

Malnutrition

Experience in Sultanate of Oman

Dr Salima almary
Family physician
Nutrition Department

Outline

- Country profile
- Malnutrition prevalence in Oman and interventions done to reduce it
- Fortification of Food
- Supplementation of vitamins

Country profile

- Total population 4,594,285
- Omani population = 2,487,393
- 15 % of Omani Population are under five yrs = 373,108
- Total Fertility Rate 3.9 in 2015
- Life expectancy = 77 yrs
- Mortality rate for under 5 yrs of age = 11.4 per 1000 live birth
- GDP = 69.831 USD



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- The problem of child malnutrition had been recognized as a public health problem in Oman in 1995 .
 - The First National Health Survey for Protein Energy Malnutrition was conducted in 1999.

First National Health Survey for Protein Energy Malnutrition 1999

Wasting	7 %
Stunting	10.6 %
Underweight	17.9 %

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- Qualitative Study on perception , attitude and beliefs in Oman towards nutrition of under 5 yr of age was conducted in 2002.
 - From this study the most important risk factor for malnutrition in under 5 children was identified.

Risk Factors related to Malnutrition among children < 5yrs of age :

- Lack of nutritional awareness on malnutrition and its consequences
- High frequency of pregnancies and deliveries (poor birth spacing)
- Limited participation of male partner
- Malnutrition management system was not integrated into health care
- Lack of strategy to promote proper infant and young child feeding
- Inadequate maternal nutritional status
- Low compliance to iron supplements among pregnant women

National Strategy to combat malnutrition was introduced in 2004 with objective to reduce malnutrition from 17.9% to less than 5% in 2010

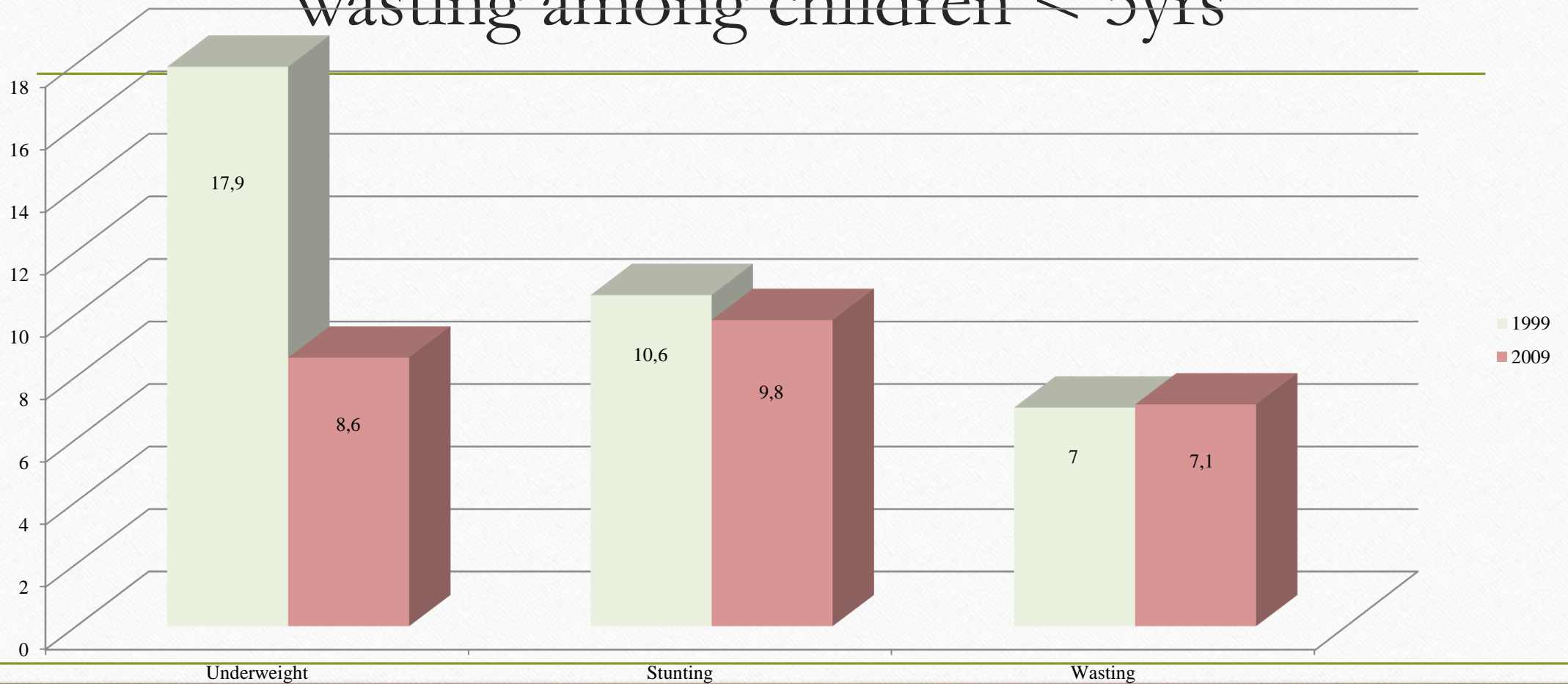
- Social marketing for infant feeding with involvement of multiple sectors in the community
- Integrate malnutrition prevention and control programs into the health care services
- A manual on Standard Operating Procedures for the Management of PEM was developed in 2004. The manual had been updated.
- Establish sufficient number of nutrition clinics with well trained staff
- Promotion of breast feeding and strengthening of BFHI program
- Empowerment of birth spacing practices
- Prevention and control of micronutrient deficiencies among children and pregnant lady

**The Second National Health Survey for
Protein Energy Malnutrition
In Children below Five Years of Age
in 2009**

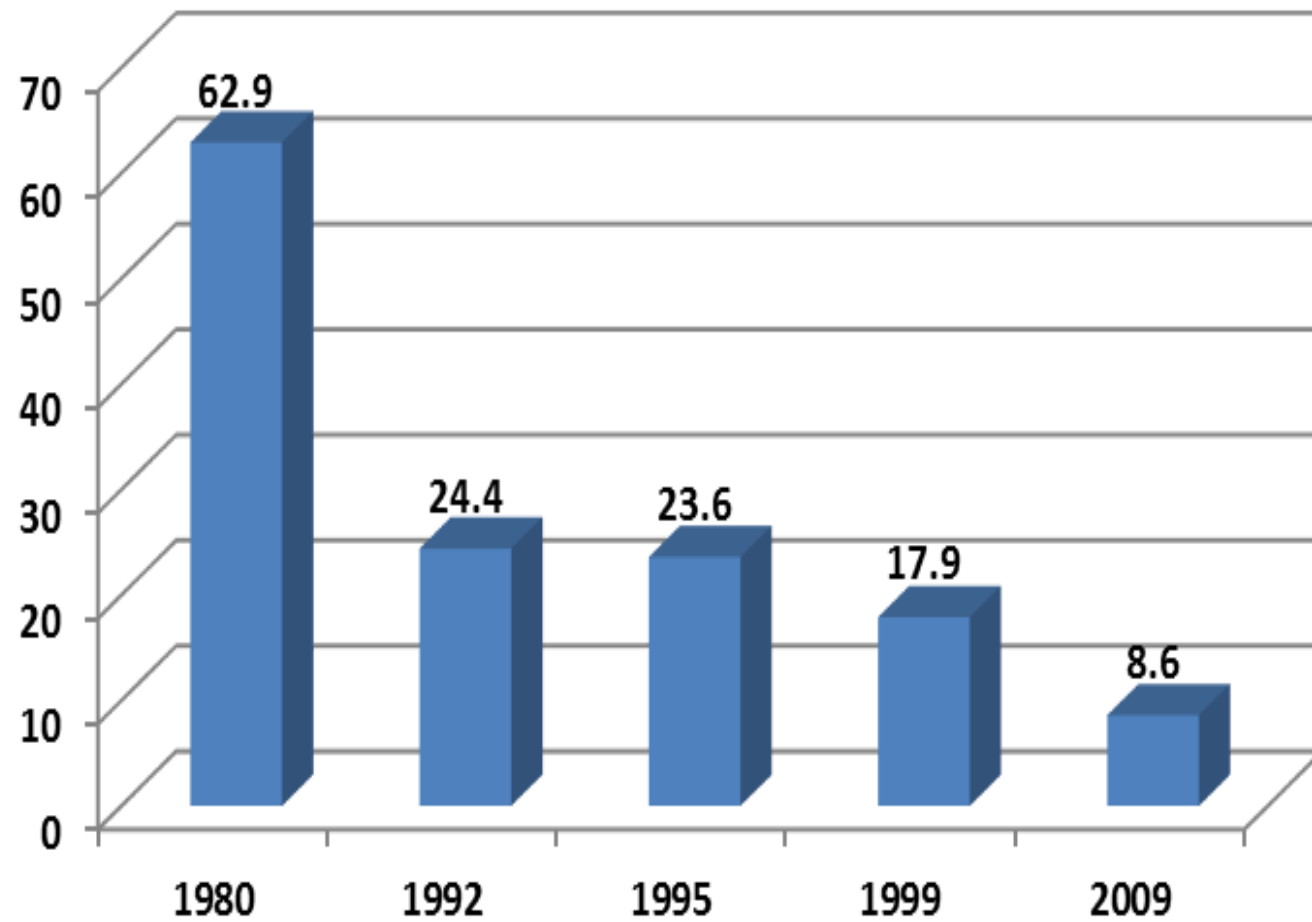
The Second National Health Survey for Protein Energy Malnutrition In Children below Five Years of Age 2009

Wasting	7.1
Stunting	9.8
Underweight	8.6
Overweight + Obesity	2.4

Prevalence of underweight, stunting and wasting among children < 5yrs



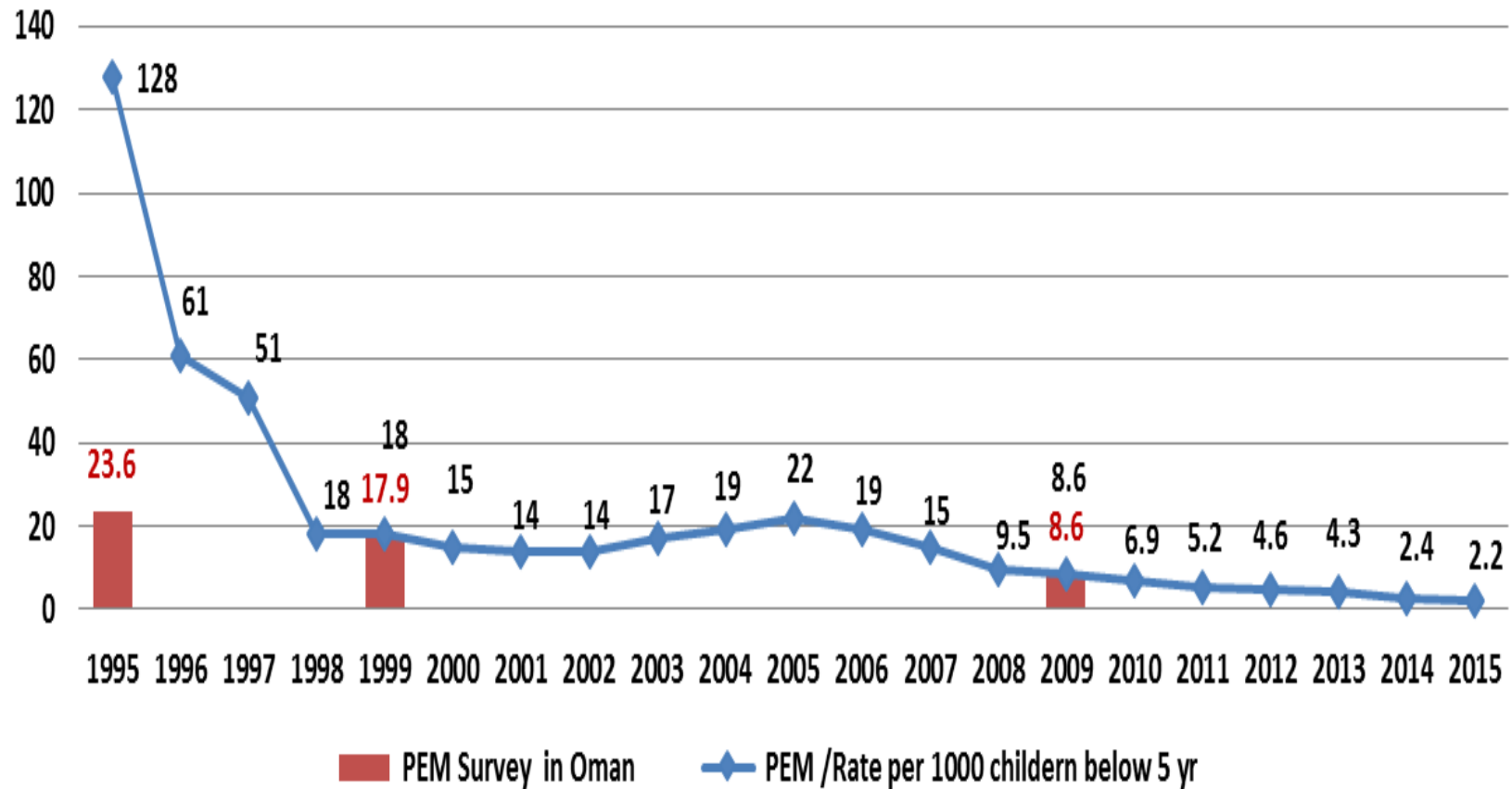
Trend of Underweight in Oman From PEM survey 1980 to 2009



Interventions

- National Social Campaign of child Nutrition in 2010 targeted mother and father.
- SOP for management of malnutrition in infant and young children was updated in 2010
- Prevention of low birth weight (iron , folate supplements and fortification of maternal food intake.
- Implementation of the Global Strategy for Infant and Young Child Feeding which support breast feeding.
- Protection from inappropriate marketing of breast milk substitutes.
- Community Integration Management of Childhood Illnesses(IMCI)
- Strengthening growth monitoring by skilled staff and enhance the current nutrition surveillance

Trend of PEM in Oman



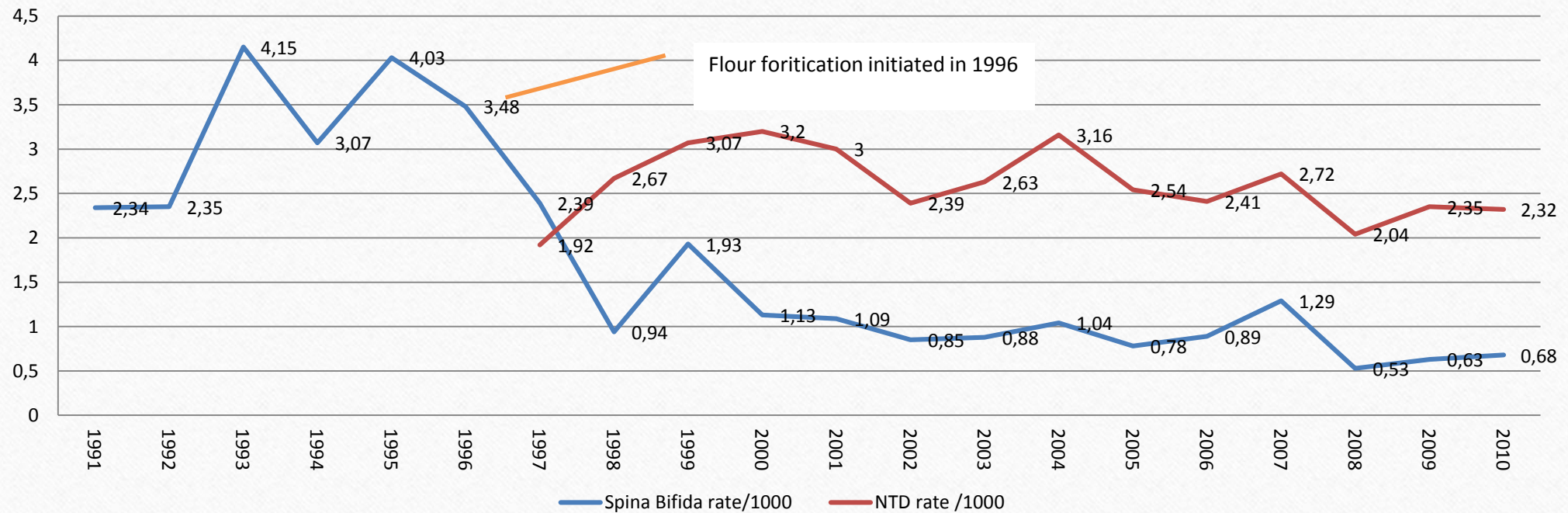
Fortification Programme

- Oman's government has implemented various programs to combat micronutrient malnutrition over the past two decades since 1996 including:
- salt **iodization**
- fortification of wheat flour with **iron** and **folate**
- fortification of edible oil with **vitamins A** and **D**.

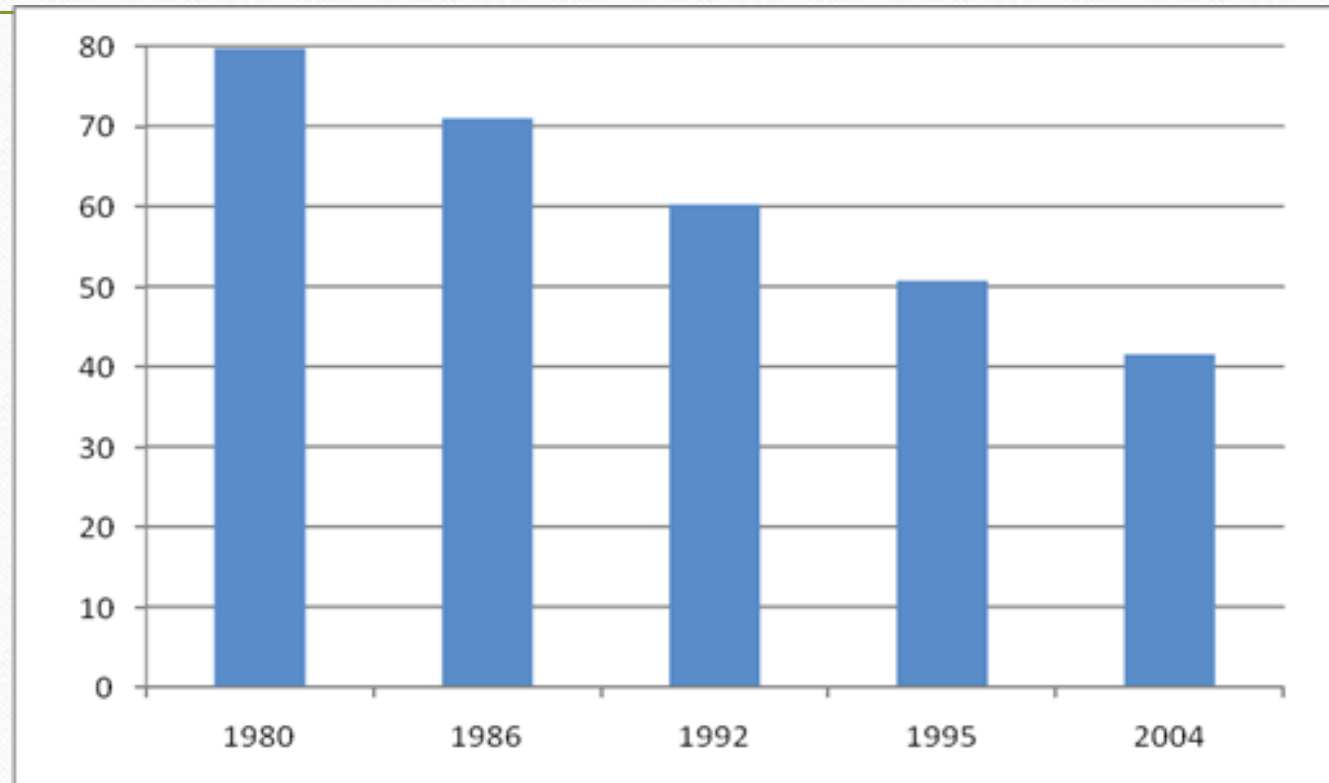
Micronutrient

- Flour fortification was initiated in Oman in 1996 with a national legislation that requires all white flour in the country to be fortified with **iron** and **folic acid**.
- The most pronounced outcome observed was that of folate fortification. Reduction of **Spina Bifida** to less than 20% of its original rate is a significant achievement .
- Incidence of Spina Bifida as well as other congenital disorders reported from 1991 to 2010. Spina Bifida went down from 3.48 to 0.68 per 1000 births

Neural Tube Defects and Spina Bifida in Oman 1991-2010



Anemia and Iron Deficiency among infants and young children



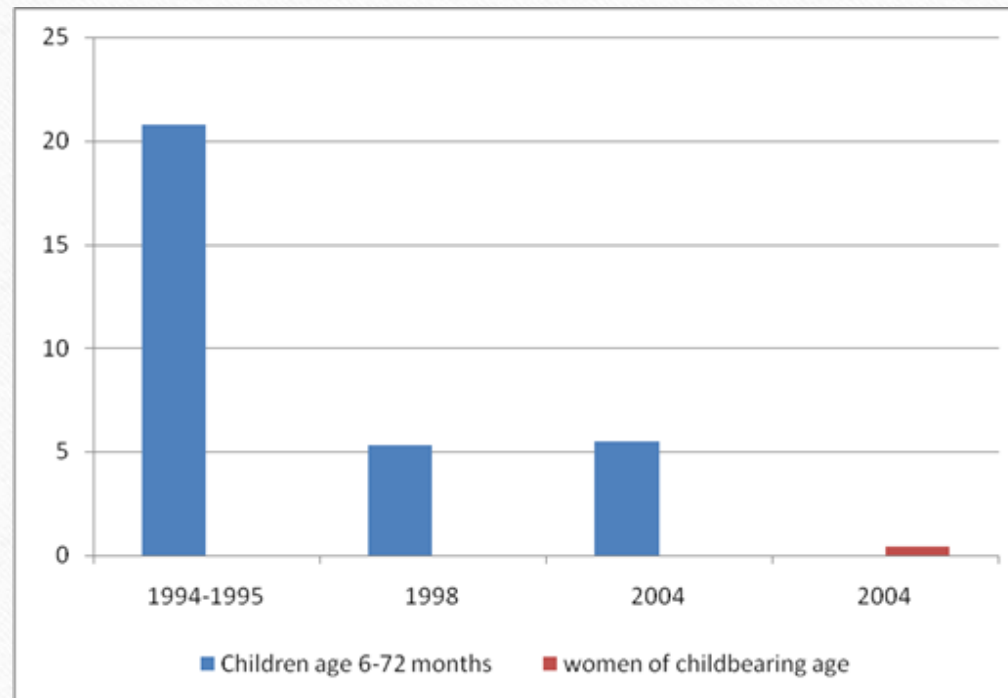
2009 survey anemia in children under 5

National Indicators of Anemia Hb level						
nd PEM09 Oman2	Male		Female		Total	
National	%	(95%CI)	%	(95%CI)	%	(95%CI)
Anemic (Hb < 11 gm/dl)	60.2	(45.5-73.3)	61.0	(45.8-74.4)	60.6	(45.7-73.9)
Severe Anemia (Hb < 7 gm/dl)	0.6	(0.2-1.9)	0.6	(0.2-1.4)	0.6	(0.2-1.6)
Moderate Anemia (7 to Hb < 9 gm/dl)	10.8	(4.7-22.9)	8.0	(3.9-15.8)	9.3	(4.3-19.1)
Mild Anemia (9 to Hb <11 gm/dl)	48.8	(42.8-54.9)	52.5	(43.3-61.4)	50.7	(43.1-58.2)

Iodine deficiency

- The food fortification survey in 2004 showed that the prevalence of UI $<100 \mu\text{g/L}$ (mild severity) was 16.8% and the prevalence of UI $<50 \mu\text{g/L}$ (moderate severity) was 4.9%.
- These results indicate that the IDD had been controlled in Oman; however monitoring the salt iodization coverage is essential to ensure continuity of this success.

Trend in sub-clinical vitamin A deficiency (serum retinol levels $<0.7 \mu\text{mol/l}$ among infants and prevalence among women in child bearing age in 2004.



Supplementation programs

- ***Iron Supplementation:*** Supplementation of women with Iron / Folic Acid began in 1990 and continues to date
- ***Vitamin A supplementation:*** A national vitamin A supplementation program was started in 1998 and continues to this date targeted children at 12m + 18m and post-partum women.

Current programs/activities

- National Nutritional survey is currently undertaken
- National plan to combat childhood obesity
- Revitalizing the BFHI Program
- Updating the current 'Omani Code for Marketing of Breast milk Substitutes'
- Legislations to restrict marketing of unhealthy food for children
- National plans to reduce fat , salt and sugar .



سلطنة عمان
وزارة الصحة

SULTANATE OF OMAN
MINISTRY OF HEALTH

سجل تغذية الطفل
CHILD NUTRITION REGISTER

RG-28



Ministry of Health
Sultanate of Oman

Standard Operative Procedure
For Management of Malnutrition

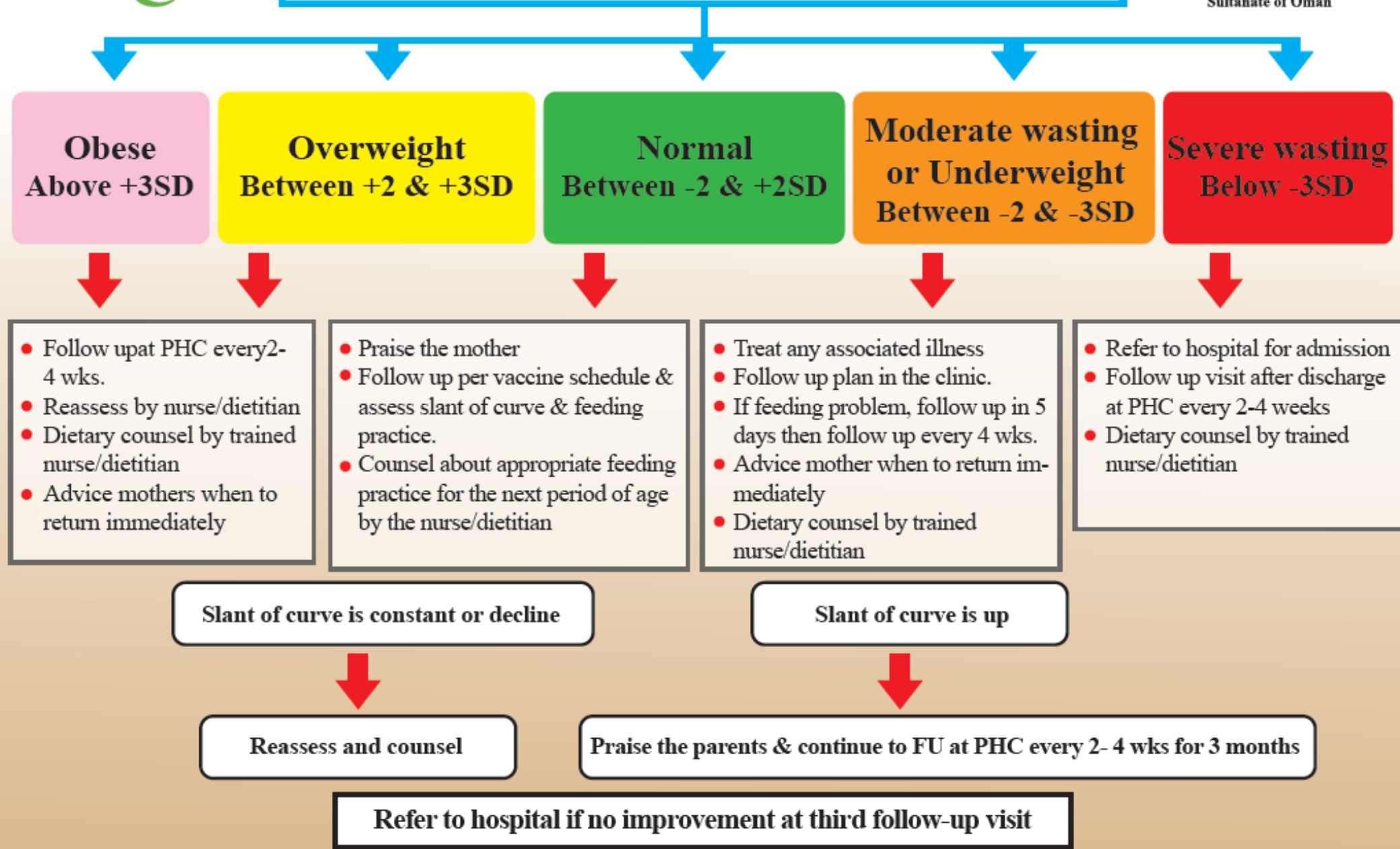
IN INFANTS & YOUNG CHILDREN
AT PRIMARY HEALTH CARE SERVICES



DIRECTORATE GENERAL OF PRIMARY HEALTH CARE
DEPARTMENT OF NUTRITION

MANAGEMENT OF MALNUTRITION

in Children under 5 years



Classification & Management of Anaemia in Children under 5 years

**Normal
HB level
11 g/dl or more**



- Compliment mother.
- Advice mother about continuation of breast feeding, Complementary feeding and iron rich food
- Importance of regular follow up for recording weight.

**Mild & Moderate Anaemia
HB level from
7 to <11 g/dl**



- Do sickling test, G-6PD TEST
- Identify the etiological causes of IDA & Exclude other non-nutritional causes of anemia in suspected cases.
- Start oral iron (3 mg/ Kg/ day elemental iron) single dose for 3 months (not to exceed 60 mg daily)
- Advice the mother about Complementary food and iron rich food
- Follow up in 14 days to assess the child nutrition, compliance and side effects if present
- Repeat HB test every month and Continue iron supplementation for 3 months once there is improvement in HB concentration

**Severe Anaemia
HB level
Below 7 g/ dl**



Refer to hospital for further investigations & management

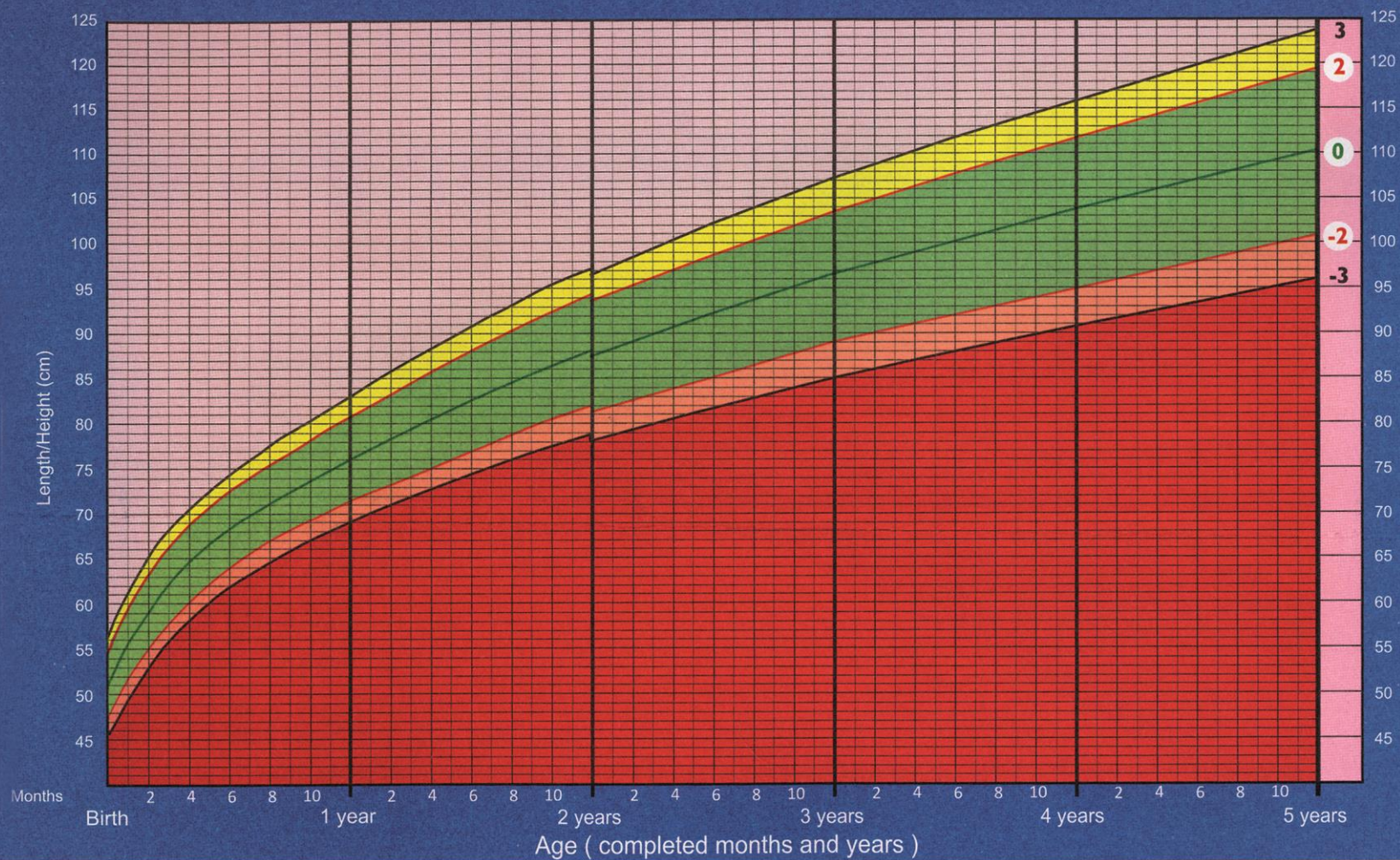
Follow Up Management/ Follow up all cases every month (HB TEST & NUTRITIONAL ASSESSMENT) for 3 consecutive months. If no improvement after one month of therapy, refer to specialist / or hospital for further investigations. If there is improvement, compliment mother and continue treatment for three months.

THEN CHECK THE CHILD'S IMMUNIZATION AND VITAMIN A SUPPLEMENTATION STATUS

Length/height-for-age BOYS



Birth to 5 Years (z-scores)





هيا نلعب ونتعلم أشياء مسلية
و ممتعة عن الطعام المفيد



أسرتك تحتاج رعايتك

لأنك الفرد الأهم في الأسرة، و دورك أساسي في أن
تجعلهم سعداء، يجب أن تشاركهم كل أمورهم.



إمنح نفسك السعادة
باللعب مع أولادك



إمنحهم الصحة الجيدة بأن
تختار لهم الطعام المغذي



إستشر الطبيب دائماً حتى
تظل أسرتك بصحة جيدة



ساند زوجتك في أعمال
البيت وتربية أطفالكما



صحة الطفل

دليل صحة الطفل،
ومراحل نموه ووجباته.



Thank you