

PREFACE

Anemia and iron deficiency remain at epidemic levels among women in many countries. The consequences of anemia include: increased maternal and perinatal mortality; an increased number of preterm and or low birth weight births; impaired cognitive development of children and reduced adult work productivity. Hence anemia prevention programs can contribute significantly to achieving many of the Millennium Development Goals (MDGS).

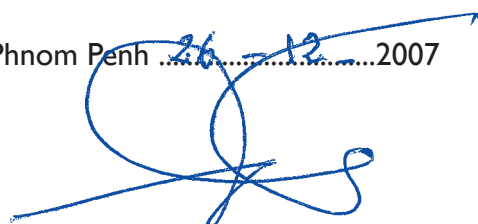
Anemia remains a major public health problem in Cambodia. Approximately 50% of anemia is estimated to be caused by iron deficiency. Although there have been some improvements, anemia prevalence remains high among women and children; with 62% of children, 47% of women of reproductive age and 57% of pregnant women anemic (CDHS 2005). Positively there has been an increase in the number of women accessing ante-natal care, and an increase in the distribution of iron folate tablets with 63% of pregnant women reporting receiving iron folate tablets during pregnancy in the CDHS 2005 compared with only 20% in 2000.

Interventions to prevent and correct iron deficiency anemia include dietary improvement, fortification of foods with iron, iron supplementation and other public health measures such as helminth control. All of these approaches improve iron status in some contexts. Iron supplementation is always necessary for pregnant women as the physiological iron requirements during pregnancy are higher than can be met by diet alone.

These guidelines address the appropriate uses of iron supplements to prevent and treat iron deficiency anemia in pregnant and postpartum women. The specific purpose of these guidelines is to:

- Provide clear recommendations for the distribution of iron supplements in anemia control programs at the local, district, or national levels
- Address both the prevention of iron deficiency anemia and the treatment of severe anemia in pregnant and postpartum women in public health contexts
- Integrate national recommendations for the use of anthelmintic medications along with iron supplements to prevent or treat anemia, and recommendations for the treatment of anemia in pregnant women who live in malaria endemic areas

Phnom Penh 26-12-2007



Professor **Eng Huot**
Secretary of State for Health

Abbreviations / Acronyms

BCC	Behavior Change Communication
CNM	National Malaria Center
CMS	Central Medical Stores
HC	Health Center
HIS	Health Information System
IDA	Iron Deficiency Anemia
IEC	Information, Education, Communication
IFA	Iron/Folate Supplement
NGO	Non government organization
NNP	National Nutrition Program
NMCHC	National Maternal and Child Health Center
NRHP	National Reproductive Health Program
MDGs	Millennium Goals
WHO	The World Health Organization
VHV	Village health volunteer

Table of Contents

Page

Preface	i
Abbreviations / Acronyms	ii
Table of Contents	iii
1. Background	1
2. Situation of Anemia in Cambodia	2
3. Overview of interventions for controlling iron deficiency in Cambodia	3
4. Prevention of iron deficiency anemia during pregnancy and postpartum period-	3
5. Protocol for Iron Supplementation for Pregnant and Postpartum Women	5
6. Guidelines for treatment or referral of severe anemia	7
7. Complementary parasite control measures in pregnancy	7
8. Program Management and Coordination	8
9 Monitoring and Evaluation	10
Appendices	
A. References	11
B. Key nutrition messages for controlling iron deficiency anemia	12
C. Percentage of iron in common iron compounds	12
D. Effective BCC Strategy for Supplementation program	13
D. WHO Palm Prints for Clinical Assessment of Anemia	14



I. Background

Anemia is the most common nutritional deficiency in the world. It affects more than 2 billion people worldwide and is a very serious public health problem throughout the developing world. Although there are other causes, iron deficiency is the leading cause of anemia. Iron deficiency anemia (IDA) is a severe form of iron deficiency. IDA has only a few signs and symptoms, which often go undetected by families, health care providers and policy makers.

Anemia during pregnancy is a major contributing factor to low birth weight babies and maternal mortality. Maternal anemia almost always leads to infant anemia with serious consequences for infant health, survival and development.

Anemia has serious negative consequences, including increased mortality in women and children, decreased capacity to learn, and decreased productivity in all individuals. It effects mental productivity and has a long lasting impact in economic losses for individuals and for countries with high anemia prevalence.

The population groups most vulnerable to developing iron deficiency are infants, children, and women of reproductive age due to their high iron requirements because of rapid growth or blood loss. Multiple causes of iron deficiency and iron deficiency anemia include: insufficient intake of bioavailability/absorbable iron, increased requirements of iron during pregnancy and during rapid growth periods, repeated pregnancies and poor birth spacing, blood loss during menstruation and childbirth; hemoglobinopathies such as or thalassemias and repeated infections, such as worms (hookworm), malaria, chronic diarrhea and dysentery.

The prevalence of anemia, defined by low hemoglobin or hematocrit is commonly used to assess the severity of iron deficiency in a population. Iron deficiency anemia occurs when iron stores are exhausted and the supply of iron to the tissues is compromised. Iron deficiency anemia is a severe stage of iron deficiency in which hemoglobin (or hematocrit) falls below the cutoffs (Table I). Iron deficiency anemia is defined as anemia with biochemical evidence of iron deficiency. Serum ferritin, transferrin saturation, transferrin receptor, and erythrocyte protoporphyrin are indicators used as biochemical evidence of iron deficiency.



Table 1. Hemoglobin and hematocrit cutoffs used to define anemia in people living at sea level

Age or sex group	Hemoglobin below:	Hematocrit below:
	g/dL	%
Children 6 months to 5 years	11.0	33
Children 5-11 years	11.5	34
Children 12-13 years	12.0	36
Nonpregnant women	12.0	36
Pregnant women	11.0	33
Men	13.0	39

From WHO/UNICEF/UNU, 1997

2. Situation of Anemia in Cambodia

Anemia remains a major public health problem in Cambodia. Although the causes of anemia in Cambodia have not been comprehensively researched, it is estimated that approximately 50 % of the anemia is caused by iron deficiency. Despite some positive changes in the anemia status of women in the last five years anemia prevalence remains high with 47% of women of reproductive age and 57% of pregnant women anemic (CDHS, 2005). The consequences of anemia in pregnancy are serious, reducing a woman's ability to survive bleeding during and after delivery (postpartum hemorrhage). Anemia may result in premature or lower birth weight babies with a higher risk of death, and cause weakness, fatigue and reduced physical ability to work.

Cambodia National Nutrition Program – Trends and Targets

Target Group	Outcome/Impact Indicators	CDHS 2000	CDHS 2005	2010 - Target
Children under five	Anemia defined by hemoglobin < 11 g/dl	63%	62%	35%
Pregnant women	Anemia defined by hemoglobin < 11 g/dl	66%	57%	39%
Women of reproductive age 15-49 years	Anemia defined by hemoglobin < 12 g/dl	58%	47%	32%

Cambodian Millennium Development Goals relating to Maternal Health:

- Reduce the proportion of pregnant women with iron deficiency anemia to 39% in 2015
- Reduce the proportion of women of reproductive age with iron deficiency anemia to 32 % in 2015
- Decrease the maternal mortality ratio to 243 per 1000,000 live births by 2015

3. Overview of Interventions (Direct and Contributing) for IDA Prevention and Control in Cambodia

- ❖ Daily iron/folate supplementation for pregnant and postpartum mothers through antenatal and postnatal visits at health facilities and health center outreach services
- ❖ Weekly iron/folate supplementation for secondary school girls
- ❖ Treatment of anemic patients (children and women) at health facilities
- ❖ Food security and homestead food production program to increase production and consumption of nutrient rich foods
- ❖ Disease control for infectious and parasitic diseases, such as malaria, worms, diarrhea, and HIV/AIDS
- ❖ Antenatal/postnatal care and safe motherhood activities
- ❖ Family planning and reproductive health programs
- ❖ Child health, such as Integrated Management of Childhood Illness (IMCI)
- ❖ School health, such as hygiene and sanitation education and de-worming
- ❖ Small scale programs for iron fortification of foods such as fish and soy sauce

All of these approaches improve iron status in some contexts. The appropriate use of iron supplements will be an important part of anemia control programs in almost all contexts, but supplements should be viewed as one of several tools in the battle against iron deficiency anemia.

4. Prevention of anemia during pregnancy and the postpartum period

➤ IRON FOLATE SUPPLEMENT

The recommended dose of iron in pregnancy and during the postpartum period is 60 mg/day. Because the efficiency of absorption of iron increases as iron deficiency anemia becomes more severe, this dose should provide adequate supplemental iron to women who do not have clinically severe anemia if it is given for an adequate duration.

Supplementation with 400 µg of folic acid around the time of conception significantly reduces the incidence of neural tube defects, a group of severe birth defects. Folate supplementation begun after the first trimester of pregnancy is too late to prevent birth defects. A daily dose of 400 µg folic acid is a safe and healthy intake for women during pregnancy and lactation but is more than the amount required to produce an optimal hemoglobin response in pregnant women. Nevertheless, if iron supplements containing 400 µg folic acid are available their use in supplementation programs is recommended.

➤ ADEQUATE DIET

The amount of iron absorbed from the diet is highly dependent on the composition of the diet namely the quantities of substances that enhance or inhibit dietary iron absorption.

Substances that inhibit iron absorption	Substances that promote iron absorption
Tea and coffee when consumed with a meal or shortly after a meal.	Red meats contain highly absorbable iron and promote the absorption of iron from other less bioavailable food sources
	Vitamin C
	Germination and fermentation of cereals and legumes improve the bioavailability of iron by reducing the content of phytate, a substance in food that inhibits iron absorption.

➤ Helminth Control

Where hookworm infection is endemic (prevalence 20-30% or higher) and anemia is very prevalent, hookworm infection (*Necator americanus* and *Ancylostoma duodenale*) is likely to be an important cause of anemia, especially moderate-to-severe anemia. Hookworms cause intestinal blood loss by feeding on the intestinal mucosa. The amount of blood lost is directly proportional to the number of worms infecting the host. A moderate infection of hookworms approximately doubles the iron losses of a child or menstruating woman. In antenatal care, anthelmintic therapy combined with iron and folate supplementation enhances the hemoglobin response to iron supplementation. Mebendazole may safely be administered to pregnant women after the first trimester.

➤ Malaria Control

Plasmodium falciparum malaria causes a profound anemia during and after acute infection. The anemia is caused by hemolysis of red cells combined with suppression of erythropoiesis. Consequently body iron is shifted from hemoglobin to storage forms. Where *P. falciparum* malaria is endemic, the use of insecticide-impregnated bednets in communities decreases the prevalence of severe anemia in young children. Malaria prophylaxis during pregnancy in malaria endemic areas is not practiced in Cambodia.

➤ Reproductive and obstetric strategies

- ★ Prevent adolescent pregnancies, reduce the total number of pregnancies and increase the time between pregnancies

- ★ Delay cord clamping

After delivery of the baby more blood cells are transferred from the placenta to the newly born infant if the umbilical cord is not clamped and ligated until it stops pulsating. By holding the infant on the mother's abdomen, continued blood flow to the infant is allowed without an excess risk of polycythemia (i.e. the baby getting too many blood cells). This increases the body iron content of the infant which will help to prevent iron deficiency in later infancy

- ★ Promote exclusive breastfeeding

The promotion of exclusive breastfeeding for about 6 months followed by breastfeeding with complementary feeding into the second year of life will contribute to the control of iron deficiency anemia in women of reproductive age through lactational amenorrhea

5. Protocol for Iron Supplementation for Pregnant and Postpartum Women

The high physiological requirement for iron in pregnancy is difficult to meet with most diets. Therefore pregnant women should routinely receive iron supplements in almost all contexts. Where the prevalence of anemia in pregnant women is high (40% or more) supplementation should continue into the postpartum period to enable women to acquire adequate iron stores (Table 2). Complementary parasite control measures in pregnancy are given in Table 3.

Table 2. Guidelines for iron supplementation for pregnant and postpartum women

Dose	Timing
60mgs iron and 400 µg Folic acid daily	At first contact give 60 tablets
60mgs iron and 400 µg Folic acid daily	At second contact give 30 tablets
60mgs iron and 400 µg Folic acid daily	During the postpartum period give 42 tablets at first postpartum contact

Note: When giving iron folate supplement it is important to provide information about possible side effects and how to avoid troublesome side-effects.

Possible side effects of iron folate supplementation

- Epigastric discomfort, nausea, diarrhoea, or constipation may appear with a daily dose of 60 mg or more. If these symptoms occur, supplement should be taken with meals.
- Faeces may turn black, which is not harmful. Treatment should continue.
- All iron preparations inhibit the absorption of tetracyclines, sulphonamides, and trimethoprim. Thus, iron should not be given together with these agents.
- High-dose vitamin C supplements should not be taken with iron tablets, because this would likely cause epigastric pain.

Table 3. Complementary parasite control measures in pregnancy

Dose	Timing
Mebendazole 500mgs single dose	After the first trimester of pregnancy
Mebendazole 500mgs single dose	Give during first contact in the post-partum period

Screening of pregnant women living in Malaria endemic areas who are anemic

Malaria in pregnant women has the same features as in adult malaria except that the risk of evolution into severe or complicated malaria in case of infection by *P. falciparum*, is faster and relapses in infections by *P. vivax* are more common. Anemia is a common complication of malaria in pregnant women. If a pregnant or postpartum women living in a malaria endemic area is anemic rule out malaria infection. If positive treat as advised in the National Malaria Guidelines.

Note: In Cambodia malaria prophylaxis is not routinely given to pregnant women living in malaria endemic areas.

Treatment of Anemia at Health Facility Level

Treatment of mild or moderate anemia (defined as a hemoglobin between 7.0 g/dL – 11.0 g/dL or a haematocrit between 21 – 30 %) Note: if no facilities are available for testing the hemoglobin level use the WHO, ' Palmar Pallor ' photographs to asses for anemia (details of this test in appendices).

For mild or moderate anemia give 2 Iron folate tablets per day for 14 days (1 tablet contains 60 mgs iron and 400 µg Folic acid) Advise the pregnant or postpartum to take one tablet in the morning with the morning meal, and one in the evening with the evening meal. Follow up after 14 days. If the woman is still anemic repeat the treatment for 14 more days and continue to follow up.

Note: Iron deficiency is not the only cause of severe anemia. Other possible causes include malaria, folate deficiency, hemoglobinopathies such as thalassemias, and the anemia of chronic disorders such as HIV infection, tuberculosis, or cancer. Health care workers should refer individuals who do not respond to oral iron therapy or who are at risk of serious complications to the nearest referral hospital.

Note: It is expected that if the anemia is caused by iron deficiency and the woman has good compliance to iron folate tablets her hemoglobin will increase by 10g/l after 1 to 2 months of supplementation.

Detection of Severe Anemia

If the hemoglobin or hematocrit can be determined, cutoffs of hemoglobin below 7.0 g/dL or hematocrit below 20% should be used to define severe anemia. Severe anemia is defined clinically as a low hemoglobin concentration leading to cardiac decompensation, that is to the point that the heart cannot maintain adequate circulation of the blood. A common complaint is that individuals feel breathless at rest. If the hemoglobin or hematocrit cannot be determined use the WHO Palmar Pallor photographs to estimate the severity of the anemia (See details in appendices)

Referral of Severe Anemia

Severe anemia usually comprises a small proportion of the cases of iron deficiency in a population but may cause a large proportion of the severe morbidity and mortality related to iron deficiency. All cases of severe anemia should be referred to the nearest referral hospital.

Treatment of Severe anemia

Once a pregnant women is determined to have severe anemia she should be referred to the nearest referral hospital. If a pregnant women is beyond 36 weeks gestation she should be immediately transferred to a hospital (i.e. in the last month of pregnancy) or if signs of respiratory distress or cardiac abnormalities (e.g. labored breathing at rest or edema) are present. Pregnant women with severe anemia and 36 weeks pregnancy or over should be hospitalized until their delivery.

6. Guidelines for oral iron and folate therapy to treat severe anemia

Table 4. Guidelines for oral iron and folate therapy to treat severe anemia

Number of weeks pregnant	Dose	Duration
Pregnant (Gestation less than 36 weeks pregnant) and postpartum women with severe anemia	Dose 2 tablets per day 1 tablet contains 60mgs iron and 400 µg Folic acid (Advise to take one tablet with morning meal and one tablet with evening meal)	3 months
Pregnant 36 gestation weeks and over WOMAN SHOULD BE HOSPITALISED UNTIL DELIVERY	Dose 2 tablets per day 1 tablet contains 60mgs iron and 400 µg Folic acid (Advise to take one tablet with morning meal and one tablet with evening meal)	3 months
<p>Note: If the patient remains anemic after 3 months of treatment, 2 tablets of iron/folate per day should be given for a further 3 months.</p> <p>For pregnant women with less than 36 weeks gestation and women in the postpartum period follow up after 2 weeks of treatment and then for every 4 weeks of treatment .</p>		

Give complementary parasite control (Mebendazole) for women with severe anemia. See Table 5.

7. Complementary parasite control measures in pregnancy

Table 5. Complementary parasite treatment for individual with severe anemia

<p>As hookworms are endemic in Cambodia (prevalence 20 -30%). Mebendazole single dose of 500mgs should be given to all women with severe anemia.</p> <p>If the affected woman is in the first trimester of pregnancy, delay giving Mebendazole until the second trimester of pregnancy (when the uterus can be easily palpated).</p>
<p>In areas where <i>P. falciparum</i> is endemic</p> <p>If a pregnant or postpartum woman is severely anemic and living in a Malaria endemic area it's important to check for Malaria. If Malaria positive treat as advised per National Guidelines for Malaria during pregnancy.</p>

8. Program Management and Coordination – Anemia Prevention and Control Program for Pregnant and Postpartum women

Roles and Responsibilities

National Level

Various MoH programs/departments work in close collaboration to plan and implement activities to prevent and control anemia in pregnant and post partum women:

- The Department of Drugs and Food of the MoH is responsible for procurement of the Iron Folate Acid Supplement and mebendazole deworming tablets

- The Central Medical Stores (CMS) is responsible for IFA and mebendazole stock control and distribution of IFA and mebendazole stock to operational districts every quarter. CMS also monitors and supervises district pharmacies on a quarterly basis

- The National Reproductive Health Program is responsible for formulating reproductive health policies and operational strategies, developing technical guidelines/protocols and for coordinating and monitoring reproductive health programs, which include 'Safe Motherhood' activities. Health education and counseling about anemia prevention and control and daily iron/folate supplementation for pregnant and postpartum mothers is delivered through antenatal and postnatal visits at health facilities and health center outreach services. An annual National Reproductive Health Program action plan is prepared each year in collaboration with concerned MoH departments, other line ministries and external partners detailing strategies and assigning responsibilities. The National Reproductive Health Program also maintains a long term forecasting software program for estimating and forecasting reproductive health commodity requirements

- The National Nutrition Program (NNP), MoH, is responsible for long term forecasting and ordering of IFA on a yearly basis (one year in advance).NNP also formulate nutrition policies and operational strategies, develops technical guidelines/protocols and coordinates and monitors anemia prevention activities including coordinating program surveys and evaluations.An annual action plan is prepared each year together with concerned MoH departments, other line ministries and external partners, detailing strategies and assigning responsibilities.The National Nutrition Program reports yearly on progress in preventing and controlling anemia to the National Council for Nutrition, which is chaired by the Ministry of Planning

- The National Malaria Center (CMN) is responsible for long term forecasting and ordering of Mebendazole deworming tablets. CMN monitors deworming activities at district health level every quarter

Provincial Level:

Provincial Health Departments monitor and supervise anemia prevention and control activities

at district level, as part of an integrated supervision activity on a quarterly basis. Each province has a nutrition focal point person who is responsible for supporting planning, monitoring, evaluation and reporting on district level nutrition activities (MPA 10) on a quarterly basis. Provincial nutrition focal point persons check that information about IFA and mebendazole distribution are completed on the PRO4 HIS form; and provide feedback or follow up to operational district level as necessary.

Operational District Level:

Each operation district has a nutrition focal point person (usually the MCH program coordinator) who is responsible for planning, implementing, monitoring, evaluating and reporting nutrition activities in their respective district. The operational district pharmacist is responsible for ordering IFA and Mebendazole stock from CMS on a quarterly basis. The district pharmacist is responsible for distribution of requested IFA/mebendazole stock to health centers in his/her district on a quarterly basis and for monitoring and reporting on stock management at health center level. The district nutrition focal point person is responsible for checking the recording and reporting of the number of women receiving IFA and mebendazole on the HO2 and DO3 HIS forms and for providing feedback to health center staff and referral hospital staff about IFA and mebendazole coverage.

Health Center Level:

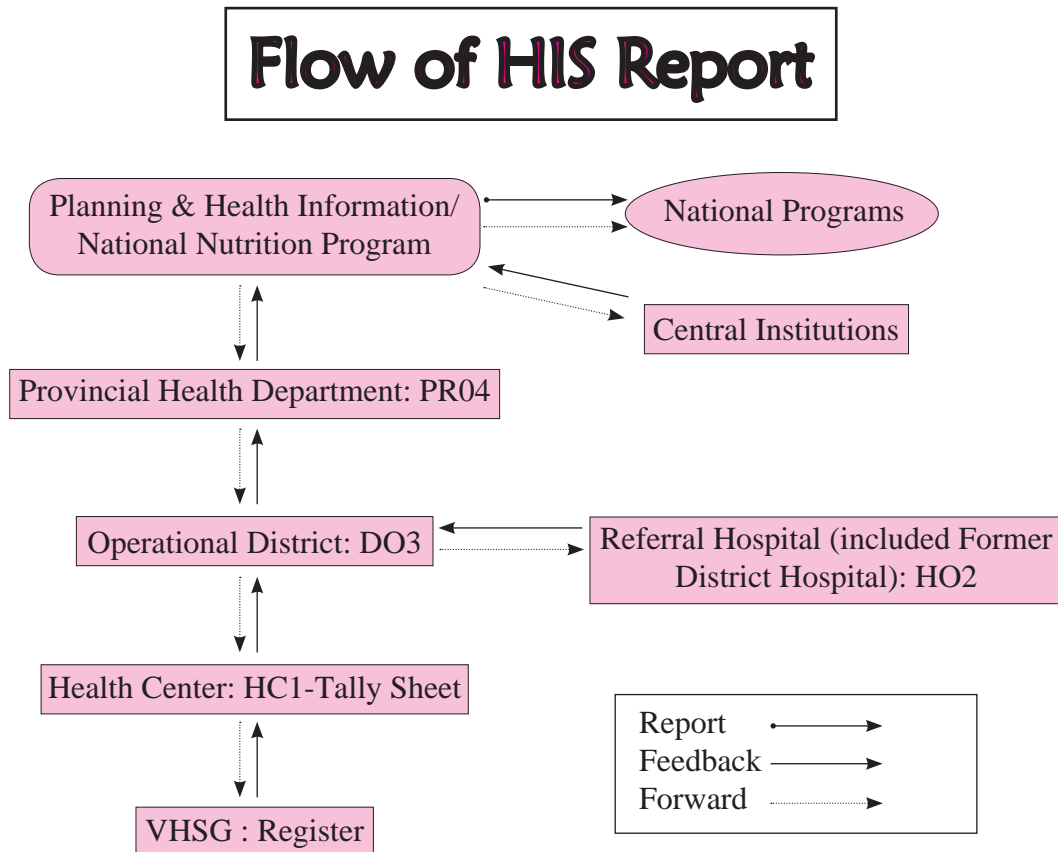
Health center staff provide antenatal and postnatal services for women both at health center facility and during outreach sessions. Pregnant women are provided 60 IFA tablets on their first contact with the health center staff and 30 tablets on their second contact. Pregnant women are counseled about the importance of taking 90 IFA during pregnancy and receive information about the importance of consuming a nutritious diet during pregnancy. Postpartum women are given 42 IFA supplement at first contact in the postpartum period. Health center staff are also responsible to administer a single dose of mebendazole 500mgs to all pregnant women during pregnancy, after the first trimester; and mebendazole 500mgs single dose to all postpartum women within the first six weeks after delivery. Health center staff are responsible for recording the number of women receiving IFA and mebendazole on the outreach tally sheets, transferring the data from the tally sheet to the HCI HIS reporting form and also reporting on the HCI form the IFA and mebendazole distributed to women at health facility level.

Village Level:

- Village health volunteers and traditional birth attendants provide support to the health center staff for IFA and mebendazole distribution at village level, this includes: recording the names and number of pregnant and postpartum women in the community; providing health education about the importance of a nutritious iron rich diet and the benefits and importance of taking IFA supplement during pregnancy and the postpartum period, mobilizing the community during outreach activities and supporting health center staff to identify pregnant and postpartum women who did not attend the outreach session.
- On request from and in collaboration with health center staff community volunteers can distribute IFA tablets to pregnant women, and postpartum women within six weeks of delivery

9. Monitoring and Evaluation

IFA and mebendazole distribution data is recorded on the HIS reporting forms from health center to provincial level.



Impact evaluation

Special surveys to measure impact of anemia prevention and control interventions are conducted as required.

Cambodia Health and Demographic Surveys (CDHS) are conducted every five years. The CDHS includes data on food consumption including micronutrients such as iron and vitamin A consumption. Data is also collected about prevalence of anemia in women of reproductive age and pregnant women and number of iron/folate supplements taken during the last pregnancy.

Evidence from this type of evaluation can be very influential in maintaining political support for policies and programs or advocating for additional iron deficiency anemia control activities.

Appendices

A. References

Ministry of Health (2004) National Policy and Guidelines for Helminth Control in Cambodia.

Ministry of Health (2004) Minimum Package of Activities: Training Module 10. Nutrition.

Ministry of Health (2004) National Treatment Guideline for Malaria in Cambodia, National Centre for Parasitology, Entomology and Malaria Control

National Maternal and Child Health Program (2004) Safe Motherhood Guidelines for Health Staff.

Stoltzfus RJ, Dreyfuss ML.(1997) Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia

Stoltzfus RJ, Mullany and Black (2004) Iron Deficiency Anemia, “ Comparative Quantification of Health Risks: Global and regional burden of disease attributable to selected major risk factors.” WHO.

WHO, UNICEF and United Nations University (2001) Iron Deficiency Anemia. Assessment, Prevention and Control:A Guide for Programme Managers. UN Consultation, Geneva 1993.

B. Key Nutrition Messages for controlling iron deficiency anemia

Even where poverty limits dietary choices, some general nutrition education messages have benefits for controlling iron deficiency anemia.

All nutrition education programs should promote and support:

- An adequate weight gain during pregnancy (at least 1 kg per month during the last six months of pregnancy) by promoting nutritious foods
- Increased intake of foods rich in absorbable iron such as meat, liver and fish especially during pregnancy and the postpartum period
- Consumption of other easily available sources of iron such as soybeans, groundnuts, beans and green leafy vegetables
- Consumption of fruits (Vitamin C) with meals to enhance the absorption of iron.
- Exclusive breastfeeding for about 6 months followed by breastfeeding with appropriate complementary foods, including iron-rich or iron-fortified foods where possible, through the second year of life.



C. Percentage and amount of iron in some commonly used iron compounds

Preparation	Iron compound (mg) per tablet		Part (%) of iron		Elemental iron (mg) per tablet
Ferrous fumarate	200	x	33	=	66
Ferrous gluconate	300		12		36
Ferrous sulfate (7H ₂ O)	300		20		60
Ferrous sulfate, anhydrous	200		37		74
Ferrous sulfate, exsiccated (1H ₂ O)	200		30		60

D. Effective BCC Strategy for Supplementation Program

SCOPE AND BEHAVIOR CHANGE GOALS FOR AN EFFECTIVE COMMUNICATION STRATEGY FOR IRON SUPPLEMENTATION FOR PREGNANT POST PARTUM WOMEN		
AGENT	BEHAVIOR GOAL	CHALLENGES
Health planners/ managers	<ul style="list-style-type: none"> • Calculate supplement needs/ timely order • Train and supervise staff • Use data to provide feedback, and for program planning 	<p>Many priorities/demands</p> <p>Lack of political will to address anemia</p> <p>Lack of awareness of importance of decreasing anemia prevalence.</p>
Health care providers	<ul style="list-style-type: none"> • Distribute supplements as per guidelines • Counsel women properly about their use • Order supplement • Record distribution and report to manager regularly 	<p>Lack of counseling communication skills</p> <p>Lack of awareness knowledge about importance of anemia reduction</p> <p>Infrequent contact with pregnant, postpartum women</p>
Community volunteer	<ul style="list-style-type: none"> • Counsel women about anemia, benefits of supplement, how to take correctly and manage side effects • Distribute supplements as per guidelines at community level • Record distribution of supplement • Report to health center staff Provide record of distribution 	<p>Lack of counseling communication skills</p> <p>Lack of awareness knowledge about importance of anemia reduction</p> <p>Infrequent contact with health center staff</p> <p>Many competing activities/ interventions at community level</p>
Pregnant, postpartum women and women of reproductive age	<ul style="list-style-type: none"> • Obtain and use iron supplement at right dose and frequency 	<p>Lack of awareness of anemia and how to prevent it</p> <p>Lack of access to services</p> <p>Lack of knowledge about side effects and how to manage them</p> <p>Beliefs/fears about effects of iron supplement</p>

E. WHO Palmar Pallor photographs for Clinical Assessment of Anemia (IMCI Photograph Booklet, WHO/UNICEF 2004)

Pallor is unusual paleness of the skin. It is a sign of anaemia.

How to examine the palms of the hand for signs of anemia

To see if the woman has palmar pallor, look at the skin of the woman's palm. Hold the woman's palm open by grasping it gently from the side. Do not stretch the fingers backwards. This may cause pallor by blocking the blood supply.

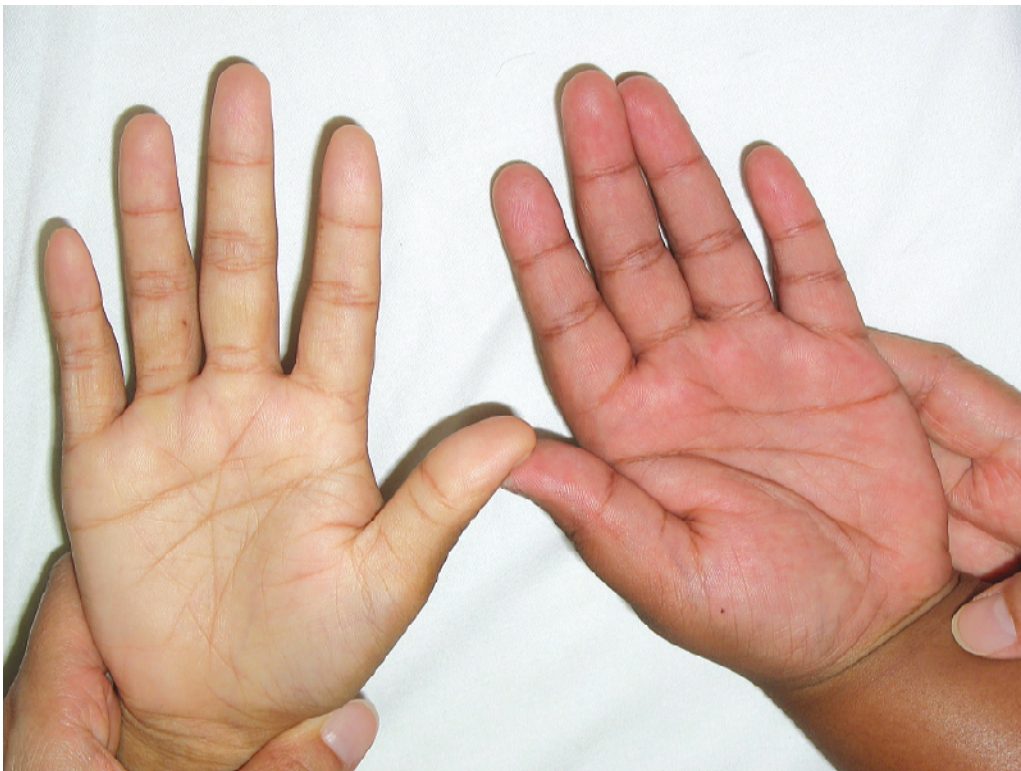
Compare the colour of the woman's palm with your own palm and with the palms of other women. If the skin of the woman's palm is pale, the woman has some palmar pallor. If the skin of the palm is very pale or so pale that it looks white, the woman has severe palmar pallor.

Look at photographs below and practice identifying children with palmar pallor.

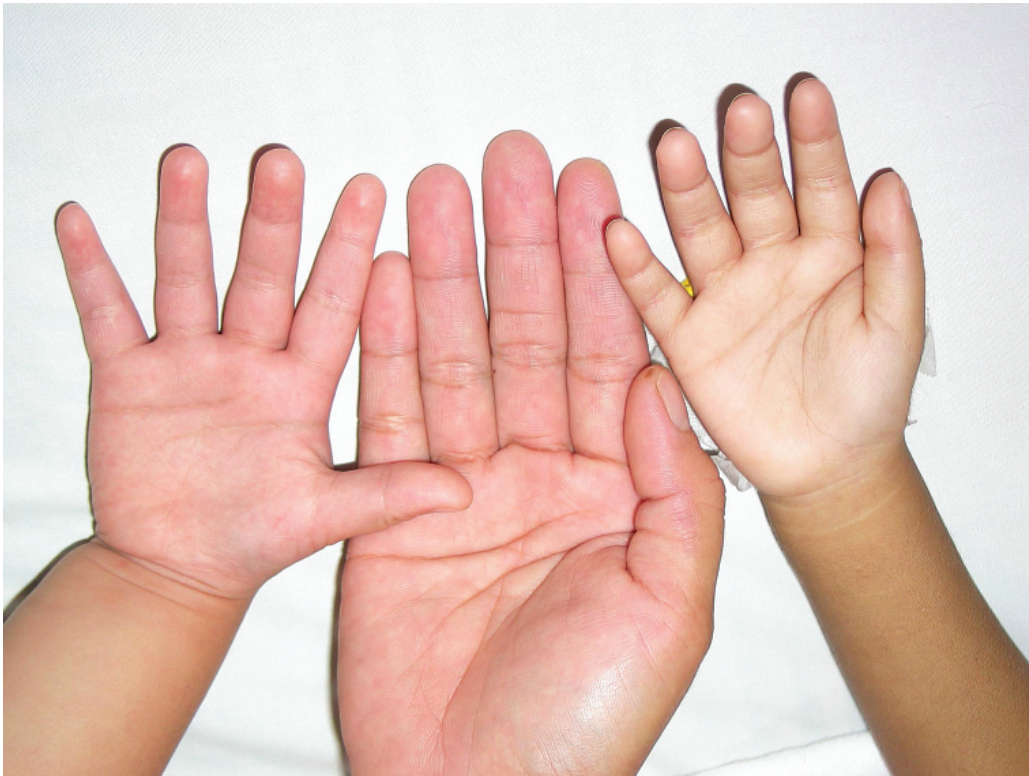
From the IMCI Photograph Booklet: Study the photographs numbered 38 through 40b. Read the explanation below for each photograph.



Photograph 38 : This child's skin is normal. There is no palmar pallor.



Photograph 39a and b: The hands in this photograph are from two different children. The child on the left has some palmar pallor.



Photograph 40a and b: The hands in this photograph are from two different children. The child on the left has no palmar pallor. The child on the right has severe palmar pallor.