
Dr. Umesh Kapil
Professor Public Health Nutrition
All India Institute of Medical Sciences
New Delhi
• Initiation of VAS
• Deviations in VAS
• Current Status of VAD
• Strategy for VAS in 12th Plan
Initiation of VAS
BEFORE 1970:

VAD and Nutritional Blindness due to VAD was a major Public Health Problem in India
High Prevalence of Severe Malnutrition and VAD Co-existed
## Age and Sex Incidence of Vitamin A Deficiency Cases

<table>
<thead>
<tr>
<th>AGE PERIOD</th>
<th>SEX</th>
<th>Percent Incidence (Hyderabad series)</th>
<th>Percent Incidence (Coonoor series)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less &lt; 1 year</td>
<td>Mal es</td>
<td>3.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>1-3 years</td>
<td>Femal es</td>
<td><strong>26.8%</strong></td>
<td><strong>17.9%</strong></td>
</tr>
<tr>
<td>3-5 years</td>
<td></td>
<td><strong>48.7%</strong></td>
<td><strong>39.0%</strong></td>
</tr>
<tr>
<td>6-10 years</td>
<td>Mal es</td>
<td>18.2%</td>
<td>31.4%</td>
</tr>
<tr>
<td>Over 10 years</td>
<td>Femal es</td>
<td>2.5%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Mal es</td>
<td>60</td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>Femal es</td>
<td>40</td>
<td></td>
<td>42</td>
</tr>
</tbody>
</table>

The India Journal of Child health, December 1960, 589-595
# Vitamin A Deficiency and Its Association with Other Diseases

<table>
<thead>
<tr>
<th>Vitamin A Deficiency Only</th>
<th>0.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A Deficiency and Protein Malnutrition</td>
<td>79%</td>
</tr>
<tr>
<td>Vitamin A Deficiency and Marasmus</td>
<td>13%</td>
</tr>
<tr>
<td>Vitamin A Deficiency and Tuberculosis</td>
<td>2.4%</td>
</tr>
<tr>
<td>Vitamin A Deficiency and Other Diseases</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

• Low Dietary intake of foods Rich in Retinol / Carotenes in Combination with High incidence of Respiratory infections and Measles

Were mainly responsible for VAD in young Children
Scientific Studies at National Institute of Nutrition, Hyderabad

Effect of a single massive dose of vitamin A on serum and liver levels of the vitamin. Srikantia SG, Reddy V.

• Based on Scientific Evidence

• National Program for prevention of Nutritional Blindness due to VAD, was launched by GOI

• 100% centrally Sponsored

• Beneficiaries : Children in 6-59 mo of age
Impact of vitamin A supplementation on childhood mortality. A randomized controlled community trial.

Conclusions:
Vitamin A supplements given to vitamin A deficient populations may decrease mortality by as much as 34% in Preschool children.

VA and U5 Mortality
Vitamin A Supplementation became a **key intervention for child survival** and was advocated by all international agencies like UNICEF, WHO, UNDP etc, in all developing countries including India.

- Many more studies were conducted to assess the impact of VAS on U5 mortality in developing countries.
- These had conflicting results.
Indian Study

*Effect of massive dose vitamin A on morbidity and mortality in Indian children.*

Vijayaraghavan K, Radhaiah G, Prakasam BS, Sarma KV, Reddy V.

*Lancet. 1990 Dec 1;336(8727):1342-5.*

**Results**

Vitamin A supplementation had **no effect on morbidity status.**

**Mortality rates were similar** in the two groups; **it was highest in children who did not receive either vitamin A or placebo.**
• In India, 1992 Child Survival and Safe Motherhood (CSSM) Program was initiated by GOI.

• Based on the Existing Scientific evidence: the age group of beneficiaries for VAS was modified from 6-59 mo to 6-35 mo.
Deviations in VAS
• International Agencies UNICEF / WHO/ UNDP continued their Advocacy for Universal Supplementation of VA to 6-59 months as a Key Intervention for Child survival in India

• The GOI guidelines of VAS to 6-35 mo were Ignored
Linked of VAS with PPI for U5 Children to achieve Universal VAS

- UNICEF Advocated to states to cover children in the age group of 6-59 mo who were beneficiaries of PPI with VA also

- The Philanthropic Reputation of the international agencies like UNICEF convinced State Government to accept their advice.

- Scientific Evidence Given to them

- **Health is a State Subject in India**

- State Response: **UNICEF is Giving something to children in 3-5 years and are NOT taking Anything from them**
To achieve Universal of VAS

UNICEF/ Other International Agencies provided

1. Free supply of VA,
2. Honorarium to the Health and Nutrition Functionaries,
3. Budget of Incidental and Contingency Expenditure like POL, Stationary, Transport, Printing, etc etc
Scientific Evidence to Government Officers

Impact factor 3.9
Recommendations for Vitamin A Supplementation

David A. Ross
Infectious Diseases Epidemiology Unit, London School of Hygiene & Tropical Medicine, London, United Kingdom

ABSTRACT In all populations where vitamin A deficiency is an important public health problem, prophylactic vitamin A supplements should be given to all infants and young children (0–59 mo), pregnant women and postpartum women within 6 wk after delivery. The efficacy of vitamin A supplementation of young children is one of the best-proven, safest and most cost-effective interventions in international public health. The International Vitamin A Consultative Group (IVACG) also recommends that three 50,000-international unit (IU) doses of vitamin A should be given at the same time as infant vaccines during the first 6 mo of life. Recent kinetic studies have indicated that this regimen will be safe and is necessary to maintain the infant’s vitamin A stores, even when the mother is also given 400,000 IU within the first 6 wk after delivery. IVACG will make a decision on whether to recommend prophylactic supplementation of all women of childbearing age when the results of two large trials in Ghana and Bangladesh are available. Active corneal xerophthalmia is always a medical emergency that should be treated with immediate high-dose vitamin A. High-dose vitamin A treatment is also recommended for infants and children with high mortality from measles. Low-dose vitamin A treatment is recommended for women with night blindness and/or Bitot’s spots. Given the evidence of the cost-effectiveness of vitamin A supplementation, it is essential that effective vitamin A supplementation programs are made universally available to all populations where vitamin A deficiency is an important public health problem. J. Nutr. 131: 2902S–2906S, 2002.

KEY WORDS: vitamin A • nutritional supplementation • humans

Vitamin A supplementation has been extensively researched (1), both in terms of its health and nutritional impact and in terms of the factors that can make supplementation programs successful. Vitamin A supplementation has also been widely implemented, because it is relatively simple and cheap to implement and it is highly cost-effective (2). These recommendations focus exclusively on vitamin A supplementation in populations in which vitamin A deficiency is an important public health problem (3).

Vitamin A supplements are given in two main contexts: as prophylaxis to groups of eligible individuals and as part of the treatment of sick individuals. These two situations are discussed in turn.

PROPHYLACTIC SUPPLEMENTATION

Prophylactic vitamin A supplementation of three groups [infants and young children (0–59 mo), pregnant women and postpartum women within 6 wk of delivery] is recommended in all populations in which vitamin A deficiency is an important public health problem.

Older infants and young children (6–59 mo)

The most severe clinical consequences of vitamin A deficiency (corneal xerophthalmia, severe illness and death) are found mainly in this age group (1), and prophylactic supplementation of older infants and young children (6–59 mo) should be an immediate priority in all vitamin A-deficient populations. The most feasible strategy is to give high-dose supplements every 4–6 mo on a sliding dosage scale on the basis of age (Table 1).

The efficacy of programs that have given a high-dose supplement to at least 80% of all children within this age range every 4–6 mo is one of the best-proven interventions in international public health. A meta-analysis of eight randomized controlled trials (4) showed that, on average, child mortality was reduced by at least 23% [95% confidence interval...
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Indian Academy of Pediatrics, 2000

Indian Academy of Pediatrics  Policy on Linking Vitamin A to the Pulse Polio Program  Indian Pediatrics 2000 ;37: 727

- The linking of VA with PPI is unscientific and Unjustified

- PPI and VA distribution was delinked by Government of India

- 400 IU RDA 200,000 mega dose 500 times, Why it should be given to healthy children

- Side Effects
• National Consultation on Benefits and Safety of Administration of Vitamin A to Pre-school Children and Pregnant and Lactating Women Organised by MOHFW The Indian Pediatrics 2001; 38: 37-42

• Reviewed the Entire VAS Program

• 3.2.1. Available data are not robust enough to persuade us to recommend a policy of vitamin A supplementation for the purpose of mortality reduction in children.

• 3.2.2. The current program recommendations of periodic administration of vitamin A, starting with measles vaccine at 9 months till 3 years of age should be persisted with.

29-30 September 2000

Representative of all International agencies participated including Unicef
VAS in campaign Mode in States sponsored by UNICEF  Continued

Assam

VAS related deaths amongst Children in Assam

More than 3.2 million Children in 6-59 mo were given VA on November 11, 2001. (One day Only)

GOI guidelines of VAS to 6-35 mo were Violated
Replacement of 2ml spoon by 5 ml cup by UNICEF

Children died due VA toxicity: 5 ml VA
Hon’ble High Court Assam

Aim was cover as high as possible number of children.
GOVERNMENT OF INDIA
MINISTRY OF HEALTH AND FAMILY WELFARE
DEPARTMENT OF FAMILY WELFARE
RAJYA SABHA
UNSTARRED QUESTION NO 2246

Will the Minister of HEALTH AND FAMILY WELFARE be pleased to state:-

(a) whether it is a fact that several children died of taking UNICEF supplied Vitamin `A` in Assam last year;

(b) the findings by the investigating doctors team sent by his Ministry; and

(c) why nobody has been brought to book till today?

ANSWER

THE MINISTER OF STATE IN THE MINISTRY OF HEALTH AND FAMILY WELFARE (SHRI A. RAJA)

(a) to (c) Information made available by the State Government of Assam and also gathered by the team deputed by the Ministry of Health and Family Welfare indicates that the deaths of children in Assam were not directly related to Vitamin A administration. Most of the deaths were found to be attributable to pre-existing causes and in some cases the children who died did not receive Vitamin A solution. The team of officers deputed by the Ministry of Health and Family Welfare reported that during the campaign, UNICEF had replaced the two mili-liter spoons usually supplied with the Vitamin A solution with 5 mili-liter cups, due to which some children might have received excess dose of Vitamin A, resulting in symptoms of toxicity. The analysis of Samples of Vitamin A lifted by the team indicated that they were of standard quality.

Government of India have advised State Governments to strengthen the routine programmes, ensure adequate and appropriate training of staff and desist from taking recourse to intervention-specific campaigns, including campaigns for Vitamin A.
Guwahati High Court  
Wednesday, 03-Sep-2003

• A two-judge panel of the Guwahati High Court, Assam

• The court convicted Unicef of introducing stronger doses of the vaccine by replacing the traditional two-milliliter spoon with five-milliliter cups.

• The court also said health workers were not properly trained, which led to the overdoses.

• A sum of Rs 5,000/- each shall be given by the Government of Assam to next of kin of the aforesaid 23 children as immediate interim relief, if not already been paid.
Current Status of VAD in India
Research Undertaken during 1999-2000

Sample Size = > 10,000 Children in each district
## Prevalence of Bitot’s Spots (< 6 years of age)
### Indian Council of Medical Research 2001

<table>
<thead>
<tr>
<th>Name of the district</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North India</strong></td>
<td></td>
</tr>
<tr>
<td>Mandi</td>
<td>0</td>
</tr>
<tr>
<td>Dehradun</td>
<td>0</td>
</tr>
<tr>
<td>Badaun</td>
<td>0</td>
</tr>
<tr>
<td>Mainpuri</td>
<td>0.02</td>
</tr>
<tr>
<td>Baramulla</td>
<td>0.03</td>
</tr>
<tr>
<td>Srinagar</td>
<td>0.04</td>
</tr>
<tr>
<td>Lakhimpur</td>
<td>0.46</td>
</tr>
<tr>
<td>Bikaner</td>
<td>1.10</td>
</tr>
</tbody>
</table>
## Prevalence of Bitot’s Spots (< 6 years of age)

**Indian Council of Medical research 2001**

<table>
<thead>
<tr>
<th>East India</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishnupur</td>
<td>0.06</td>
</tr>
<tr>
<td>Kohima</td>
<td>0.24</td>
</tr>
<tr>
<td><strong>Dibrugarh</strong></td>
<td><strong>0.30</strong></td>
</tr>
<tr>
<td><strong>Nagaon</strong></td>
<td><strong>0.30</strong></td>
</tr>
<tr>
<td>Patna</td>
<td>3.11</td>
</tr>
<tr>
<td>Gaya</td>
<td>4.71</td>
</tr>
</tbody>
</table>

**Indian Council of Medical research 2001**
### Prevalence of Bitot’s Spots (< 6 years of age)

**Indian Council of Medical research 2001**

<table>
<thead>
<tr>
<th>Region</th>
<th>District</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>South India</td>
<td>Mehboob Nagar</td>
<td>0.37</td>
</tr>
<tr>
<td>West India</td>
<td>Raigarh</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>All Districts</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Only 3/16 districts surveyed had VAD as a Public Health Problem

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**Indian Council of Medical research 2001**
Prevalence (%) of Bitot’s Spot 1-5 year children – States pooled:

1975-79: 1.8
1988-90: 0.7
1996-97: 0.7
2001: 0.8
2003: 0.8
2006: 0.6
Why Reduction in Clinical VAD

1. Reduction in Severe under nutrition 18% to less than 2%
2. High Immunization Coverage – specifically measles
3. Increase in Intake Vitamin A Rich Food
4. Wider use of Antibiotics
5. Reduction in Episodes of Morbidity
6. Reduction in Duration of Morbidity
7. Less episodes of ARI, Measles
8. Better Access to health care Facilities
October, 2005
Expert Committee of MOHFW, GOI

No.Z-28020/50/2003-CH
Government of India
Ministry of Health and Family Welfare
Department of Family Welfare
CH Section

Nirman Bhawan, New Delhi
Dated the 6th October 2005

Subject: - Forwarding of the Minutes of the Third Meeting of the Expert Committee constituted for Vitamin-A and Iron/ Folic Acid Supplementation on Reproductive and Child Health Programme held on 22nd July 2005

The undersigned is directed to forward the copy of the Minutes of the Third Meeting held on 22nd July, 2005 at ICMR Head Quarters, New Delhi on the above subject under the chairpersonship of Dr. N.K. Ganguly, Director General, ICMR and Chairman of the Expert Committee, for information please.

The issues relating to Iron/Folic Acid Supplementation were discussed.

(Dr. Sangeeta Saxena)
Assistant Commissioner (CH)
Tel.No.23017218
Regarding extending the current programme of vitamin A supplementation, Prof. Ganguly said that we should have data on vitamin A deficiency among children 36 to 71 months. Prof. Ganguly suggested that we may get this information from NIN, if available.

After detailed discussion on various issues related to vitamin A supplementation programme the following recommendations were made:

1. Under normal programme children between 9 months to 3 years are being provided vitamin A solution every six months (100000 IU at 9 months with measles and subsequently 200000 IU every six months till three years of age). Children with a clinical diagnosis of severe PEM* (visible severe wasting or oedema both feet) should be given an additional dose of 100000 I.U. vitamin A solution at the time of diagnosis (in the areas where IMNCI is not in operation, anganwadi growth chart may be used for assessing severe malnutrition). In severely malnourished children (weight for age; sd classification) above 3 years a single dose of vitamin A (200000 IU) is to be given at time of diagnosis by a Physician.
Indian Academy of Pediatrics (IAP)

Recommendations

- There is no compelling epidemiological data to indicate an increase in clinical vitamin A deficiency specifically in children above three years of age.

- Scientific evidence does not support the need for mega-dose supplementation in children above three years of age.

Indian Pediatrics 2005; Volume 42; 1009-1010

• November, 2005
Year 2006
Within 2 months Beneficiaries age group Increased up to 59 months

???????Some thing Happened
No.Z.28020/30/2003-CH
Government of India
Ministry of Health & Family Welfare
Department of Family Welfare
CHILD HEALTH DIVISION

1) The Secretary, Department of Health of All States/UTs
2) The Secretary, Department of Family Welfare of All States/UTs.
3) The Director of Family Welfare of All States/UTs.
5) The Country Representative, WHO (India), Nirman Bhawan, New Delhi.

Subject: Vitamin A & IFA Supplementation - Regarding -

Sir,

I am directed to say that the Government of India for quite some time has been examining the issues on the policy decisions on the Vitamin A Supplementation Programme for the Children in the Country, and has also been reconsidering the recommendations of the WHO, UNICEF and Ministry of Women & Child Development, in this aspect. It has been now decided to administer Vitamin A Supplement to all children nine months to five years of age. A Policy Note on the subject is also enclosed herewith. As such you may kindly take further needful and necessary action in the matter please.
MOHFW Guidelines on VAS January, 2006
Excerpts: MOHFW Letter

• Our country is making major strides of progress in economic & IT sectors and the social sector must strive to keep up the pace of change.

• Further the Vitamin A situation in our country continues to be grim and therefore after review of the policy it is henceforth the policy to supplement all children up to five years of age with Vitamin A

Scientific Evidence ??????????
Ensuring the quality of vitamin A capsules used in supplementation programs

Dear Sir:

We are writing to comment on a letter by Newton et al (1) that was published recently in the Journal. The authors raised important questions about the issue of the quality of vitamin A capsules used in the trial they discuss in the letter; however, their findings cannot be generalized to vitamin A supplementation programs.

Together, the United Nations Children’s Fund (UNICEF) and Micronutrient Initiative (MI) provide >95% of the global supply of vitamin A capsules. Therefore, they can confirm that >95% of the 100 000-IU and 200 000-IU vitamin A capsules manufactured, procured, and delivered through child survival programs and other public health programs to children <5 y old in >100 countries undergo rigorous quality-assurance procedures.

Venkatesh Mannar MI, Alan Court, Unicef
Who is being Benefitted ????

Globally there are Only 3-4 manufacturers of VA

1. BASF : Major
2. DSM : Major
3. Nicholas Piramal : Minor
4. Dioxine : Minor
TOTAL EXPENSES
($32.5 MILLION)

Prevalence
<1%
<80%
<10%

Vitamin A Procurement and Interventions 20.1 million
Iron Interventions 2.5 million
Iodine Interventions 5.0 million
Other Vitamin & Mineral Interventions 2.1 million
Management and Administration 2.8 million
Interpretation:

VA is an Immunisation and should be given to all Children like other vaccination.

VA is not a vaccine
BUT ANMs and AWWs, ASHAs are Requested to achieve Universal VAS same as for Immunizations.
Year 2011
F.No. Z-28020/46/2011-CH
Government of India
Ministry of health and Family Welfare
(Child Health Division)

4th April, 2011

Meeting Notice

Subject: Review of ‘Universal Vitamin A Supplementation to children up to 5 years’ under national programme

A half day meeting shall be held to discuss the current approach of Universal supplementation of Vitamin A under the national programme as well as to consider the scope and feasibility of adopting a ‘Targeted’ approach.

The meeting will be held on Tuesday, the 19th April, 2011 from 2.00 p.m. to 5.30 p.m. at 2nd Floor Committee Room, MOHFW, Nirman Bhawan, New Delhi.

Considering your expertise in the field of nutrition, you are requested to participate in the meeting.

(Dr. Sila Deb)
Assistant Commissioner(CH II)/ 23061218
4th April, 2011
Conclusions

1. The best estimate of VA contribution in reduction of Child mortality is 3-6%

2. Prevalence of VAD should be estimated in the country Till that time existing Policy should continue
All UN Agencies Converges

- USAID
- UNICEF
- MI
- WHO
- MOST
- WFP
- FAO
- MOHFW
  Nodal Administrator
- UNFPA
- UNDP
- WORLD BANK
- UNAIDS
- CARE
- AED
- A 2 Z
Strategy to be adopted in the 12th Plan

• Universal Vs Targeted Approach
• Purchase Medicines in Sub centre Kit decentarlised.
• District Level Assessment of VAD
• VAS in areas where VAD Symptoms and Signs are Observed
• UP., Bihar Vs Kerala, HP,
• High Risk Population Desert, drought Prone

• ANMs and AWWs are aware about the local terminology of Night blindness and Bitots spot

• VAS for Prevention of Nutritional Blindness NOT for Reduction in U5 Mortality Rate

• Results of DEVTA trial in March Issue of Lancet
Prevalence of Vitamin A Deficiency in Preschool Children ($1 \geq 5$) in India (NNMB SURVEY: 1975-1985-87) Percentage with Bitot’s Spot

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AP</th>
<th>GJ</th>
<th>Kerala</th>
<th>KK</th>
<th>Orissa</th>
<th>MH</th>
<th>MP</th>
<th>TN</th>
<th>UP</th>
<th>WB</th>
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<tbody>
<tr>
<td>1974</td>
<td>0.8</td>
<td>0.0</td>
<td>0.0</td>
<td>1.1</td>
<td>1.4</td>
<td>0.0</td>
<td>0.9</td>
<td>2.2</td>
<td>0.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1975</td>
<td>0.7</td>
<td>0.3</td>
<td>0.6</td>
<td>3.4</td>
<td>NC</td>
<td>0.3</td>
<td>NC</td>
<td>NC</td>
<td>0.7</td>
<td>0.0</td>
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<tr>
<td>1976</td>
<td>4.1</td>
<td>1.4</td>
<td>0.0</td>
<td>2.8</td>
<td>NC</td>
<td>0.0</td>
<td>0.6</td>
<td>5.1</td>
<td>3.0</td>
<td>0.5</td>
</tr>
<tr>
<td>1977</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1978</td>
<td>4.1</td>
<td>1.1</td>
<td>0.0</td>
<td>2.0</td>
<td>1.3</td>
<td>0.8</td>
<td>0.0</td>
<td>3.4</td>
<td>2.7</td>
<td>1.5</td>
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<tr>
<td>1979</td>
<td>0.8</td>
<td>0.0</td>
<td>0.0</td>
<td>1.1</td>
<td>1.4</td>
<td>0.0</td>
<td>0.9</td>
<td>2.2</td>
<td>0.0</td>
<td>1.0</td>
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<tr>
<td>1980</td>
<td>4.4</td>
<td>1.4</td>
<td>0.0</td>
<td>3.3</td>
<td>2.0</td>
<td>NC</td>
<td>NC</td>
<td>1.6</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>1981</td>
<td>3.3</td>
<td>5.6</td>
<td>NC</td>
<td>1.1</td>
<td>3.3</td>
<td>5.7</td>
<td>NC</td>
<td>1.4</td>
<td>1.0</td>
<td>2.1</td>
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<tr>
<td>1982</td>
<td>1.8</td>
<td>1.8</td>
<td>0.0</td>
<td>1.6</td>
<td>0.8</td>
<td>3.1</td>
<td>NC</td>
<td>3.8</td>
<td>NC</td>
<td>4.9</td>
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<tr>
<td>1983-84</td>
<td>4.9</td>
<td>0.7</td>
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<td>NC</td>
<td>6.0</td>
<td>NC</td>
<td>NC</td>
<td>9.9</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>1985-87</td>
<td>0.2</td>
<td>1.1</td>
<td>0.4</td>
<td>1.4</td>
<td>1.9</td>
<td>4.2</td>
<td>NC</td>
<td>5.6</td>
<td>NC</td>
<td>2.3</td>
</tr>
</tbody>
</table>
VAS In Kerala State

• Why Universal VAS in Kerala when VAD has not been a Public Health Problem during last 35 years

• VA is being administered with bi-annual campaign approach
<table>
<thead>
<tr>
<th>States / UTs</th>
<th>UNDER 5 MORTALITY RATE 2010</th>
<th>INFANT MORTALITY RATE 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>West Bengal</td>
<td>32</td>
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<tr>
<td>Delhi</td>
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<tr>
<td>Maharashtra</td>
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<td>Tamil Nadu</td>
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<tr>
<td>Kerala</td>
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</table>

No reduction in U5 Mortality can be achieved
<table>
<thead>
<tr>
<th>States / UTs</th>
<th>UNDER 5 MORTALITY RATE 2010</th>
<th>INFANT MORTALITY RATE 2011</th>
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</thead>
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<tr>
<td>Pondicherry</td>
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<td>19</td>
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<tr>
<td>Goa</td>
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<td>11</td>
</tr>
<tr>
<td>Manipur</td>
<td>Not Available</td>
<td>11</td>
</tr>
</tbody>
</table>

No reduction in U5 Mortality can be achieved

Sub Centre Kit A which has VA Bottles were distributed to all states as per the number of ANMS sanctioned by GOI

Wastage
Only 20% of 6-59 received Mega dose of VA in last 6 months: What happens to 80% procured / supplied
**Triple A approach**

Assessment the VAD
Analysis of the causes of VAD and
Action accordingly

If there is low measles Immunization amongst children;

Action: is to give measles immunization

**NOT** to administer VA to prevent post measles eye complications
Scientist

Child

??Administrator
Many Thanks for Your Kind Attention
Cost Analysis of the National Vitamin A Supplementation Programs in Ghana, Nepal, and Zambia

Synthesis of Three Studies
<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost per Child /year</th>
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</thead>
<tbody>
<tr>
<td>Program-specific Costs</td>
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<tr>
<td>Personnel Costs</td>
<td>0.55</td>
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<tr>
<td>Capital Costs</td>
<td>0.17</td>
</tr>
<tr>
<td>Total Costs</td>
<td>1.14</td>
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</tbody>
</table>
Cost of VAS to U5 Children

- One USD = Rs 45
- 1.14 USD = Rs 50

- Total Number of U5 Children 15% = 160 million children (15% of 1200 million population of India)

- 160 X Rs 50 (for 2 dose of VA every Year)

- = 8,000 Million Rupees
• Single dose of VA = Rs 2
• Cost per year for 2 doses  Rs. 4/-
• 1200 million population : 12 % U5 =144 million children
• 144 x 4 = 576 Million Rupees for all time to come
• In addition we have direct procurement and supplies by International agencies, which is met from India country Budget
• Interpretation DEVTA contradicts the expectation from other trials that vitamin A supplementation would reduce child mortality by 20–30%, but cannot rule out some more modest effect.

• Meta-analysis of DEVTA plus eight previous randomised trials of supplementation (in various different populations) yielded a weighted average mortality reduction of 11% (95% CI 5–16, p=0·00015), reliably contradicting the hypothesis of no effect.
• Why 2 districts namely Dibrugarh and Nagoan, were covered when VAD was not a Public health Problem
• Dibrugarh Prevalence of BS : 0.30
• Nagaon Prevalence of BS : 0.30

• Why children 6-59 mo were given VAS when National guidelines were for 6-35 mo of age
• Was there an Epidemic of VAD ??
4.1.90 During the past few years, series of expert consultations were held among various stakeholders. In view of disaggregated age-wise prevalence of VAD in children (NNMB reports), all these stakeholders recommended extending the programme to cover children up to five years. Consequently, MoHFW, GoI, issued guidelines to the States in November 2006 extending the programme to cover up to five years.