is one of the twelve monitored interventions of the Child Survival Strategy.**

Vitamin A deficiency is a common problem in Cambodia and a major contributor to under-five mortality. Vitamin A supplementation dramatically improves conditions for survival, health and development for children aged 6-59 months. Vitamin A reduces the risk of measles mortality by about 50%, diarrhea by about 40% and overall mortality by 23%<sup>4</sup>.

Although Cambodia has been implementing Vitamin A supplementation activities since 1996 and the Health Information System (HIS) data reports high coverage in some districts, there are wide variations in coverage between twice yearly distribution rounds and between districts and provinces. The most recent Cambodia Demographic Health Survey (CDHS 2005) reported 35% of children aged 6-59 months received vitamin A in the past six months and 27% of women received vitamin A post-partum. The Cambodian government's goal is to reach 90% coverage of vitamin A for children aged 6-59 months by 2015.

Cambodia now faces the critical challenge of increasing the coverage of Vitamin A Supplementation for children and post-partum women and coordinating both donor and partner support to move to achieving a Sustainable National Standardized Vitamin A Program. The Micronutrient Technical Working Group chaired by the NNP have revised and updated the National Vitamin A Policy Guidelines using the latest scientific evidence and country program experience. This updated policy guidelines document replaces the National Vitamin A Policy of February 2000

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<sup>1</sup> Cambodian Demographic and Health Survey, 2005

<sup>2</sup> Cambodia Millennium Goals 2000

<sup>3</sup> Cambodia Child Survival Strategy 2005

<sup>4</sup> Beaton et al, 1993

## 1. PROMOTING CHILD SURVIVAL: WHY VITAMIN A IS IMPORTANT

Vitamin A is essential for protection against common childhood diseases. Vitamin A is also needed for good vision and normal growth. Vitamin A deficiency (VAD) occurs when diets have insufficient vitamin A for the basic needs of growth and development and for periods of added stress due to illness.

Vitamin A deficiency is a major contributor to child mortality. Key messages for Vitamin A programs need to be updated from those of vitamin A for prevention of blindness alone. Resistance to common childhood diseases such as diarrhea and respiratory infections occurs long before symptoms of night blindness are reported. Weakened immune function from malnutrition accompanied by disease increases the risk of death.

Improving the vitamin A status of deficient children has been shown to improve resistance to disease and reduce illness and mortality significantly and at low cost. The elimination of vitamin A deficiency is essential to improving the survival, growth and development of children and the well-being of children and their families. Everyone has a right to good vitamin A nutrition.

### **Population groups at special risk of VAD and its complications:**

- Children under five years of age;
- Pregnant women - because of the extra requirements during pregnancy and lactation;
- Sick children and adults.

### **Benefits of adequate vitamin A intake include:**

- Reduced overall child mortality by 23%;
- Reduced severity of infectious illness, especially measles and chronic diarrhea – with reduction in rates of hospital admissions and outpatient consultations;
- Reduced prevalence of anemia;
- Prevention of vitamin A deficiency blindness;
- Reduction of maternal morbidity and mortality around the time of childbirth;

Today, worldwide 127 million pre-school children and 7 million pregnant women are vitamin A deficient. Yet, supplementation with vitamin A capsules is the single most cost-effective health intervention according to the World Bank and other global health experts<sup>5</sup>. It only takes two doses a year to enhance disease

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<sup>5</sup> Copenhagen Consensus 2004

resistance capacity, reduce under-five mortality and prevent blindness – at a cost of approximately \$1.

## 2. CAMBODIA'S VITAMIN A PROGRAM

Two commonly used Khmer terms describing night blindness - “Kwak moin” (chicken blindness) and “lo’nget moin” (evening chicken) - indicate that Khmer people are very familiar with the signs of advanced severe vitamin A deficiency.

Several surveys conducted since 1993 (MoH and HKI 1993; UNICEF/WFP, 1998; MoH and HKI 2000) demonstrated that Vitamin A deficiency is a serious public health problem in Cambodia. The National Micronutrient Survey found that seven of the ten rural provinces had a prevalence of night blindness greater than 1%, which is the first clinical sign of VAD and the prevalence of low serum retinol levels ( $<0.70 \mu\text{mol/L}$ ) among children under five was 22.3%.

With the adoption of the National Vitamin A Policy in August 1994, the MoH launched a national supplementation program. From 1996 Vitamin A supplementation activities were conducted as part of national and sub-national immunization days and in 1997 during routine EPI outreach

Universal distribution three times per year (March, July and November) as part of routine EPI outreach services increased in 1998 to cover 14 provinces, reaching 65% of the national population, and was implemented nationwide from March 1999. Distribution of vitamin A supplements also occurred through routine outreach and through supplemental immunization activities (SNIDs) and through polio sub-national immunization days (SNIDs).

Since 2001, the NNP with support from partner organizations provided vitamin A to target populations within their assigned program areas. By 2006, this working model succeeded in covering 72 of the 77 health operational districts.

In 2006 the NNP initiated discussions with partner organizations to produce a national coordinated sustainable vitamin A supplementation program. This coordinated program will include

- Integration of the vitamin A supplementation training into the National Minimum Package of Activities Training Curriculum (MPA 10),

- Creation of one standard system for program monitoring and evaluation and strengthen the quality of recording and reporting of HIS Vitamin A data and
- Integration of Vitamin A supplementation activities and budget allocation into provincial and district Annual Operation Plans (AOPs).

### 3. POLICY FRAMEWORK FOR REDUCTION OF VITAMIN A DEFICIENCY

Through ratification of the Convention on the Rights of the Child in 1992, the Royal Government of Cambodia committed to achieve the World Summit Goals for children, including the elimination of vitamin A deficiencies by the year 2000.

The National Vitamin A Policy and Implementation Document adopted by the MoH in August 1994 recognized vitamin A deficiencies as a public health problem and reaffirmed the commitment of the MoH to eliminate vitamin A deficiencies through defined operational strategies and protocols.

The National Plan of Action for Nutrition adopted in January 1997 was a consolidation of the international commitments made at the 1990 World Summit for Children, the 1992 International Conference on Nutrition and the 1996 World Food Summit. Elimination of vitamin A deficiencies is one of the priority areas for action.

The Cambodian Nutrition Investment Plan adopted in March 1998 provided a strategy framework for an investment plan for nutrition. Over-arching strategies are community-based approaches emphasizing actions at household level with supportive national level interventions, including public education and universal supplementation of vitamin A capsules to groups at special risk.

The National Seminar on Food Security and Nutrition, chaired by the Prime Minister in April 1999, adopted resolutions supporting elimination of vitamin A deficiency (Resolution 7).

In 1999 the National Vitamin A Policy was revised to recommend 1 capsule with 100,000 IUs (blue capsule) for children 6-11 months and 1 capsule with 200,000 IUs (red capsule) for children 12-59 months every six months. Post-partum women should receive 1 capsule with 200,000 IUs (red capsule) in the eight weeks after delivery.

In 2002, revisions were made to the National vitamin A policy to allow the health center staff to carry VACs with them on outreach EVERY month for post-partum women within 8 weeks of delivery.

In 2006 the sub-degree for the marketing of breast milk substitutes was passed and the MoH developed a comprehensive BCC strategy to promote exclusive breastfeeding for the first six months of the infant's life and continued breastfeeding for two years or more. Support for breastfeeding is a key element of reducing vitamin A deficiency among young children.



### MAIN STRATEGIES FOR ELIMINATION OF VAD

A variety of several strategies are needed to treat and prevent VAD:

- Vitamin A capsule supplementation using multiple channels
- Dietary modification - promoting behavior change for better nutrition
- Food fortification
- Prevention and timely treatment of disease

### STRATEGY 1: VITAMIN A CAPSULE SUPPLEMENTATION

#### Universal supplementation

Universal supplementation (periodic distribution of vitamin A capsules) of children and post-partum women is the main strategy in Cambodia due to the high rates of VAD.

The main operational strategies for vitamin A supplement distribution are:

- Vitamin A supplementation of post-partum women in the 6 weeks after delivery through health center visits and outreach activities.
- Vitamin A supplementation for children 6-59 months twice per year (during the months of May and November) as part of regular outreach services in combination with mebendazole distribution,
- Screening and administration at any contact with routine health services, including immunization and maternal health services,
- Supplemental distribution during campaigns when VAC distribution is feasible, such as National Immunization Days, school health days\* and campaign-like activities in remote areas (such as bed-net distribution operations).

Experiences from many countries have shown that vitamin A supplementation in the recommended doses is safe. However, women of reproductive age (here defined as >12 years of age) should never receive high-dose vitamin A capsules (200,000 IU) - due to the risk of danger to the fetus if the woman is pregnant. The only exceptions

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\* The National School Health Task Force will develop national school health policies. The current recommendation for school supplementation is to provide vitamin A (200,000 IU) to all children of school-age (boys and girls) up to the age of 12 years, if they have not received a dose in the previous four month.

are supplementation to post-partum women up to six weeks after delivery and treatment for severe xerophthalmia.

Protocols for universal vitamin A supplementation are detailed in annex 1.

Disease-targeted supplementation

Disease-targeted supplementation protects individuals at highest risk of VAD-related disease and complications.

Priority target groups are:

- Children 6 months to 12 years with:
  - clinical measles or at risk of contracting measles;
  - severe protein-energy malnutrition (PEM);
  - persistent diarrhea (diarrhea > 14 days).
- Individuals (especially women of reproductive age) with clinical manifestation of VAD (night blindness, xerophthalmia).

Women of childbearing age pregnant or not with signs of xerophthalmia (acute corneal lesions) should be treated following the regular protocol, because the consequences of untreated VAD for the woman and the fetus are far more serious than the possible negative effect of a high dose of vitamin A.

The main operational strategies for disease-targeted supplementation are:

- Diagnosis of disease and administration of vitamin A during consultation in health centers and referral hospitals;
- Diagnosis of disease and administration of vitamin A during measles outbreak investigation and response.

Protocols for disease-targeted vitamin A supplementation are detailed in annex 2.

## STRATEGY 2: DIETARY MODIFICATION - PROMOTING BEHAVIOUR CHANGE FOR BETTER NUTRITION

Vitamin A is found in foods of animal origin such as liver, milk and milk products, fish and meat and from orange fleshed fruits and vegetables and dark green leafy vegetables.

A broad-based multi-sectoral approach is needed to promote better care and feeding practices in the home. In addition to Ministry of Health staff, influential partners include the Ministry of Rural Development (MRD), the Ministry of Women's and Veteran's Affairs (MOWAVA), the Ministry of Education, Youth and Sports (MOEYS), supporting international organizations and NGOs.

Dietary modification strategies include:

- Public education to raise awareness about the ill-effects of VAD and to increase consumption of vitamin A rich foods.
- Breastfeeding promotion, protection and support to reduce disease and prevent VAD. The early initiation of breastfeeding, the promotion of exclusive breastfeeding until the infant is six months old are critical for prevention of VAD.
- Community-based food and education approaches - including strengthening of health and nutrition practices in families, food production (home gardening and animal husbandry).
- Strengthening clinical and counseling skills on micronutrient deficiencies and the importance of a healthy diet by health workers through the Integrated Management of Childhood Illness (IMCI) strategy adopted by the Ministry of Health and through the implementation of the Minimum Package of Activities In Service Integrated Nutrition Training In (MPA 10).

### STRATEGY 3: FOOD FORTIFICATION

Food fortification has received increasing attention as a strategy to prevent and control micronutrient deficiencies. The NMCHC/MoH in collaboration with relevant partners will explore the potential of food fortification with vitamin A.

### STRATEGY 4: DISEASE PREVENTION

There is a significant correlation between vitamin A deficiency and overall disease burden. Public health measures such as immunization and sanitation services that address diarrhea diseases, measles, helminth infections and malnutrition contribute both directly and indirectly to VAD reduction and will be strengthened.

## 4. VITAMIN A SAFETY

High-dose supplementation of vitamin A is safe when administered in recommended dose. Minor side-effects may occasionally occur but are transitory and do not require specific treatment.

Toxicity of vitamin A from excessive ingestion is an extremely minor concern compared to the devastating effects of vitamin A deficiency. Even if a child is inadvertently given twice the recommended dose of vitamin A within a short period of time, any side effects that may occur will be minor, will resolve themselves without specific treatment and will not have any long-term consequences.

Combination of high dose supplementation and daily intake of vitamin A fortified foods is not associated with any risk of toxicity.

#### Supplementation to children

Supplementation of high-dose vitamin A capsules is without risk when the four month recommended<sup>10</sup> interval between age-specific doses is respected. Doses as low as 25,000 IU given to infants under 6 months with DPT vaccines can provoke a bulging fontanel in up to 10% of children, but this condition resolves itself rapidly and has not been found to be associated with any long-term effects. Supplementation to children below six months is currently not recommended.

#### Supplementation to women of reproductive age

The major risk of high-dose vitamin A supplementation is the potential teratogenicity during the early stages of pregnancy. This is the reason why women of reproductive age (here defined as >12 years) should never receive high-dose vitamin A capsules, except within six weeks after delivery (the woman is still in a non-ovulating period) and for treatment of severe signs of xerophthalmia.

## 5. PROGRAM MANAGEMENT

The National Council for Nutrition chaired by the Ministry of Planning is responsible for monitoring the implementation of the National Nutrition Plan of Action, including progress towards the CMDG (goal #4).

The National Nutrition Program (NNP), MoH, is responsible for formulating policies and operational strategies, developing technical guidelines/protocols and for coordinating and monitoring vitamin A supplementation activities. An action plan should be prepared each year together with concerned MoH departments and external partners, detailing strategies and assigning responsibilities.

Vitamin A capsules are requested by health centers and Operational Districts through the regular Essential Drugs management system and are distributed by the Central Medical Stores.

## 6. PRIVATE SECTOR

High-dose vitamin A capsules (i.e. products containing > 25,000 IU/unit) must not be sold in pharmacies and drug stalls due to increased risk of misuse and danger to the clients. The private sector should be encouraged to conform to national policies and guidelines.

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<sup>10</sup> Cambodia IMCI Revised Guidelines 2007

## 7. VITAMIN A SUPPLEMENT PREPARATIONS

The NNP will monitor the procurement of vitamin A supplements. All supplements will be procured through recognized producers of high quality capsules according to international recognized standards. The capsules must be produced and packaged in compliance with the global WHO recommendations. The international recommendation for presentation of vitamin A capsules is the following.

200,000 IU	Red capsule
100,000 IU	Blue capsule

## 8. MONITORING AND EVALUATION

The NNP has the main responsibility for monitoring and evaluating the effectiveness and impact of the VAD program implementation.

VAD prevalence is assessed through surveys, which provide data for monitoring change in vitamin A status over time and evaluating overall impact of VAD reduction programs.

The core indicators are:

- Night blindness prevalence during the last pregnancy,
- Night blindness prevalence in children,
- Biochemical indicators such as serum retinol.

Identifying high-risk areas and target populations for interventions

As long as U5MR > 70, the whole country should be considered to be at high risk for vitamin A deficiency. As surveys are resource-intensive, it is in addition important to assess factors that can be used as proxy for VAD in order to identify priority areas for interventions, such as nutrition and diet-related indicators, illness-related indicators (including ocular manifestations of VAD and measles case fatality rate), immunization coverage as well as socio-economic demographic and ecological indicators.

## Monitoring VAD control programs

Process indicators indicating program effectiveness should be selected and data collected for each key program strategy (supplementation, dietary modification, food fortification, general disease prevention).

The core indicators are:

- Vitamin A supplementation in the past six months with the appropriate quantity of vitamin A for children aged 6-59 months
- Post-partum vitamin A supplementation

The sources of data on vitamin A supplementation come from:

- The Health Information System (HIS)
- Regular nationally representative surveys (CDHS)
- Data collected during measles outbreak response (data from PEU).

## Recording and reporting tools

Health workers should always screen those in the target populations for past doses of vitamin A capsules and possible eligibility for a new dose. The use and retention of family-held recording cards (Yellow Card, Mother's Book) needs to be reinforced to ensure improved monitoring of vitamin A supplementation and avoid overdosing. The minimum interval for high-dose supplementation is once every four months. Women who have not attended antenatal care during their pregnancy may not have a Mother's Book or pink card (mother's vaccination record of tetanus toxoid). In this case the health worker should provide the mother with a Mother's Book and record the Vitamin A supplement on the card.

Supplementation of vitamin A capsules in health facilities and during outreach is monitored through the Health Information System (HIS). Tally sheets are used during immunization campaigns.

## Annex 1 - Protocols for universal vitamin A capsule supplementation

Screen all children and mothers coming for any reason to health centers or referral hospitals.

Give vitamin A to children (6-59 months) that have not received a dose in the previous four month	Children 6-11 months	100,000 IU
	Children 12-59 months	200,000 IU
Give vitamin A <u>once</u> to mothers, irrespective of their mode of infant feeding, up to six weeks after delivery - if they did not receive vitamin A at delivery.		200,000 IU

Screen all children during outreach services around May and November

Give vitamin A to children (6-59 months) that have not received a dose in the previous four month	Children 6-11 months	100,000 IU
	Children 12-59 months	200,000 IU

Screen all post-partum women within 6 weeks after delivery during any outreach services every month throughout the whole year

Give vitamin A <u>once</u> to mothers, irrespective of their mode of infant feeding, up to six weeks after delivery - if they did not receive vitamin A at delivery.	200,000 IU
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- Before giving vitamin A, always check if the child already has received a dose in the previous four month. If yes, do not give a second dose.
- The health worker should always explain to the care taker that the child is receiving Vitamin A; and that Vitamin A strengthens the child's resistance to common childhood illnesses and reduces child mortality.
- Always record on the child's Yellow Card and on the Mother's Book the dose and the date VAC was given.
- Remind the mother/caretaker to keep the health card in a safe place and always to bring it when going to the health centre or hospital.

## SPECIAL DISTRIBUTION OF VITAMIN A SUPPLEMENTS

### During measles outbreaks

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Give one preventive dose of vitamin A to all children 6 months – 12 years living in areas of measles outbreak that have not received a dose in the previous four months	Children 6-11 months	100,000 IU
	Children 1-12 years	200,000 IU

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Give vitamin A treatment to all children with active measles or with measles within the past three months, who have not received a dose in the previous four months	Children 6-11 months	Day 1: 100,000 IU
		Day 2: 100,000 IU
	Children 1-12 years	Day 1: 200,000 IU
		Day 2: 200,000 IU

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Record these doses on the Yellow Card of the child (when available) and on the special measles outbreak response tally sheet.

### During supplementary immunization activities such as SNIDs/NIDs

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Give vitamin A to children (6-59 months) that have not received a dose in the previous four months	Children 6-11 months	100,000 IU
	Children 12-59 months	200,000 IU

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Give vitamin A <u>once</u> to mothers, irrespective of their mode of infant feeding, up to six weeks after delivery - if they did not receive vitamin A at delivery.	200,000 IU
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Record these doses on the tally sheet.



## Annex 2 - Protocols for disease-targeted vitamin A supplementation

Treatment of xerophthalmia (night blindness and active corneal lesions)

### All age groups except women of reproductive age (>12 years)

Children	Immediately:	50,000 IU
<6 months of age	Next day:	50,000 IU
	At least 2 weeks later:	50,000 IU
Children	Immediately:	100,000 IU
6-11 months	Next day:	100,000 IU
	At least 2 weeks later:	100,000 IU
Individuals 12 months and older	Immediately:	200,000 IU
	Next day:	200,000 IU
	At least 2 weeks later:	200,000 IU

### Women of reproductive age (>12 years)

With night-blindness or Bitot's spots	Daily for 30 days	10,000 IU
With severe signs of active xerophthalmia (acute corneal lesion), whether or not pregnant	Immediately:	200,000 IU
	Next day:	200,000 IU
	At least 2 weeks later:	200,000 IU

Individuals with acute corneal lesions must be referred to a specialized unit as an emergency.

## Treatment of measles

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Give vitamin A treatment to all children with active measles or with measles within the past three months.	Children 6-11 months	100,000 IU on Day 1
		100,000 IU on Day 2
	Children 1 – 12 years	200,000 IU on Day 1
		200,000 IU on Day 2

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## Treatment of persistent diarrhea and severe malnutrition

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Give vitamin A to all children with chronic or severe malnutrition, if the child has not received vitamin A in the <b>previous four months</b> .	Children 6-11 months:	100,000 IU
	Children 1 – 12 years:	200,000 IU

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**Annex 3 - Cambodia Child Survival Scorecard**

## Annex 4 - References

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