

**RAPID ASSESSMENT OF COVERAGE OF  
MICRONUTRIENT SUPPLEMENTATION  
IN SRI LANKA**

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## **PREFACE**

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## SUMMARY

Sri Lanka over the past few years has implemented national programmes to combat and control micronutrient deficiencies. Iron supplementation for pregnant women and administration of vitamin A mega dose to children and post partum mothers are two of the major programmes which has been implemented throughout the country by the Ministry of Health. Information on coverage of these programmes would help the policy makers and programme managers to review and redesign the programmes and to identify the issues related to distribution. The objective of this study was to assess the coverage and identify the factors related to iron and vitamin A supplementation programmes.

A cross sectional study was carried out in five phases. They were antenatal clinic based assessment for pregnant women on iron supplementation through interviews and focus group discussions, observation of the clinic process on technique, advice given and storage of the supplementation by using check-lists, assessment of the coverage of Vitamin A mega dose supplementation among school children of grade 2, 5, 8 and obtain information on distribution of Vitamin A mega dose from the implementers of the supplementation programmes and the position of stocks status at the level of divisional drug store, medical officers of health and clinics, were also assessed.

A total of 68 clinics were visited island wide and 2161 pregnant women were interviewed. The national coverage of the iron supplementation among pregnant women was 92.9%. The usage of iron tablets by pregnant women was 87.8% ranging from 81.1% - 92.4% in different provinces. It was found that the provision of instructions on enhancers and inhibitors on iron absorption and the side effects of iron tablets were only around 35% in clinics while distributing the tablets.

Across the country 120 schools were visited. A total of 18,340 schoolchildren were interviewed on the distribution of vitamin A mega dose. The national coverage of vitamin A mega dose among schoolchildren was 36.1%, ranging from 12.3% to 73.6% in different provinces. The coverage of Vitamin A mega dose among postpartum mothers was 35.7%, which was assessed through the information given by the head of the institutions who are implementing this programme. A total of 7,098 infants and 6,555 pre school children had obtained the clinic services for measles and 4<sup>th</sup> triple immunisation respectively from the 68 clinics visited during the study. The coverage of the vitamin A mega dose for the year 2003 was 35.7% among infants and 29.6% among pre-schoolers. The stock position of supplementations was adequate

at the level of divisional drug stores and stores run by medical officers of health. However, an inadequate stock position was observed at the level of clinics due to wrong estimates.

This study shows the good coverage of iron supplementation among pregnant women who attended antenatal clinics. However, the vitamin A mega dose programme is still at a primitive stage even after 3 years of commencement. It is recommended to have a better co-ordination between medical supplies division and family health bureau on the issues of tablets. The distribution of Vitamin A mega dose should be revised or addressed appropriately to increase the coverage. It is important to make awareness among all health staff about nutritional policies for better implementation.

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## **BACKGROUND AND OBJECTIVES**

Micronutrient malnutrition has affected 2 billion people world wide. The adverse sequelae of micronutrient deficiencies are profound and include premature death, poor health, blindness, growth stunting, mental retardation, learning disabilities and low work capacity (National Academy Press 1998).

Common nutrition problems encountered in many developing countries including Sri Lanka are Protein Energy Under nutrition (PEM / PEU), Iron Deficiency Anaemia (IDA), Vitamin A Deficiency (VAD) and Iodine Deficiency Disorders (IDD). Iron deficiency being the most common micro nutrient deficiency in the country. It poses a major threat to the Sri Lankan population as its consequences have major repercussions on the economy and the wellbeing of every group of the society (WHO 2001).

Most studies done over the past decade have shown that micro nutrient deficiencies are still prevalent in Sri Lanka to an extent of public health significance (MRI 1998 and 2003). It is acknowledged that national policies have been developed and several national intervention programmes are being implemented (Ministry of Health 1999a & 1999b). Sri Lanka over the past few years has implemented many national programmes to combat and control micronutrient deficiencies. Ferrous sulphate supplementation for pregnant women is one of the major programmes and it is being implemented throughout the country through the antenatal clinics conducted by the area Medical Officers of Health with the assistance of the Public Health midwives. In the year 2000, a national programme was launched to prevent and control vitamin A deficiency by way of routine administration of vitamin A mega dose to selected physiological groups. It was implemented in most areas.

Despite concerted efforts of the government, international agencies and other organisations, the adequacy of coverage of these programmes, particularly the supplementation programmes is a major concern. Irregular supplies, inadequate awareness of peripheral health workers and the lapses of commitment of the stakeholders may negatively influence the expected benefits of these programmes (MPIP 2000 & UNU 1996).

Despite these national programmes, micronutrient deficiencies remain a public health problem in Sri Lanka, in respect of iron and vitamin A although significant gains have been observed

during the past few years. Information on coverage of these programmes would help the policy makers and programme managers to review and redesign the programmes to maximise the cost and social benefits. Such information will enable the authorities to identify the issues related to distribution.

A recent study carried out by MRI (2003) indicated that there is a 30% prevalence of anaemia among pregnant women in spite of the iron supplementation programme. One third of the children less than 5 years had biochemical deficiency of Vitamin A according to the survey conducted by MRI (1998). The situation is such that evaluations of existing intervention programmes serve a very useful purpose to assess the process.

In the circumstance, it is imperative that a scientific study is carried out to assess the coverage of the intervention programmes and to identify the factors affecting such programmes. This will enable the policy makers to rectify the existing deficiencies so that a reasonable coverage is achieved rendering these services cost effective. Hence it is proposed to carry out the study under the following objectives:

## **Objectives**

1. To assess the coverage of iron/folate supplementations among pregnant women.
2. To determine the coverage of Vitamin A mega-dose supplementation for
  - Infants
  - Pre school children
  - School children
  - Post partum mothers
3. To identify the factors related to the coverage of supplementation programme at distribution levels (PHM/MOH, Divisional Drug stores, FHB and MSD) and at recipient level.

## METHOD

As an initial step, a consultative meeting was conducted with policy makers, program managers, academics and programme implementers. The outcome of this meeting was used to identify the factors related to the coverage of supplementation programme. This helped to design the methodology of the study in order to achieve the objectives. Three follow-up meetings were conducted and the methodology and the questionnaires were revised and finalised.

This was a descriptive cross sectional study on a cluster sample of beneficiaries and other stakeholders responsible for implementation and management.

Study was conducted in 5 phases.

- **Phase 1** - Antenatal clinic based study among pregnant women on iron supplementation
- **Phase 2** - Observation of the clinic process on technique, advice given and storage of the supplementation
- **Phase 3** - School based study to assess the coverage of Vitamin A mega dose supplementation among schoolchildren
- **Phase 4** - Health institutions based survey among Head of the institutions ( implementators of supplementation programmes )
- **Phase 5** - Position of the stocks status of iron, folate and vitamin A mega dose capsules at the level of Divisional drug stores, Medical officers of health and clinic.

Sample size was calculated by considering the coverage of iron supplementation as 70% and the coverage of Vitamin A mega-dose as 30% and design effect was taken as 2 at confidence interval of 95% with the 5% error. Non response rate was considered as 5%. Calculated sample size was 1750.

1750 beneficiaries were recruited from each of the following categories:

- Pregnant women
- School children

## **Phase 1 - Antenatal clinic based study among pregnant women on iron supplementation**

Antenatal clinics were defined as clusters. The total number of clusters was 75. Thirty pregnant women were included from each cluster. Three antenatal clinics were randomly selected from each district, one from the hospital antenatal clinics manned by a Consultant Gynecologist and obstetrician (VOG) and the other two from the antenatal clinics manned by the medical officer of health (MOH). All MOH areas and hospitals with VOGs were listed out separately by districts. Two MOH areas and one hospital were selected randomly by using computer generated random numbers. The clinic schedules were obtained from the particular MOH and the schedules to visit the clinics were prepared district by district. Provincial Director of Health Services (PDHS), Deputy Provincial Director of Health Services (DPDHS), MOH and Director/VOG of the hospital were informed prior to the visit. On the scheduled day of the visit to the selected MOH area whatever the clinic which was conducted in that MOH area was visited. A letter of authority from the Director General of Health Services (DGHS) was submitted to obtain the permission.

When the clinics were visited, 30 pregnant women were randomly selected and 10 from each trimester of pregnancy whenever possible. This was done by using their clinic numbers or clinic register. It was an exit interview. Selected pregnant women were interviewed after they completed the clinic activities done by the field investigators who were trained in advance to perform the interview.

**An interviewer administered structured questionnaire** was administered to pregnant women with the objective of collecting the following information on iron supplementation such as the number of clinic visits – types and quantity of supplements received, knowledge on the supplements received, any side effects or complications after supplementation, supply in hand and any shortages (Annexure - 2).

**Focus group discussion** was conducted with 8 -15 pregnant women in selected 14 clinics on the following areas: general knowledge on different supplements, advice given at the time of supplementation, side effects and contraindications of supplements, dietary sources of micro-nutrients, commencement, dosages, frequencies, specific problems in continuing supplementation, conflict situations – traditional beliefs, family attitudes, peer pressure etc., locations where supplements are available, problems faced in obtaining supplements, alternate

sources of supplements, specific periods or areas /clinics where short supply is frequent, restrictions in distributing supplements to the recipients, storage of iron tablets at home, any other information

### **Phase 2 - Observation of the clinic process**

All the clinics visited during phase 1 of the study were observed for the technique, advice and instructions given by the health worker during the distribution of the tablets and storage of the iron supplementation. A checklist was prepared and the observation results were marked on it (Annexure – 3).

### **Phase 3 - School based study to assess the coverage of Vitamin A mega dose supplementation among schoolchildren**

A cross sectional school based survey was carried out to assess the coverage of Vitamin A mega dose in schoolchildren. All schools were listed out by districts and three schools were randomly selected from a district by computer generating random numbers. Principals of the selected schools were informed about the study after taking permission from the Provincial and Zonal Education Directors. One grade 1, grade 4 and grade 7 classes was randomly selected. All children in the selected classes were questioned whether the Vitamin A mega dose was received or not (Annexure – 4).

### **Phase 4 - Health institutions based survey among Head of the institutions (implementers of supplementation programmes)**

A questionnaire was sent out to all the health institutions in the country to be filled up and returned on the awareness of the policy of Vitamin A mega dose supplementation, distribution pattern and the problems encountered (Annexure – 5).

### **Phase 5 - Position of the stocks status of iron, folate and vitamin A mega dose capsules**

Information was obtained from the PHM for clinic level, MOH clerk or PHNS for MOH level during phase 1 of the study. The officer responsible for the dispatch of stocks to each selected clinic (Divisional Drug Stores) was also included as study subjects. Central level information was gathered from the Medical Supplies Division and Family Health Bureau. The check list was used to collect information from the following categories for Iron supplementation and Vitamin A mega dose (Annexure – 6).

1. From PHM/MOH: available stocks, number distributed for a specified period
2. From DDS: required amount for the district, supply
3. From FHB: required amount for a year, no. received for a year, any shortages / excesses, problems of distribution

Data were entered in Epi-info software and the percentage of coverage of iron supplementation among pregnant women and Vitamin A mega dose nationally and by districts were calculated.

### **Ethical Considerations**

Informed consent of pregnant women was obtained prior to recruitment. The permission was obtained from the relevant Directors of Health.

## RESULTS

Results have been presented according to the 5 phases of the study. This includes information on the national micronutrient supplementation programmes implemented through Government institutions.

### Phase 1 - Antenatal clinic based study among pregnant women on iron supplementation



A total of 68 clinics in 23 districts were subjected to the assessment as shown in the Figure - 1. Data could not be obtained from Mannar and Mullative districts due to logistic difficulties. The clinics were of three types. There were 46 clinics run by the M.O.H. of the area and 2 run by estate sector. The balance 20 were hospital based clinics out of which 16 were run by the VOG.

The ante-natal clinics that were covered in the study and the M.O.H. areas they belonged to are depicted in Annexure-1,

Table 1.

### Figure – 1: Distribution of the study sample in different districts

(Each red dot represents a clinic)

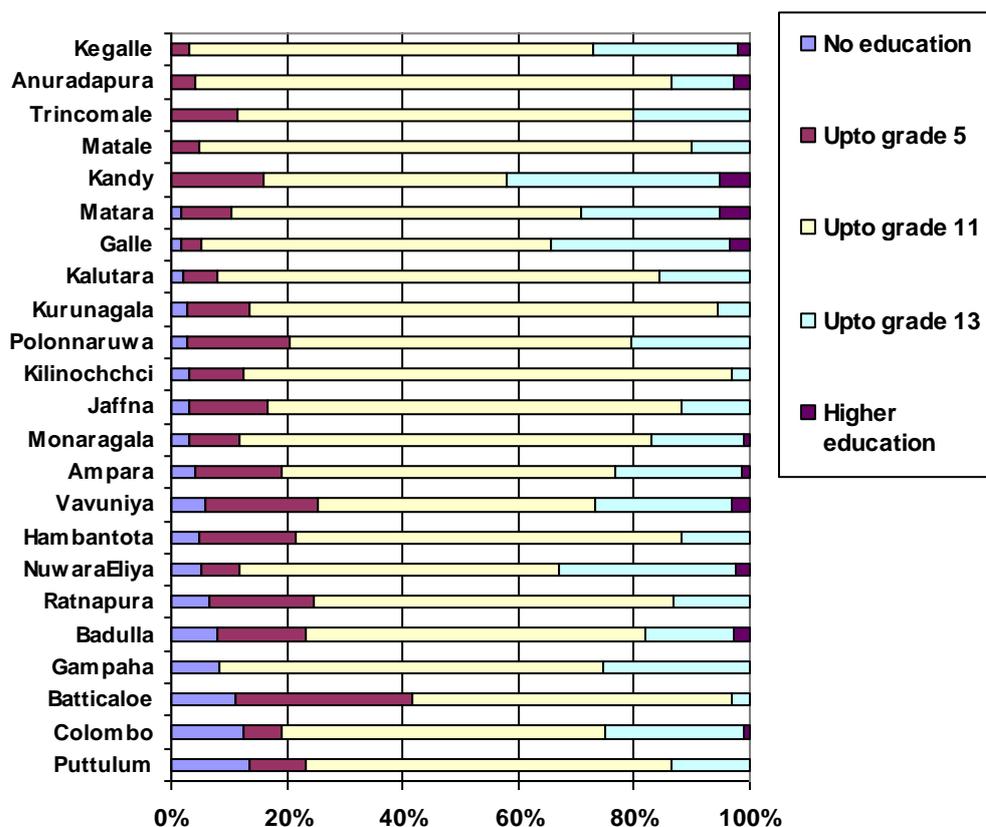
A total of 2161 pregnant women were interviewed. Table 1 shows the socio demographic characteristics of the women in the study population. Age distribution of the pregnant women studied showed that 58.5% of them were of the 20-29 age groups. There were 9.5% and 2.0% of women below the age 20 and above the age 39 respectively. 67.6% of them were Buddhists and 19.4% of them were Hindus. According to the ethnicity, 72.8% of the study population was Sinhalese and 21.7% were Tamils. It was found that 5.8% of pregnant women in the sample had never attended school. About 18% had studied up to grade 13. The majority (64.6%) had attended school only up to grade 11.

**Table 1****Socio demographic characteristics of the study population**

<b>Socio-demographic characteristics</b>	<b>No.</b>	<b>%</b>
Age in years (n=2143)*		
< 20	203	9.5
20 – 29	1254	58.5
30 – 39	644	30.1
≥ 40	42	1.9
Religion		
Buddhism	1460	67.6
Catholic	169	7.8
Hindu	419	19.4
Islam	112	5.1
Other (Christian...)	1	0.1
Nationality		
Sinhalese	1571	72.7
Tamil	469	21.7
Muslim/Malay	118	5.5
Other (Burger..)	3	0.1
Years of education (n=2156)**		
None	125	5.8
1 - 5	220	10.2
6 – 11	1392	64.6
12 – 13	393	18.2
Degree/Diploma	26	1.2
<b>Total</b>	<b>2161</b>	<b>100.0</b>

(\*birthdays were not known in 18, \*\*5 did not respond)

Figure 2: Educational status of the study sample by district



District pattern of the educational status of the study sample showed in the Figure 2. Percentages of mothers who had not attended school in Puttalam, Colombo and Batticaloa districts were greater compared to the other districts. This reflects that the study population consists of varying degrees of educational status. A majority of study subjects in districts were educated up to the secondary level.

As shown in Table 2, 39.6% were primigravida and the 8.8% of them were having 4 or more children. About 4.6% of pregnant women had a period of amenorrhoea (POA) less than 12 weeks.

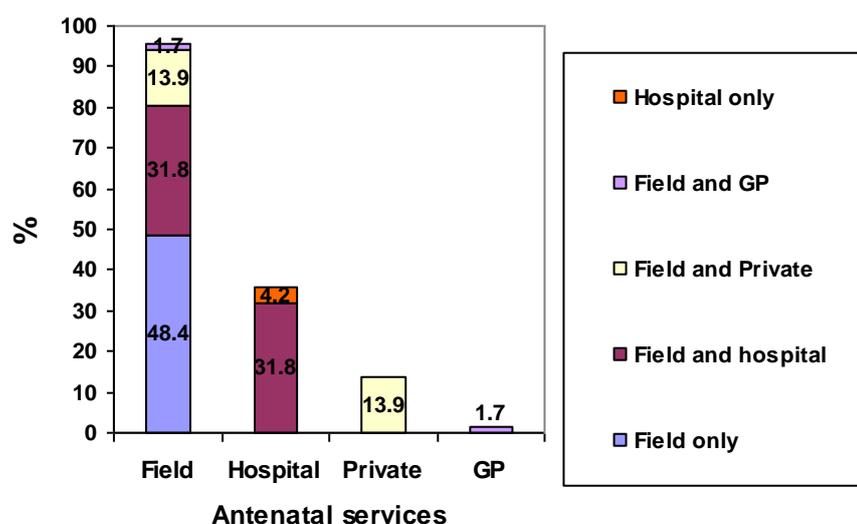
**Table 2**  
**Obstetric characteristics of the study population**

Characteristics	No.	%
Parity		
1	855	39.6
2	721	33.4
3	393	18.2
4	117	5.4
≥ 5	75	3.4
Period of gestation in weeks (POA) (n = 2136*)		
<12	99	4.6
12 – 24	720	33.7
25 – 28	290	13.6
29 – 32	326	15.3
33 – 36	422	19.8
>36	279	13.0

(\*25 mothers not known the POA)

### Antenatal services

Pregnant women were interviewed on the different antenatal services that they obtained. Almost 95% of women obtained antenatal services from the field clinics. About 48% and 4% obtained the antenatal services only from field clinics and hospital clinics respectively.



**Figure 3: Use of different antenatal services by pregnant women**

About half of the subjects had obtained antenatal services from more than one service including private specialised services.

**Table 3**  
**Antenatal services obtained by the study population**

<b>Characteristics</b>	<b>No.</b>	<b>%</b>
Obtained antenatal services		
Field clinics only	1045	48.4
Field & Hospital clinics	687	31.8
Field & Private specialised services	301	13.9
Field & General Practitioner	38	1.7
Hospital clinic only	90	4.2
POA in weeks at the first visit to the particular clinic (n=2102)*		
<12	749	35.6
12 – 28	1241	59.1
>28	112	5.3
Mean number of visits by pregnant women to the particular clinic in relation to the POA*	<b>No. subjects</b>	<b>Mean (SD)</b>
<12	88	1.2 (0.4)
12 – 24	686	2.2 (1.3)
25 – 28	307	3.5 (1.3)
29 – 32	316	4.5 (1.7)
33 – 36	426	5.4 (2.3)
>36	279	6.2 (2.7)

(\* 59 mothers did not know the last date of menstruation)

With regard to the first visit to an antenatal service, 35.6% had visited the clinic before 12 weeks of POA which was a remarkable achievement and shows the good utilisation of services during early pregnancy. Only 5.3% visited the clinics for the first time after 28<sup>th</sup> weeks of POA (Table 3). The results show that as the pregnancy progresses the number of clinic attendance rises and this is regarded as a healthy behaviour on the part of the service recipients.

### Iron supplementation

Family Health Bureau (FHB) provided ferrous sulphate (60mg elemental iron) and folic acid combined tablets. It was distributed to Divisional drug stores (DDS) in each district. The Medical officer of Health (MOH) is supposed to send quarterly estimates to the FHB. In addition, MOHs prepare annual estimates which are tabulated at the Deputy Provincial Director of Health (DPDHS) and sent to the Medical Supplies Division (MSD). Therefore MOH gets the supply of iron from both sources.

**Table 4**  
**Iron supplementation in clinics**

Characteristics	No.	%
Received iron supplementation from the clinic today (n=2161)		
Yes	1401	64.8
No	760	35.2
Mean (SD) number of days on which iron tablets not received	3.6 (10.7)	
Reason for not receiving iron supplementation (N=760)		
Not available in the clinic	52	6.8
Balance tablets available	282	37.1
Using tablets given by the Specialist	367	48.3
No time to collect tablets	2	0.3
Other (Collect tablets from the field clinic)	57	7.5
When the tablets are not available in the clinic prescription is received to obtain from the pharmacy (N=52)		
Yes	13	25.0
No	39	75.0
Received iron tablets at every visit of the clinic (n=2161)		
Yes	1283	59.4
No	878	40.6
Coverage of iron supplementation		92.9%

A proportion of 64.8% women received iron tablets on the day of the interview and the remainder of women (34.2%) did not receive supplements on that day (Table 4). The average number of clinic days on which, iron tablets were not received were 3.6 (SD=10.7) days. Out of those who did not receive, 37.1% had balance supply at home, 48.3% were using the tablets which were prescribed by the specialist. 7.5% of subjects were from the hospital clinics mentioned that they collect tablets from the field clinics and 6.8% stated that tablets were out

of stock in the clinic on the particular day. Out of those who did not receive the tablets due to non availability of tablets in the clinic, only 25% received a prescription to obtain iron tablets from the pharmacy.

### Coverage of iron supplementation

Coverage of iron supplementation was calculated by deducting the number of mothers who did not receive tablets on the day of interview due to non availability of tablets and no time to collect tablets, which was 92.9%. Almost 60% of study subjects stated that they received iron tablets at every clinic visit and others did not, due to a multitude of reasons given in Table 4.

**Table 5**  
**Usage of iron supplementation by the study population**

Usage of iron tablets (n=2161)		
Daily	1897	87.8
Occasionally	53	2.5
Very rarely	61	2.8
No	150	6.9
Reasons for not using iron tablets at all (n=150)		
No tablets	4	2.7
Due to side effects	39	2.6
Not needed	8	5.3
Not responded	99	66.0
No. of pregnant women who used iron tablets from both the field clinic and from the other sources (n=2161)	162	7.5
Source of additional dose of iron tablets (n=162)		
Specialist (VOG)	94	58.0
MOH / doctor	17	10.5
Other (by own, friend etc.)	51	31.5

About 87.8% indicated that they use iron tablets every day which was given from the clinic (Table 5). A few mothers were using tablets occasionally (2.5%) or very rarely (2.8%). But 6.9% were not using at all due to non availability of tablets in the clinic (1.5%), side effects (14.8%) or as they feel it is not needed (3.0%). However, 80.7% of them who were not using tablets did not want to comment. It is interesting to note that 7.5% of subjects were using iron tablets which were distributed from both field clinic and the other sources. Other sources identified

were specialists (58%), another doctor (10.5%) and other means such as friends and self prescription (31.5%).

All currently available iron tablets in Sri Lanka were provided to the interviewer and were shown to the respondents for identification during the interview. There are three major suppliers of iron and folic acid tablets. Combined Iron and Folic acid tablets issued by the Family Health Bureau (FHB), Ferrous Sulphate tablet issued by the Medical Supplies Division (MSD), Ministry of Health and the commercial preparations available in the market. All the subjects identified iron tablets which were being used by them at present without any difficulties. Almost half the women ( 44.9% ) were using iron folic acid combined tablets, 36.6% were using iron and folic acid tablets separately. Remaining subjects were using commercial preparations like Ovron (6.6%), Anemidox (1.2%), Fefol (2.1%) as shown in the Table 6. This indicates that in almost all districts and provinces major proportion of women depended entirely on government supply facility for their supplements.

**Table 6**

**Different preparations of iron tablets used by pregnant women at the time of interview**

<b>Preparations of the iron tablets (n=2011)*</b>	<b>No.</b>	<b>%</b>
Iron folate combined tablet	971	44.9
Iron tablet and folate separately	791	36.6
Hemsyneral TD	16	0.7
Hemornin	31	1.4
Ferrovit	14	0.1
Fefol	45	2.1
Ziferrin TR	21	1.0
Anemidox	27	1.2
Ovron	143	6.6

(\*150 subjects were not using iron tablets at all)

All subjects were asked as to when they commenced taking iron and folic acid tablets. The accuracy of the information was checked with clinic cards. As shown in the Table 7, 50.2% of subjects had started to use iron tablets between 12-24 months of pregnancy in different preparations such as iron and folic acid combined tablets, ferrous sulphate tablets or commercial preparations. Though it is not recommended, 33.7% had started taking iron tablets even before 12 weeks of pregnancy.

About 0.8% started to take iron tablets before 4 months. Folic acid supplementation is supposed to be taken during the pre pregnancy period to prevent neural tube diseases. Only 1.1% of subjects had taken folic acid tablets before the 4 weeks of pregnancy while 45.8% of women had taken before 12 weeks of POA. About 5% of mothers did not know when they commenced taking and no records also were available for verification.

**Table 7**  
**Commencement of supplements in pregnancy by their POA**

Tablets	No. (%) of pregnant women in different POA						Total
	<4	4-12	13-24	25-36	>36	not know	
Iron tablets (iron+folate/iron and commercial preparations)	17 0.8	711 32.9	1219 56.4	112 5.2	5 0.2	97 4.5	2161 100.0
Folic acid	24 1.1	966 44.7	1086 50.3	82 3.8	3 0.1	0 0.0	2161 100.0

**Table 8**  
**Instructions given by the health staff while distributing tablets**

No. of tablets per day	Iron tablets	Folic acid	Vitamin C
1	970 (44.9)	1365 (63.2)	1319 (61.0)
2	804 (37.2)	440 (20.4)	276 (12.8)
3	34 (1.6)	37 (1.7)	2 (0.1)
Not mention	353 (16.3)	319 (14.8)	564 (26.1)
<b>Frequency of taking</b>			
Once	1753 (81.1)	1788 (82.7)	1573 (72.8)
Twice / day	54 (2.5)	41 (1.9)	17 (0.8)
Thrice / day	11 (0.5)	13 (0.6)	9 (0.4)
No advice	343 (15.9)	319 (14.8)	562 (26.0)
<b>Time of the day</b>			
Before breakfast	57 (2.6)	75 (3.5)	56 (2.6)
After breakfast	70 (3.2)	173 (8.0)	98 (4.5)
Before lunch	4 (0.2)	9 (0.4)	7 (0.3)
After lunch	7 (0.3)	9 (0.4)	12 (0.6)
After dinner	17 (0.8)	16 (0.7)	8 (0.4)
Before dinner	1639 (75.8)	692 (29.1)	1398 (64.7)
Any time	1 (0.1)	2 (0.1)	1 (0.04)
Morning	20 (0.9)	21(1.0)	-
Night	-	-	20 (0.9)
Not mention	346 (16.0)	1164 (53.9)	561 (26.0)

Table 9 presents the details of the drugs offered to pregnant women in the clinics they visited on the day of the interview. The accuracy of the information was checked by the interview directly by checking the drugs during the exit interview. Only 1401 women were received the tablets on the day. The iron folate combined tablets which were issued by the FHB were provided to 51.5% and 16.1% of women attended field clinics and hospital clinics. This indicates that the Ferrous sulphate tablet which was distributed by the MSD was used by the hospital clinics more than the combined tablets which the FHB provided. Even in field clinics 48.4% of pregnant women were given the MSD ferrous sulphate tablet due to non availability of the other tablets.

**Table 9**  
**Details on drugs provided by different clinics (n=1401)**

<b>Iron tablets</b>	<b>Field clinics</b>	<b>Hospital clinics</b>	<b>Total</b>
Iron folic combined	642 (51.5)	25 (16.1)	667 (47.6)
Iron (ferrous sulphate)	604 (48.4)	130 (83.9)	734 (52.4)
<b>Other tablets</b>			
Vitamin C	1235 (99.1)	136 (87.7)	<b>1371* (97.9)</b>
<b>Total</b>	<b>1246 (88.9)</b>	<b>155 (11.1)</b>	<b>1401 (100.0)</b>

(\*30 mothers were not received Vitamin C tablets)

Only 99.1% and 87.7% of pregnant women who attended field and hospital clinics respectively had received Vitamin C with the iron tablets as shown in Table 9. This indicates Vitamin C tablets were not given every time with iron tablets. When inquires were made from health staff they mentioned it was due to non availability of Vitamin C.

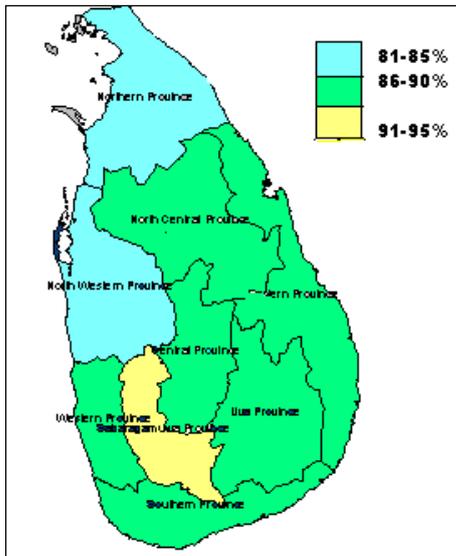
### **Usage of iron tablets**

Table 10 and Table 2 in the Annexure – 1 depicts the distribution of women used iron tablets by provinces and districts. This gives additional information on the women who obtained iron tablets both from the government clinics and from other sources (eg. on private prescriptions). This study shows that 87.8% of women were using iron tablets at the time of interview. About 5% of women were using iron tablets from 2 different sources at the same time. The highest number of women using the additional dose of iron was reported in the in Northern province, i.e. 13.6%.

**Table 10**

**Usage of iron tablets by the pregnant women in provinces**

Province	No. interviewed	No. Using tablets	%	No. using tablets both from clinic and from other source	%
Western	442	396	89.6	24	5.4
Central	192	167	87.0	6	3.1
Southern	273	245	89.7	11	4.0
Northern	250	212	84.8	34	13.6
Eastern	245	214	87.3	7	2.9
North Western	227	184	81.1	8	3.5
North Central Province	178	161	90.4	3	1.7
Uva Province	209	184	88.0	4	1.9
Sabaragamuwa Province	145	134	92.4	18	12.4
<b>Overall</b>	<b>2161</b>	<b>1897</b>	<b>87.8</b>	<b>115</b>	<b>5.3</b>



The usage was highest in the Sabaragamuwa province (92.4%) and lowest in the North Western province (81.1%) and Northern Province (84.8%) as shown in the Figure 4. All the other provinces had 86-90% of usage which is a remarkable achievement.

**Figure 4: Use of iron tablets by the pregnant women in different provinces**

**Adverse effects of supplementation**

18.4% of pregnant women had experienced adverse effects as shown in Table 11. Majority of them experience the nausea and vomiting. Next common side effect was dizziness.

**Table 11****Adverse effects experienced after taking tablets (n=2161)**

<b>adverse effects</b>	<b>No.</b>	<b>%</b>
Nausea	189	8.7
Vomiting	180	8.3
Dizziness	138	6.4
Loss of appetite	63	2.9
Headache	26	1.2
Black coloured stool	11	0.5
Constipation	8	0.4
Other (swelling in face, Diarrhoea)	27	1.3

This indicates about one fifth of study subjects were burdened with adverse effects of supplements that are being offered to them. Only 28.7% of women were given advice on side effects. It appears to be a drawback in the supplementation programme.

**Knowledge of women regarding the use of supplements**

On the question of reasons as to why they think that the iron tablet is given to pregnant mothers, 1743 (80.7%) women gave a multitude of reasons as shown in table 12. Nearly one fifth of women did not know the reason at all.

**Table 12****Reasons for giving iron tablets for pregnant women (n=2161)**

<b>Reasons (*more than one response)</b>	<b>No.*</b>	<b>%</b>
For proper growth of the baby	1185	54.8
For baby to become strong	625	28.9
To maintain the nutrition of the mother	443	20.4
To prevent anaemia / to increase the blood	400	18.5
To protect from the illnesses	192	8.9
Other (for energy, development of brain cells, increase the birth weight of the child, it is a vitamin)	120	5.6
Do not know	418	19.3

Only 18.5% of the pregnant women were aware that it is iron supplementation which prevents a person from getting anaemia. More than half were of the opinion that it helps general growth and development of the baby.

Figure 5: Knowledge of pregnant women on enhancers of iron absorptions (n=2161)

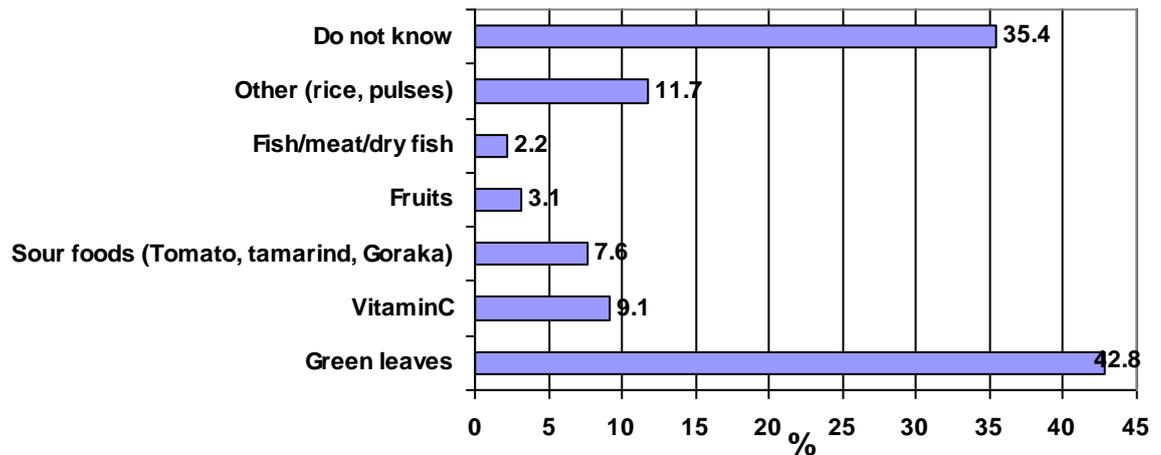
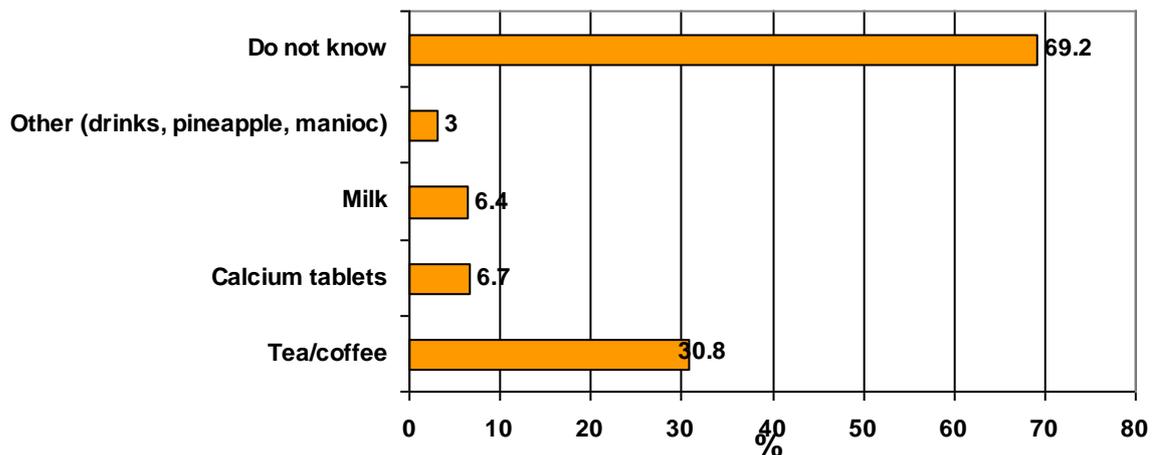


Figure 5 provides information on the knowledge of pregnant women on enhancers of iron absorption. As much as 42.8% of women incorrectly believed that green leaves in the diet enhances iron absorption. Only a proportion of less than 10% knew the enhancing effect of vitamin C. The knowledge that sour foods, animal food and fruits have the ability of enhancing iron absorption is also lacking. Approximately one third of women did not know of an enhancing effect at all.

Figure 6: Knowledge of pregnant women on inhibitors of iron absorptions



Knowledge on the inhibitory effects of certain foods in iron absorption is illustrated in figure 6. About 30% of pregnant women knew that tea or coffee taken close to meals inhibits iron absorption. Knowledge regarding other inhibitors was poor. Many women (69.2%) did not know of any inhibitor.

### Anaemia Status of the study population

Haemoglobin content of pregnant women is used as an indicator of the iron status of women as a routine screening test. First time testing of haemoglobin value with the date of testing were taken from the clinic records. Only 880 women (40.7%) were tested for the haemoglobin in clinics. Table 13 presents the mean haemoglobin level of pregnant women in relation to their period of amenorrhoea at the time of the testing and the prevalence of anaemia among them.

**Table 13**

**Haemoglobin level of women during clinic visits in relation to the POA at the time of test**

<b>POA in weeks</b>	<b>n* (%)</b>	<b>Mean Hb (SD)</b>	<b>Prevalence (%)</b>
<12	3	12.7 (3.1)	33.3
12 – 24	227	11.4 (1.5)	37.0
25 – 28	131	11.4 (1.4)	38.9
29 – 32	163	11.4 (1.4)	35.6
33 – 36	213	11.5 (1.4)	31.9
>36	143	11.3 (1.1)	43.4
<b>Overall</b>	<b>880</b>	<b>11.4 (1.4)</b>	<b>36.8</b>

(\* POA of 10 pregnant women were not known)

The mean haemoglobin level of the total sample was 11.4mg/dl. Throughout the whole period the mean value ranged around 11.4 mg/dl except in women below 12 weeks. However the number of pregnant women below 12 weeks of POA was low to draw conclusions. Overall prevalence of anaemia was 36.8% and the highest prevalence of anaemia was detected with women of more than 36 weeks of POA. When the anaemia was detected during the last trimester basically there was no time to correct the anaemia. This indicates the necessity of doing screening test on the first visit to the clinic itself in order to detect anaemia early so that obstetric complications can be prevented.

A break down of the prevalence of anaemia in pregnant women by each district and province is shown in table 14 and the Table 3 in Annexure-1. High prevalence values with regards to northern and eastern provinces should be interpreted cautiously due to small sample size compared to the rest of the provinces. Even in other areas, the number tested for haemoglobin ranged from 2-80.8%. The high anaemia prevalence in some provinces may be attributed to the

fact that of the pregnant women attending clinics it is only those suspected as anaemic who are tested for haemoglobin.

**Table 14**

**Distribution of anaemia in pregnant women by provinces according to the clinic record**

<b>Province</b>	<b>No. interviewed</b>	<b>No. tested for hb</b>	<b>%</b>	<b>Prevalence of anaemia</b>
Western	442	234	66.5	40.2
Central	192	43	27.9	9.3
Southern	273	96	60.8	25.0
Northern	250	5	2.0	80.0
Eastern	245	35	17.0	57.1
North Western	227	91	68.9	37.4
North Central	178	17	11.6	29.4
Uva	209	80	39.0	41.3
Sabaragamuwa	145	118	80.8	40.7
<b>Overall</b>	<b>2161</b>	<b>719</b>	<b>41.3</b>	<b>37.0</b>

**Community perception by focus group discussion**

Several focus group discussions with mothers who attended the clinics were conducted as a part of the assessment. There were 14 focus groups with 130 mothers participating, in 14 different districts. The key issues related to supplementation were discussed and their consensus opinion was taken.

Many mothers were of the view that iron tablets are taken because it gives protection to unborn baby and help them to grow properly. One third of the mothers were able to identify the iron tablets and only a few could identify folic acid tablets. Most mothers were advised to take nutritious food in addition to the tablets prescribed. They were adequately instructed not to take coffee or tea close to taking tablets. Very few mothers were advised to take iron tablets before going to sleep to minimise the side effects and to take some fruits after taking iron tablets to increase the absorption. Mothers of the Northern province were requested to take a glass of milk with the tablets.

None of the clinic service providers enlightened the mothers on adverse effects of the tablets prescribed. Most of the mothers stated they suffer from nausea, vomiting, dizziness and faintishness after taking iron folate. Some mentioned they feel vomitish after taking calcium tablets. Women in the north and east inclined to take tablets bought from the pharmacy to minimise adverse effects.

Most women identified green leaves and fruits as dietary sources of iron and folic acid. Only a few women were aware of egg, meat, fish, sprats, vegetables and grains as good sources. Thripasha is cited as a source by some women. Many women in Anuradhapura district said that a particular brand of milk powder was recommended to them saying that it contained folic acid and other nutrients. As for timing of supplementation, mothers were of the opinion that taking tablets should be started in the third month of pregnancy at the frequency of one tablet a day. None of them were aware of the fact that folic acid should be taken soon after the conception or even before.

Main constraints in maintaining a high level of supplementation were non availability of supplements at the health facility and financial difficulties to buy the prescribed tablets from out. No instances of negative influence in taking tablets during pregnancy were reported. In the contrary, most women in all 14 districts were encouraged by the family members and elders in the area to seek and follow health advice.

With regard to access to supplements, generally all supplements were available in the clinics. Towards the end of the year, some clinics run short of the stocks. When there was a shortage they were advised to buy the preparations from the chemist. Many clinics do not store sufficient stocks and women who attend late in the day might not get their due supplements. Particularly in the North and East, the clinics are manned by untrained personnel and sufficient stocks are not taken to the point of distribution resulting in a shortage. It appears as if many mothers employ effective storage practices such as storing them in tightly capped bottles although some continue to wrap the supplements with polythene and newspaper. Many women were of the opinion that the government should supply preparations with less side effects.

In summary there is no smooth supply of tablets at peripheral clinic level and mothers preferred better tolerated preparations. The knowledge of the mother regarding the side effects and the way to minimise it was not addressed adequately.

## Practices in Antenatal clinics

### Phase 2 - Observation of the clinic process on technique, instructions and storage of the supplementation

All the clinics were observed by the interviewers on the availability, provision of instructions when issuing iron folate, storage of tablets in the clinic and the packaging of tablets is given in the Table 15.

Table 15

**Observation of clinic practices related to the distribution of iron supplementation in antenatal clinics (N=66)**

practices	No.	%
<b>Availability of tablets</b>		
Iron and folic acid	58	87.9
Vitamin A mega dose	46	69.7
<b>Provision of instructions on iron/folate</b>		
purpose of giving	33	50.0
side effects	22	33.3
enhancing and inhibitory factors	24	36.4
frequency of taking	51	77.3
time of taking	53	80.3
<b>Storage of iron/folate</b>		
stored in tightly close container	59	89.4
three month ahead expiry date	55	83.3
<b>Distribution of drugs</b>		
packeted and distributed	11	16.7
wrapped in a newspaper	27	40.9
given to a container brought by the mother	28	42.4

Iron and folic acid tablets were available in 87.9% of the clinics and 69.7% of clinics had Vitamin A mega dose capsules. Only 33 clinics (50%) staff explained to the mothers the purpose of prescribing tablets and health personnel in 22 (33.3%) clinics briefed on side effects. Enhancing factors and inhibiting factors were explained by the staff in 24 clinics. Frequency of

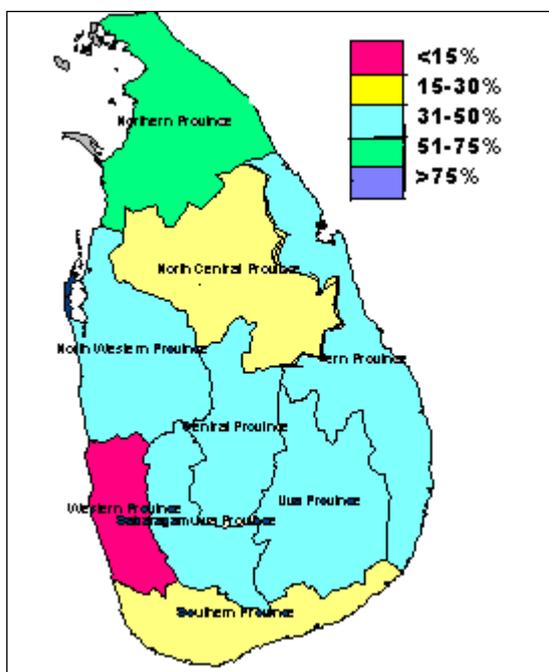
taking and the time of taking tablets were instructed by the staff in 51 (77.3%) and 53 (80.3%) clinics respectively.

In about 89.4% of clinics the tablets were stored in tightly closed containers and in 83.3% of the clinics the expiry date of supplements was more than 3 months. Only 16.7% of clinics had distributed the tablets after packeting, 40.9% had wrapped the tablets in newspapers. However, 42.4% of the clinics had issued tablets in a container which was brought by the mother. This indicates many clinics maintained good clinic practices in the delivery of supplements to pregnant women except for the fact that staff in only around one third of clinics have given the messages that should have been given upon issuing supplements.

## Vitamin A mega dose supplementation

### Phase 3 - School based study to assess the coverage of Vitamin A mega dose supplementation among schoolchildren

Across the country, 120 schools were visited and grade 1, 4 and 7 children were interviewed to



get the information on the distribution of Vitamin A mega dose. A total of 18,340 children were interviewed and the coverage of the vitamin A mega dose on the average was 36.1%, ranging from zero to 93.5% in different districts as given in the Table 16. Lowest coverage was reported from the Western Province and the highest coverage was from the Northern province as illustrated in the Figure 7.

**Figure 7: Coverage of Vitamin A mega dose supplementation in schoolchildren in different provinces**

But a single province has not achieved over 75% of coverage with Vitamin A mega dose supplementation. When considering the districts as shown in the Table 4, Annexure-1 the lowest prevalence was reported from the Gampaha district and the lowest from the Polonnaruwa district.

**Table 16**  
**Coverage of Vitamin A mega dose supplementation of schoolchildren**  
**by districts and provinces in 2002-3**

<b>Province</b>	<b>No. interviewed</b>	<b>No. received mega dose</b>	<b>Coverage (%)</b>
Western	2641	325	12.3
Central	1544	656	42.5
Southern	1954	510	26.1
Northern	1849	1361	73.6
Eastern	1802	785	43.6
North Western	2015	906	45.0
North Central	3158	832	26.3
Uva	1981	645	32.6
Sabaragamuwa	1366	596	43.6
<b>Overall</b>	<b>18310</b>	<b>6607</b>	<b>36.1</b>

Although new policy guideline was established and circulars were issued by the Ministry of Health, implementation of vitamin A supplementation to the new target groups is at a primary stage. However certain primary health care services of certain districts were remarkably ahead of the others in terms of mega dose supplementation as shown in Table 8, Annexure-1.

### **Coverage at institutional level**

#### **Phase 4 - Health institutions based survey among Heads of the institutions (implementers of supplementation programmes)**

Table 17 presents the awareness of the current policy and its implementation by district. Postal questionnaires were sent to 450 institutions (except MOH offices) and 334 (74.2%) institutions replied. Nineteen out of 334 (5.7%) heads of institutes were not aware of the Vitamin A mega dose policy, one of the leading children's hospitals was also in that category. Only 57.2% of institutions distributed Vitamin A mega dose currently.

Table 17

## Implementation of the policy of the Vitamin A mega dose by districts and provinces

Province	No. institutions responded	Aware of current policy	%	No. institutions distributing Mega dose	%
Western	42	39	92.9	23	12.0
Central	63	61	96.8	27	14.1
Southern	42	39	92.9	28	14.7
Northern	7	7	100.0	7	3.7
Eastern	30	30	100.0	20	10.5
North Western	36	30	100.0	40	20.9
North Central	36	32	88.9	14	7.3
Uva	37	34	91.9	25	13.1
Sabaragamuwa	41	40	97.6	22	11.5
<b>Overall</b>	<b>334</b>	<b>315</b>	<b>94.3</b>	<b>191</b>	<b>57.2</b>

Table 18

## Distribution and coverage of Vitamin A mega dose capsules by provinces in January - August 2003, data from the health institutions

Province	No. received	No. distributed for post partum mothers	%	No. distributed among infants and children	%
Western	2,13,800	83,078	38.9	57,153	26.7
Central	76,800	23,709	30.9	28,557	37.2
Southern	1,24,346	10,570	8.5	1,90,949	32.9
Northern	35,950	10,570	8.5	12,124	33.7
Eastern	72,700	29,949	5.8	14,896	20.5
North Western	90,669	11,850	13.1	40,501	44.7
North Central	58,500	12,264	21.0	14,651	25.0
Uva	1,03,000	18,343	17.8	42,865	41.6
Sabaragamuwa	1,69,310	1,00,891	59.6	25,688	15.2
<b>Overall</b>	<b>9,45,075</b>	<b>3,37,780</b>	<b>35.7</b>	<b>2,79,384</b>	<b>29.6</b>

A sum of 9,45,075 capsules of mega dose have been received to the 334 health institutions except MOH offices for distribution. Out of this total stock 3,37,780 (35.7 %) have been given

to post partum mothers while the number given to children was 2,79,384 (29.6%). Out of the total number of capsules received the proportion used was 65.3% as indicated in the Table 18. According to Table 18, coverage among postpartum mothers in clinics was also only 13.2%.

Most of the clinics visited were examined for clinic records. Data presented in the Table 19 and 20 was obtained from the clinic attendance register and the clinic summary which was maintained in clinic.

**Table 19**

**Coverage of mega dose supplementation among postpartum mothers in selected MCH clinics by provinces from January-August 2003, according to the clinic records**

<b>Province</b>	<b>No. post partum women attended clinic</b>	<b>No. of post partum women received Vitamin A mega dose</b>	<b>Coverage (%)</b>
Western	12285	2204	17.9
Central	1194	0	0.0
Southern	365	0	0.0
Northern	2383	0	0.0
Eastern	5319	0	0.0
North Western	461	0	0.0
North Central	644	0	0.0
Uva	1816	121	6.7
Sabaragamuwa	1018	0	0.0
<b>Overall</b>	<b>25485</b>	<b>3365</b>	<b>13.2</b>

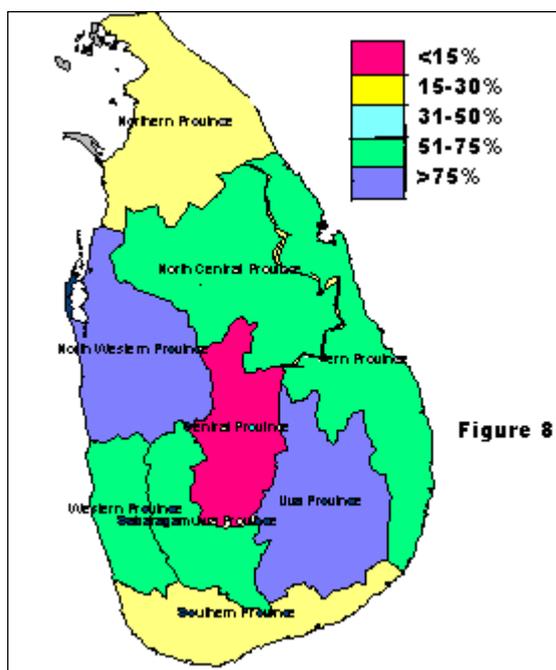
Though the policy requires Vitamin A mega dose to be distributed through the maternity wards after the delivery before discharge, in some districts it is covered through primary health care facility when the mothers visits clinics with their babies. Although a deviation from the policy, this practice has helped in improving the coverage of Vitamin A mega dose. Data shown in table 19 indicates that many provinces have not implemented the current circular at all while Kalutara district recorded 100% coverage as shown in Table 9, Annexure-1. Overall coverage stood at 13.2% among postpartum women in MCH clinics. It should be noted that denominator taken for computation of coverage was the number of women who attended clinics and the actual coverage may be lower than these findings when the women did not attend the clinics are taken in to account. Low coverage among post partum women may be due to the distribution through maternity wards after the delivery.

Table 20 reveals that coverage of vitamin A mega dose in MCH clinics was quite low compared to the coverage of measles and triple vaccinations. Only 50.1% of the children who received measles have been given the Vitamin A mega dose while the corresponding figure in comparison with triple vaccination stood at 40.7%. Nearly half the children who visited MCH have not been given vitamin A supplements.

**Table 20**

**Coverage of mega dose supplementation among infants and children in selected MCH clinics by provinces from January-August 2003, according to clinic records**

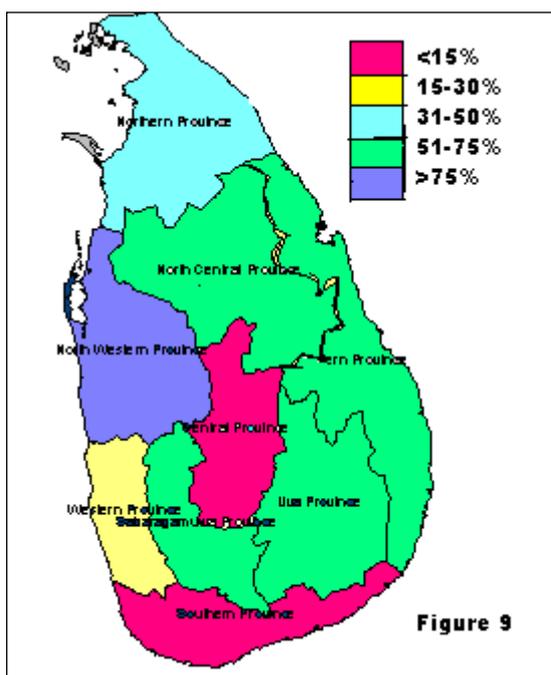
Province	No. infants received measles	No. of infants received Vitamin A mega dose	Coverage (%)	No. children received 4 <sup>th</sup> dose of triple	No. of children received Vitamin A mega dose	Coverage (%)
Western	3807	1949	51.2	3149	875	27.8
Central	509	0	0.0	449	0	0.0
Southern	44	12	27.2	298	10	3.4
Northern	449	126	28.0	468	213	45.5
Eastern	1048	575	54.9	1031	686	66.5
North Western	53	53	100.0	90	90	100.0
North Central	512	366	71.5	409	292	71.4
Uva	400	322	80.5	407	304	74.7
Sabaragamuwa	276	151	54.7	254	141	55.5
<b>Overall</b>	<b>7098</b>	<b>3558</b>	<b>50.1</b>	<b>6555</b>	<b>2667</b>	<b>40.7</b>



**Figure 8**

According to clinic attendance registers which were maintained at the clinics, which were visited, 7,098 infants attended the measles vaccination and only 50.1% received Vitamin A mega dose. The lowest coverage was reported from the Central Province and the highest coverage was from the Uva and North western province as illustrated in the Figure 8.

**Figure 8: Coverage of Vitamin A mega dose supplementation of infants in different provinces**



A total of 6,555 children aged 18 months attended the Triple vaccination and 40.7% had received Vitamin A mega dose. Lowest coverage was reported from the Central Province and Southern province. Highest coverage was from the North western province as illustrated in the Figure 9.

**Figure 9: Coverage of Vitamin A mega dose supplementation of preschoolers in different province**

It should be noted that denominator taken for computation of coverage was the number of children who attended clinics for immunisation and the actual coverage may be lower than these findings when the children who did not attend the clinics are taken in to account. According to data from DDS, low coverage among children was not due to the non availability of Vitamin A mega dose.

**Table 21**

**Institutions not distributing Vitamin A mega dose by reasons**

Reasons (n = 166)	No.	%
Currently not available	122	73.5
Distributed by the MOH	17	10.2
Others (infected with fungus, instructions were not given, difficult to store)	27	16.3

The main reason (73.5%) behind non distribution was the non availability of stocks as shown in the Table 21. Some hospitals stated the distribution had been done by an alternate source. ( MOH ) and 16.3% had cited storage problems and the non provision of proper instructions for them to distribute. Though the stocks are available at the DDS, the required amount of Vitamin A mega dose was not distributed to health institutions properly.

## Supplement Distribution System

**Phase 5 - Position of the stocks status of iron, folate and vitamin A mega dose capsules at the level of Divisional drug stores, Medical Officers of Health (MOH) and clinic.**

**Table 22**

**Balance of supplements in divisional drug stores at the end of year 2002 (n=14)**

Province (n=14)	Iron-folate	Ferrous sulphate	Folic acid	Vit C	Calcium	Vit A mega	Meban dasole
Western(1)	14000	4383	3680	10751	8618	160	3816
Central(1)	251	175	70	90	95	0	55
Southern(2)	51	1317	2062	455	570	25	276.7
Northern(2)	1002	760	304	396	215	8.5	825
Eastern(3)	1287	1273	903	1134	173	200	653.8
North Western (1)	1400	737	50	30	1269	38.5	38.5
North Central (1)	0	5615	1810	1314	671	95	828
Uva (1)	250	0	2139	2731	1500	0	3202
Sabaraga. (2)	2450	1762	1171	808	822	83.5	390

(These numbers refer to tablets in thousands i.e. 51 means 51,000)

Altogether 14 DDS were visited. The stock position at the end of the year 2002 and distribution of supplementation from January to August 2003 was taken from the officer in charge of the particular DDS. The data is given in the Table 22. It revealed the high carry over balance in all the provinces in regards to iron tablets (whether iron-folate or ferrous sulphate) except with the Vitamin C in central province and Vitamin A mega dose in the Uva province.

**Table 23**

**Distribution of supplements by divisional drug stores from January-August 2004 (n=14)**

Province (n=14)	Iron-folate	Ferrous sulphate	Folic acid	Vit C	Calcium	Vit A mega	Meban dasole
Western(1)	6390	4380	3299	8831	7141	6000	3020
Central(1)	2510	175	70	90	95	0	55
Southern(2)	51	665	1468	1304	666	320	1292
Northern(2)	1349	2242.6	1279	1783	1483	71.5	1547.6
Eastern(3)	990	2581	3140	3451	1577	147	1328
North Western (1)	1680	2046	1862	2255	2245	2055	0
North Central (1)	0	1699	1271	1312	84.7	61	610
Uva (1)	694	0	1600	2257	1113	100	1113
Sabaraga. (2)	350	3344	2932	4399	2216	131.2	1580

(These numbers refer to tablets in thousands i.e. 694 means 694,000)

Data shown in table 23 indicates the issues of the supplementation by the DDS during the year 2003 after summing up the issues from January to August. Most of the supplements were distributed during the year 2003 except with the Vitamin A mega dose in the Central province. Iron-folate tablets were not available at the DDS of North Central province. However, ferrous sulphate tablets were distributed in spite of that indicating no shortage at the district level.

Altogether 34 MOH offices were visited. The stock position at the end of the year 2002 and distribution of supplementation from January to August 2003 was taken from the MOH clerk or the in charge of the stores.

**Table 24**

**Balance of supplements in stores of MOH office at the end of year 2002 (n=34)**

<b>Province (n=34)</b>	<b>Iron-folate</b>	<b>Ferrous sulphate</b>	<b>Folic acid</b>	<b>Vit C</b>	<b>Calcium</b>	<b>Vit A mega</b>	<b>Meband asole</b>
Western(4)	77	288	310	306	93	7.5	13
Central(3)	153	14	14	61	30	30	44
Southern(4)	195	170	207	21	48	17.5	43
Northern(4)	5	295	381	232	54	14	137
Eastern(6)	431	21	10	121	58	7.5	230
North Western (3)	290	177	28	101	114	0	7.5
North Central (2)	123	143	133	118	82	0.5	28.5
Uva (5)	1142	179	142	613	90	84.8	45.6
Sabaraga. (3)	3	172	74	132	93	4.6	21.2

(These numbers refer to tablets in thousands i.e. 3 means 3,000)

Table 24 and 25 revealed the carry over balance at the end of year 2002 and a good flow of distribution throughout the year 2003 in all the provinces in regards to iron tablets except with the year end balance of Vitamin A mega dose in North western province.

**Table 25****Distribution of supplements by stores of MOH office from January-August 2004 (n=34)**

Province (n=34)	Iron-folate	Ferrous sulphate	Folic acid	Vit C	Calcium	Vit A mega	Meband asole
Western(4)	120	453	275	818	265	51	111
Central(3)	155	0	0	650	65	1.5	170
Southern(4)	108	45	35	161	84	28	28
Northern(4)	420	693	623	558	650	16	46.7
Eastern(6)	210	180	331	636	230	13	29
North Western (3)	200	240	322	203	281	22	73
North Central (2)	0	90	100	152	87	3	12.4
Uva (5)	1248	255	267	445	450	20.5	89
Sabaraga. (3)	0	261	142	140	125	1.9	7.2

(These numbers refer to tablets in thousands i.e. 6390 means 6,390,000)

A total of 37 clinics out of the 68 clinics visited were given information on stock position at the clinic as shown in table 26 and 27.

**Table 26****Supplements received for the clinics from January-August 2004 (n=37)**

Province (n=37)	Iron-folate	Ferrous sulphate	Folic acid	Vit C	Calcium	Vit A mega	Meband asole
Western(5)	45	242	1329	1445.5	1053.5	312.5	13.1
Central(4)	18	29.3	9	26.2	27.1	0.1	4
Southern(4)	502*	122.5	180.5	197	62.3	10	5.6
Northern(6)	72.5	312.2	347.2	249.7	21.8	3	23.4
Eastern(6)	57	51	384	220	71	7	52
North Western (4)	20	34	29	44	42	1.5	16.5
North Central (1)	0	9.3	8	12	8	0	0.3
Uva (4)	18	193	160	281.8	157	1.5	32.2
Sabaraga. (3)	16	45.4	37	50	39	0.2	2

(These numbers refer to tablets in thousands i.e. 45 means 45,000)(\*large stock in Mahamodara hospital)

There was a balance between receive and distribution of supplements but the 3 months buffer stocks were maintained in few clinics. Vitamin C and calcium tablets were received and distributed in less quantity than iron tablets. It may indicate the shortage of Vitamin C and calcium tablets as revealed in the clinic study among pregnant women. Though the stocks of Vitamin A mega dose were available even at clinics, the distribution was very poor.

**Table 27**

**Distribution of supplements by clinics from January-August 2004 (n=37)**

<b>Province (n=37)</b>	<b>Iron-folate</b>	<b>Ferrous sulphate</b>	<b>Folic acid</b>	<b>Vit C</b>	<b>Calcium</b>	<b>Vit A mega</b>	<b>Meband asole</b>
Western(5)	43	237.9	1239.5	1435	1299.1	301	23.8
Central(4)	17.2	27	8	20.4	28.6	0.04	2.5
Southern(4)	10.2	108.1	99.6	116.7	74.5	0.1	3.4
Northern(6)	52.4	199.2	157.3	81.6	21.8	1.1	13.2
Eastern(6)	31.6	29.6	37.9	49.4	33.2	2.5	20.2
North Western (4)	18.8	26.3	25.8	88.7	38.7	0.6	7.1
North Central (1)	0	8.9	6.8	11.6	7.9	0	0.3
Uva (4)	43.5	130	4.7	219.7	142.2	1.5	21.9
Sabaraga. (3)	13.6	44	33.7	44.8	34.6	0.1	1.9

(These numbers refer to tablets in thousands i.e. 44 means 44,000)

It is interesting to note that Vitamin A mega dose was not received or distributed by one of the leading maternity hospitals in the country.

The health authority of Colombo municipality purchases their supplementations. Therefore, they have provided ovron as iron-folate supplement and the Calzana as a calcium supplements.

## 4. CONCLUSIONS AND RECOMMENDATIONS

This study shows the good coverage of iron supplementation among pregnant women who attended antenatal clinics. The coverage of Vitamin A mega dose among postpartum mothers, infants, pre-schoolers and schoolchildren was very poor.

Non availability of stocks at the point of issuing supplements is the main constraint to the provision of micronutrient in Sri Lanka. Supply as well as storage problems affect the maintenance of stocks.

Circulars issued by the Department of Health regarding the existing supplementation programmes are not fully appreciated by the peripheral health staff including heads of institutions.

It is recommended to;

- Maintain a co-ordination between MSD and FHB on the issues of tablets. MOHs should request their supplies from either FHB or MSD not from both sources, which will avoid the shortage or excess of tablets during some period.
- Establish centrally located stock verification system with an authority to issue instructions to replenish and excess relocation.
- Address the problems of side effects properly during the distribution of tablets in the clinics.
- Revise or address appropriately the distribution of Vitamin A mega dose to increase the coverage.
- Make awareness among all the health staff about nutritional policies for better implementation.

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## ANNEXURE -1

**Table 1: Distribution of the study sample**

Code	District	MOH area	Clinic/Hospital
1	Colombo	Moratuwa	1. Katubadda
		Maharagama	2. Kottawa
		Homagama	3. Homagama MOH office
		Municipality	4. Maligawaththa
		Municipality	5. Kirula
		<b>Hospital</b>	6. <b>Castle street MH</b>
		<b>Hospital</b>	7. <b>Kalubowila TH</b>
2	Gampaha	Mirigama	8. Pasyala
		JaEla	9. Ekala
		Ragama	10. Batuwaththa
3	Kalutara	Bulathsinghala	11. Mahagama
		Wallallawita	12. Ihala Hewissa
		Matugama	13. Walagedara
4	Kandy	Municipality	14. Buwalikada
		<b>Hospital</b>	15. <b>Gampola BH</b>
5	Matale	Rattota	16. Rattota
		Naula	17. Kongahawela
6	NuwaraEliya	Rickillagaskada	18. Karadagolla
		NuwaraEliya	19. Kadapola
		Ambagamuwa	20. Malliyappu
7	Galle	Elpitiya	21. Elpitiya PU
		<b>Hospital</b>	22. <b>Mahamodara TH</b>
8	Matara	Morawaka	23. Pitabaddara
		Devinuara	24. Pahalaaparaka
		<b>Hospital</b>	25. <b>Matara BH</b>
9	Hambantota	Tissamaharamaya	26. Magama
		Walasmulla	27. Bogalla
		<b>Hospital</b>	28. <b>Hambantota BH</b>
10	Jaffna	Manipai	29. Manipai
		Thellipali	30. Thellipali
		<b>Hospital</b>	31. <b>Jaffna TH</b>
11	Killinochchi	Killinochchi	32. Selvanagar
		Kopay	33. Kopay
13	Vavuniya	Vavuniya	34. Pundota
		Vavuniya	35. Santhasole
		<b>Hospital</b>	36. <b>Vavuniya BH</b>
15	Batticaloe	Batticaloe	37. Palamunai
		Paddipalai	38. Mahiladithir

		Valachchannai	39. Shathively
		<b>Hospital</b>	40. <b>Batticaloe GH</b>
16	Ampara	Mahaoya	41. Kudahaswala
		Dehiaththakandiya	42. Dehiaththakandiya DH
		<b>Hospital</b>	43. <b>Ampara GH</b>
17	Trincomalae	Gamarankadawala	44. Gamarankadawala
		<b>Hospital</b>	45. <b>Trincomale GH</b>
18	Kurunagala	Narammala	46. Walikare
		Nikawaratiya	47. Divullagoda
		Kurunagala	48. Thuruliyagama
19	Puttlum	Puttlum	49. Managundu
		Chilaw	50. Rabepitiya
		<b>Hospital</b>	51. <b>Chilaw BH</b>
20	Anuradapura	Mihintale	52. Mihintale PU
		Galnawa	53. Halmillawa
		<b>Hospital</b>	54. <b>Anuradapura GH</b>
21	Polonnaruwa	Madirigiriya	55. Madirigiriya MOH
		Galgamuwa	56. Galgamuwa PU
		<b>Hospital</b>	57. <b>Polonnaruwa BH</b>
22	Badulla	Bandarawela	58. Bandarawela UC
		<b>Hospital</b>	59. <b>Badulla GH</b>
		Estate	60. Kahagala
		Estate	61. Wewassa
23	Monaragala	Wallawaya	62. Wallawaya
		Bibile	63. Bibilewaththa
24	Ratnapura	Kuruwita	64. Theppanawa
		Ratnapura	65. Banagoda
25	Kegalle	Yatiantota	66. Yatiantota CD
		Galigamuwa	67. Atala
		<b>Hospital</b>	68. <b>Kegalle BH</b>

(Mannar and Mullativu districts were not covered)

**Table 2: Usage of iron tablets by the pregnant women in districts and provinces**

District/Province	No. interviewed	No. Using tablets	%	No. using tablets both from clinic and from other source	%
Colombo	332	289	87.0	18	7.4
Gampaha	59	59	100.0	5	8.5
Kalutara	51	48	94.1	1	2.0
<b>Western Province</b>	<b>442</b>	<b>396</b>	<b>89.6</b>	<b>24</b>	<b>6.8</b>
Kandy	76	62	81.6	3	7.9
Matale	40	35	87.5	0	0.0
NuwaraEliya	76	70	92.1	3	3.9
<b>Central Province</b>	<b>192</b>	<b>167</b>	<b>87.0</b>	<b>6</b>	<b>3.9</b>
Galle	58	51	87.9	6	10.3
Matara	118	104	88.1	4	6.9
Hambantota	97	90	92.8	1	2.4
<b>Southern Province</b>	<b>273</b>	<b>245</b>	<b>89.7</b>	<b>11</b>	<b>7.0</b>
Jaffna	133	114	85.7	25	19.7
Killinochchi	33	22	66.7	1	3.0
Vavuniya	84	76	90.5	8	9.5
<b>Northern Province</b>	<b>250</b>	<b>212</b>	<b>84.8</b>	<b>34</b>	<b>13.9</b>
Batticaloe	113	89	78.8	3	3.1
Ampara	73	66	90.4	3	4.1
Trincomalae	59	59	100.0	1	2.9
<b>Eastern Province</b>	<b>245</b>	<b>214</b>	<b>87.3</b>	<b>7</b>	<b>3.4</b>
Kurunagala	37	34	91.9	2	5.4
Puttlum	190	150	78.9	6	6.3
<b>North Western Province</b>	<b>227</b>	<b>184</b>	<b>81.1</b>	<b>8</b>	<b>6.1</b>
Anuradapura	105	93	88.6	3	4.1
Polonnaruwa	73	68	93.2	0	0.0
<b>North Central Province</b>	<b>178</b>	<b>161</b>	<b>90.4</b>	<b>3</b>	<b>2.1</b>
Badulla	91	87	95.6	0	0.0
Monaragala	118	97	82.2	4	4.3
<b>Uva Province</b>	<b>209</b>	<b>184</b>	<b>88.0</b>	<b>4</b>	<b>2.0</b>
Ratnapura	46	42	91.3	1	2.2
Kegalle	99	92	92.9	17	17
<b>Sabaragamuwa Province</b>	<b>145</b>	<b>134</b>	<b>92.4</b>	<b>18</b>	<b>12.3</b>
<b>Overall</b>	<b>2161</b>	<b>1897</b>	<b>87.8</b>	<b>115</b>	<b>6.6</b>

**Table 3: Distribution of anaemia in pregnant women by districts and provinces according to the clinic record**

District/Province	No. interviewed	No. tested for hb	%	Prevalence of anaemia
Colombo	242	204	77.3	46.1
Gampaha	59	38	64.4	21.1
Kalutara	51	9	17.6	33.3
<b>Western Province</b>	<b>352</b>	<b>234</b>	<b>66.5</b>	<b>40.2</b>
Kandy	38	10	13.2	40.0
.Matale	40	15	37.5	13.3
NuwaraEliya	76	23	30.3	0.0
<b>Central Province</b>	<b>154</b>	<b>43</b>	<b>27.9</b>	<b>9.3</b>
Galle	58	29	50.0	24.1
Matara	58	70	60.3	28.6
Hambantota	42	36	76.2	41.7
<b>Southern Province</b>	<b>158</b>	<b>96</b>	<b>60.8</b>	<b>25.0</b>
Jaffna	127	5	3.9	80.0
Killinochchi	33	0	0.0	-
Vavuniya	84	0	0.0	-
<b>Northern Province</b>	<b>244</b>	<b>5</b>	<b>2.0</b>	<b>80.0</b>
Batticaloa	98	1	1.0	100.0
Ampara	73	22	30.1	45.5
Trincomalee	35	12	37.1	75.0
<b>Eastern Province</b>	<b>206</b>	<b>35</b>	<b>17.0</b>	<b>57.1</b>
Kurunegala	37	17	45.9	35.3
Puttalam	95	74	77.9	37.8
<b>North Western Province</b>	<b>132</b>	<b>91</b>	<b>68.9</b>	<b>37.4</b>
Anuradhapura	73	17	23.3	29.4
Polonnaruwa	73	0	0.0	-
<b>North Central Province</b>	<b>146</b>	<b>17</b>	<b>11.6</b>	<b>29.4</b>
Badulla	111	32	28.8	31.3
Moneragala	94	48	51.1	47.9
<b>Uva Province</b>	<b>205</b>	<b>80</b>	<b>39.0</b>	<b>41.3</b>
Ratnapura	46	27	58.7	44.4
Kegalle	100	91	91	39.6
<b>Sabaragamuwa Province</b>	<b>146</b>	<b>118</b>	<b>80.8</b>	<b>40.7</b>
<b>Overall</b>	<b>1743</b>	<b>719</b>	<b>41.3</b>	<b>37.0</b>

**Table 4: Coverage of Vitamin A mega dose supplementation of schoolchildren by districts and provinces in 2002-3**

District/Province	No. interviewed	No. received mega dose	Coverage (%)
Colombo	1167	75	6.4
Gampaha	1091	0	0.0
Kalutara	383	250	65.3
<b>Western Province</b>	<b>2641</b>	<b>325</b>	<b>12.3</b>
Kandy	1066	331	31.1
Matale	-	-	-
NuwaraEliya	478	325	68.0
<b>Central Province</b>	<b>1544</b>	<b>656</b>	<b>42.5</b>
Galle	1215	206	17.0
Matara	278	21	7.6
Hambantota	461	283	61.3
<b>Southern Province</b>	<b>1954</b>	<b>510</b>	<b>26.1</b>
Jaffna	1222	1063	87.0
Killinochchi	285	9	3.2
Mulative	43	28	65.1
Vavuniya	299	261	87.3
<b>Northern Province</b>	<b>1849</b>	<b>1361</b>	<b>73.6</b>
Batticaloe	467	343	73.4
Ampara	806	0	0.0
Trincomalae	529	442	83.6
<b>Eastern Province</b>	<b>1802</b>	<b>785</b>	<b>43.6</b>
Kurunagala	1521	490	32.2
Puttlum	494	416	84.2
<b>North Western Province</b>	<b>2015</b>	<b>906</b>	<b>45.0</b>
Anuradapura	2910	600	20.6
Polonnaruwa	248	232	93.5
<b>North Central Province</b>	<b>3158</b>	<b>832</b>	<b>26.3</b>
Badulla	888	199	22.4
Monaragala	1093	446	40.8
<b>Uva Province</b>	<b>1981</b>	<b>645</b>	<b>32.6</b>
Ratnapura	949	495	52.2
Kegalle	417	101	24.2
<b>Sabaragamuwa Province</b>	<b>1366</b>	<b>596</b>	<b>43.6</b>
<b>Overall</b>	<b>18310</b>	<b>6607</b>	<b>36.1</b>

**Table 5: Distribution and coverage of Vitamin A mega dose capsules  
by districts and provinces in January - August 2003** (\*data not available)

District/Province	No. received	No. distributed for post partum mothers	%	No. distributed among infants and children	%
Colombo	61000	2100	3.4	34771	57.0
Gampaha	94000	63185	67.2	4150	4.4
Kalutara	58800	17793	30.3	18232	31.0
<b>Western Province</b>	<b>213800</b>	<b>83078</b>	<b>38.9</b>	<b>57153</b>	<b>26.7</b>
Kandy	64500	23117	35.8	20507	31.8
Matale*	-	-	-	-	-
NuwaraEliya	12300	592	4.8	8050	65.4
<b>Central Province</b>	<b>76800</b>	<b>23709</b>	<b>30.9</b>	<b>28557</b>	<b>37.2</b>
Galle	69500	5942	8.5	16666	24.0
Matara	39846	4343	10.9	18009	45.2
Hambantota	15000	285	1.9	6274	41.8
<b>Southern Province</b>	<b>124346</b>	<b>10570</b>	<b>8.5</b>	<b>190949</b>	<b>32.9</b>
Jaffna	35950	2205	6.1	12124	33.7
Killinochchi*	-	-	-	-	-
Vavuniya*	-	-	-	-	-
<b>Northern Province</b>	<b>35950</b>	<b>10570</b>	<b>8.5</b>	<b>12124</b>	<b>33.7</b>
Batticaloe	16500	7000	42.4	5692	34.5
Ampara	29700	18712	63.0	400	1.3
Trincomalae	26500	4237	16.0	8804	33.2
<b>Eastern Province</b>	<b>72700</b>	<b>29949</b>	<b>5.8</b>	<b>14896</b>	<b>20.5</b>
Kurunagala	79169	11500	14.5	39980	50.5
Puttlum	11500	350	3.0	521	4.5
<b>North Western Province</b>	<b>90669</b>	<b>11850</b>	<b>13.1</b>	<b>40501</b>	<b>44.7</b>
Anuradapura	38000	10584	27.9	12566	33.1
Polonnaruwa	20500	1680	8.2	2085	10.2
<b>North Central Province</b>	<b>58500</b>	<b>12264</b>	<b>21.0</b>	<b>14651</b>	<b>25.0</b>
Badulla	53500	7955	14.9	16532	30.9
Monaragala	49500	10388	21.0	26333	53.2
<b>Uva Province</b>	<b>103000</b>	<b>18343</b>	<b>17.8</b>	<b>42865</b>	<b>41.6</b>
Ratnapura	18745	4995	26.6	10184	54.3
Kegalle	150565	95896	63.7	15504	10.3
<b>Sabaragamuwa Province</b>	<b>169310</b>	<b>100891</b>	<b>59.6</b>	<b>25688</b>	<b>15.2</b>
<b>Overall</b>	<b>945075</b>	<b>337780</b>	<b>35.7</b>	<b>279384</b>	<b>29.6</b>

**Table 6: Coverage of mega dose supplementation among postpartum mothers in MCH clinics by districts from January-August 2003**

District/Province	No. post partum women attended clinic	No. of post partum women received Vitamin A mega dose	Coverage (%)
Colombo	6705	960	14.3
Gampaha	4336	0	0.0
Kalutara	1244	1244	100.0
<b>Western Province</b>	<b>12285</b>	<b>2204</b>	<b>17.9</b>
Kandy	*	*	0.0
Matale	579	0	0.0
NuwaraEliya	615	0	0.0
<b>Central Province</b>	<b>1194</b>	<b>0</b>	<b>0.0</b>
Galle	*	*	0.0
Matara	230	0	0.0
Hambantota	135	0	0.0
<b>Southern Province</b>	<b>365</b>	<b>0</b>	<b>0.0</b>
Jaffna	469	0	0.0
Killinochchi	628	0	0.0
Mulative	*	*	*
Vavuniya	1286	0	0.0
<b>Northern Province</b>	<b>2383</b>	<b>0</b>	<b>0.0</b>
Batticaloe	3657	0	0.0
Ampara	1250	0	0.0
Trincomalae	412	0	0.0
<b>Eastern Province</b>	<b>5319</b>	<b>0</b>	<b>0.0</b>
Kurunagala	186	0	0.0
Puttlum	275	0	0.0
<b>North Western Province</b>	<b>461</b>	<b>0</b>	<b>0.0</b>
Anuradapura	644	0	0.0
Polonnaruwa	*	*	*
<b>North Central Province</b>	<b>644</b>	<b>0</b>	<b>0.0</b>
Badulla	769	0	0.0
Monaragala	1047	121	11.5
<b>Uva Province</b>	<b>1816</b>	<b>121</b>	<b>6.7</b>
Ratnapura	*	*	*
Kegalle	1018	0	0.0
<b>Sabaragamuwa Province</b>	<b>1018</b>	<b>0</b>	<b>0.0</b>
<b>Overall</b>	<b>25485</b>	<b>3365</b>	<b>13.2</b>

(\*data not available)

**Table 7: Coverage of mega dose supplementation among infants and children in MCH clinics by districts from January-August 2003**

District/Province	No. infants received measles	No. of infants received Vitamin A mega dose	Coverage (%)	No. children received 4 <sup>th</sup> dose of triple	No. received Vitamin A mega dose	Coverage (%)
Colombo	3026	1775	58.7	2641	710	26.9
Gampaha	607	0	0.0	343	0	0.0
Kalutara	174	174	100	165	165	100.0
<b>Western Province</b>						
Kandy	245	0	0.0	230	0	0.0
Matale	96	0	0.0	87	0	0.0
NuwaraEliya	168	0	0.0	132	0	0.0
<b>Central Province</b>						
Galle	*	*	*	*	*	*
Matara	44	12	27.2	48	10	20.8
Hambantota	*	*	*	250	0	0.0
<b>Southern Province</b>						
Jaffna	249	0	0	230	188	81.7
Killinochchi	47	0	0	77	0	0.0
Mulativu	*	*	*	*	*	*
Vavuniya	153	126	82.4	161	25	15.5
<b>Northern Province</b>						
Batticaloe	475	475	100.0	591	591	100.0
Ampara	473	0	0.0	345	0	0.0
Trincomalae	100	100	100.0	95	95	100.0
<b>Eastern Province</b>						
Kurunegala	*	*	*	48	48	100.0
Puttalam	53	53	100.0	42	42	100.0
<b>North Western Province</b>						
Anuradapura	136	62	49.2	147	76	51.7
Polonnaruwa	376	304	80.9	262	216	82.4
<b>North Central Province</b>						
Badulla	127	49	38.6	116	40	34.5
Monaragala	273	273	100.0	291	264	90.7
<b>Uva Province</b>						
Ratnapura	18	18	100.0	14	14	100.0
Kegalle	258	133	52.2	240	127	52.9
<b>Sabaragamuwa</b>						
<b>Overall</b>	<b>7098</b>	<b>3558</b>	<b>50.1</b>	<b>6555</b>	<b>2667</b>	<b>40.7</b>

(\* data not available)

**Table 8: Implementation of the policy of the Vitamin A mega dose  
by districts and provinces**

District/Province	No. institutions responded	Not aware of current policy	%	No.institutions distributing Megadose	%
Colombo	12	3	15.8	5	2.6
Gampaha	18	3	15.8	7	3.7
Kalutara	12	0	0.0	11	5.8
<b>Western Province</b>	<b>42</b>	<b>3</b>	<b>15.8</b>	<b>23</b>	<b>12.0</b>
Kandy	36	1	5.3	15	7.9
Matale	16	1	5.3	6	3.1
NuwaraEliya	11	0	0.0	6	3.1
<b>Central Province</b>	<b>63</b>	<b>2</b>	<b>5.3</b>	<b>27</b>	<b>14.1</b>
Galle	15	1	5.3	8	4.2
Matara	17	2	10.5	12	6.3
Hambantota	10	0	0.0	8	4.2
<b>Southern Province</b>	<b>42</b>	<b>3</b>	<b>15.8</b>	<b>28</b>	<b>14.7</b>
Jaffna	7	0	0.0	7	3.7
Killinochchi	0	-	-	-	.
Vavuniya	0	-	-	-	.
<b>Northern Province</b>	<b>7</b>	<b>0</b>	<b>0.0</b>	<b>7</b>	<b>3.7</b>
Batticaloe	4	0	0.0	4	2.1
Ampara	19	0	0.0	9	4.7
Trincomalae	7	0	0.0	7	3.7
<b>Eastern Province</b>	<b>30</b>	<b>0</b>	<b>0.0</b>	<b>20</b>	<b>10.5</b>
Kurunegala	26	0	0.0	21	11.0
Puttalam	10	0	0.0	19	1.6
<b>North Western Province</b>	<b>36</b>	<b>0</b>	<b>0.0</b>	<b>40</b>	<b>20.9</b>
Anuradhapura	30	4	21.1	11	5.8
Polonnaruwa	6	0	0.0	4	2.1
<b>North Central Province</b>	<b>36</b>	<b>4</b>	<b>21.1</b>	<b>14</b>	<b>7.3</b>
Badulla	19	3	15.8	12	6.3
Monaragala	18	0	0.0	13	6.8
<b>Uva Province</b>	<b>37</b>	<b>3</b>	<b>5.3</b>	<b>25</b>	<b>13.1</b>
Ratnapura	19	0	0.0	11	5.8
Kegalle	22	1	5.3	11	5.8
<b>Sabaragamuwa Province</b>	<b>41</b>	<b>1</b>	<b>5.3</b>	<b>22</b>	<b>11.5</b>
<b>Overall</b>	<b>334</b>	<b>19</b>	<b>5.7</b>	<b>191</b>	<b>57.2</b>









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### ANNEXURE - 3

#### CHECH-LIST FOR CLINIC OBSERVATION

#### Part C

##### Interviewer's observation

##### Checklist to assess the adequacy and clinic process with the micronutrient supplementation

Area	Observation	Yes=1 No=2
1.Availability of drugs	1.1.Availability of iron/folate to conduct the clinic	
	1.2.Availability of iron/folate – 3 months stock 1 month stock	
	1.3.Availability of Vitamin A megadose to conduct the clinic	
	1.4.Availability of Vitamin A megadose – 3 months stock	
2. Frequency of the clinic	2.1.Holding of the clinic at least once a month	
3. Provision of instructions (Observe the instructions given by the PHM/PHNS)	3.1.Instructions on the purpose of giving iron/folate	
	3.2.Instructions on side effects of iron/folate	
	3.3.Instructions on enhancing and inhibitory factors	
	3.4.Instructions on frequency of taking tablets	
	3.5.Instructions on the time of taking tablets	
4. Storage of iron/folate	4.1.Store in tightly closed containers without expose to sunlight	
	4.2.Three months ahead of expiry date	
5. Distribution of drugs	5.1.Packeted and distributed	
	5.2.Wrapped in a news paper	
	5.3.Given to the container	

#### Part D

##### Interviewer should obtain the following information from the clinic attendance register for January – Aug

**2003**

Information	Jan	Feb	March	Apr	May	June	July	Aug
No. of pregnant mothers attended clinic								
No. of iron/folate distributed for pregnant mother								
No. of lactating mothers attended clinic								

No. of Vitamin A mega dose distributed for mothers								
No. of infants attended for measles immunisation								
No. of Vitamin A mega dose distributed for infants								
No. of children attended clinic for 4 <sup>th</sup> triple + polio								
No. of Vitamin A mega dose distributed for them								

**ANNEXURE - 4**

**FORMAT TO ASSESS THE COVERAGE OF VITAMIN A MEGADOSE IN SCHOOLCHILDREN**

**Coverage of Vitamin A mega dose supplementation - year 2002**

**Data collection format Department of Nutrition, MRI**

Date         Code number of field investigator

Province No.   District No.   School No.

SNO	Grade	No. of classes in each grade in the school	Selected class	No. of children in the selected class	No. of children received Vitamin A mega dose during the school medical inspection in last year
1.	<b>Grade 2</b>				
2.	<b>Grade 5</b>				
3.	<b>Grade 8</b>				

ANNEXURE – 5

CHECKLIST TO COLLECT INFORMATION FROM HEALTH INSTITUTIONS

Questionnaire on Vitamin A megadose Implementation in Institutions

Name of the

Institution:.....

Address:.....

....

District: .....

Province:.....

(Please tick the appropriate answer)

1. Are you aware of the current National Policy on supply of Vitamin A megadose for postpartum mothers and children in the country?

Yes

No

2. If yes, Do you distribute Vitamin A megadose for them?

Yes

No

3. If not, please state the reasons

- .....
- .....
- .....

4. Please furnish following details for the period from January to August 2003

No. of Vitamin A megadose capsules received (Jan- Aug 2003 )	
No. of Vitamin A megadose capsules distributed among postpartum mothers	
No. of Vitamin A megadose capsules distributed among infants and children	

**ANNEXURE - 6**

**FORMATS TO COLLECT INFORMATION ON POSITION OF THE STOCKS AT THE LEVEL OF  
DDS, STORES RUN BY MOH AND CLINICS**

**DDS level and MOH level**

Date       Code number of field investigator

Name of the respondent :.....  
Designation:..... Period: 1<sup>st</sup> Quarter

	Iron folate	Iron	Folate	Vit C	Calcium	Mega dose Vit A
Stocks in hand as at 31.12.2002						
Distribution						
January						
February						
March						
April						
May						
June						
Total						

**Clinic level (observation and interview the PHM/PHNS)**

Date       Code number of field investigator

**Target number for the clinic: Pregnant women:----- Postpartum mothers:-----  
 Infants:-----Children 18 months:.....**

Check with clinic summary	Iron folate		Iron		Folate		Vit C		Calcium	
	Amount received	Amount distribute								
January										
February										
March										
April										
May										
June										
July										
August										
Total										

