

## **Anemia Prevention and Control Programme for the Central Asian Republics and Kazakstan (CARK: APC)**

**Gary R. Gleason, Ph.D., Programme Director, International Nutrition Foundation  
Umit Kartoglu, M.D., Health Officer, UNICEF Area Office for the  
Central Asian Republics and Kazakstan**

for the

**IV Regional Congress of Pediatric Societies of Turkish Speaking Countries  
Baku, Azerbaijan 21-25 September 1997**

As we have heard, Anemia is associated with impaired physical and cognitive development in children, poor mental and physical performance in adults, increased risks of infectious diseases, and numerous other problems.

We have also heard that the rates of iron deficiency anemia are high in both children and women, and that damage is being done to many more persons who are iron deficient but not yet anemic.

UNICEF, the United Nations University, International Nutrition Foundation, and the Institute of Nutrition in Kazakstan have been working closely with the Governments of CARK for the past three years to develop an appropriate and comprehensive strategy to address this problem.

At surface level, the methods for preventing and controlling iron deficiency anemia are long established. The most logical method is to cause a dietary change that assure adequate iron consumption and absorption. While simple in concept, dietary change is in reality highly complex and often extremely difficult. Most programmes set up to prevent iron deficiency anemia have been limited to specific target groups such as pregnant anemic women. In general, these programmes combine periodic oral supplementation with tablets containing iron and dietary advice. In many countries this approach is further supported by wide scale fortification of basic food stuffs, mainly cereal flour with iron.

Now, as Professor Scimshaw has noted, a new tool for anemia prevention and control has been added. The newer weekly supplementation protocols appears to be more effective and less expensive. Along with powerful efforts at nutrition education and needed research, changing to the weekly protocol, widening the target groups for supplementation can strengthen, and introducing fortification of cereal flours and strengthen the strategy for anemia prevention and control in this part of the world.

Between 1994 and 1997 several developments have contributed to elaboration of a comprehensive and cost efficient strategy for combating iron deficiency anemia. These include:

- a) articulation and promotion of four essential steps to anemia prevention - education, fortification, supplementation and research - at the CARK National Nutrition Policy Conference, March 1996,
- b) fortification of wheat flour with ferrous sulphate effectively initiated in the Kyrgyz Republic and Turkmenistan,
- c) growing international consensus on weekly iron tablet supplementation for prevention of anemia in high risk groups,
- d) acceleration of the accumulation of data in 1996 and 1997 highlighting the public health crisis proportions of iron deficiency anemia in CARK, and,
- e) steadily growing institutional capacity and leadership demonstrated by the Nutrition Institute of Aimaty, Kazakstan.

In developing this programme, we have looked carefully at the reasons that programmes with a supplementation strategy included have not been to successful in the past and considered each factor in the context of these countries, their health systems and characteristics of their populations..

**Iron Supplementation: Analysis of Factors Affecting Potential Success in Central Asia**

General Constraints on Success with Supplementation	Factors related to General Constraints in the Central Asian Republics and Kazakstan
Lack of knowledge and concern about anemia	There is strong knowledge and concern about anemia in the health community Broad familiarity in the general populations Populations are literate and medical service oriented.
Individuals do not perceive themselves to be ill	There is a poor perception of illnesses related to anemia A large scale public education is being designed to help people recognize the signs of anemia understand the risk of anemia Media channels for such education are available and open at low cost.
Forgetfulness or lack of motivation to take a supplement frequently (daily) and over a long period of time	Weekly supplementation protocols will be joined to national/area education campaigns Focus on increasing a motivation to take the pill Side effects are effectively reduced Mothers are literate. Subnational programme will develop needed tools and strategies for compliance
Gastro-intestinal side effects such as nausea, diarrhoea, constipation, and gastric discomfort, which are dose-related	Side effects significantly reduced by a weekly supplementation
Unacceptable colour, taste or other characteristic of the supplement	No problem foreseen supplementing for women young children to have suspension
Fear that the supplement is a contraceptive	Not an issue.
Lack of supportive education and counseling	Good counseling and education to be an integral part of programme supplementation to include improved dietary management, better breastfeeding practices, avoidance of iron absorption inhibitors, etc.
Lack of compliance by functionaries to their work protocol	PHC level staff in Central Asia carries out their duties well if given clear instructions through a strong training strategy and necessary supplies.
Poor distribution and/or supply of supplements to delivery outlets	As proven throughout Central Asia, the drug distribution systems can be effective and monitored to PHC level Girls and women of childbearing age will be challenge of distribution, counseling and education.

Another factor allowing rapid development of an implementation plan was the experience gained through technical assistance and advocacy related to successful efforts of wheat flour in the Kyrgyz republic and Turkmenistan.

In February 1997 during a UNICEF, UNU consultation on nutrition in the Central Asian Republics and Kazakhstan, held at the Institute of Nutrition in Almaty, one key session was devoted to the problem of iron deficiency anemia and elaboration of a CARK area-wide strategy to reducing this problem. Subsequently, during a meeting in Turkmenistan of Parliamentarians from all five countries. Nutrition was the major agenda point. It was at this meeting that UNICEF agreed to start treating iron deficiency anemia as a public health crisis in the area.

The general strategy for Anemia prevention and control that had been drafted with the Institute of Nutrition, Dr. Scrimshaw and several Government specialists in the area was taken before the Working Group on Iron Deficiency of the United Nations Subcommittee on Nutrition (SCN) in Kathmandu, Nepal. The overall recommendations from the working group to the 24<sup>th</sup> Meeting of the SCN were:

- a) High prevalence rates for iron deficiency anemia in many developing countries constitute a public health emergency equivalent to epidemics of infectious diseases, and have more lasting adverse consequences for survivors.
- 2) Intervention approach must be multiple and integrated to include concurrently food fortification with iron, health measures to reduce conditions contributing to iron loss, iron supplementation for vulnerable groups, and food-based approaches designed as a permanent solution to iron deficiency as a public health problem.
- c) The proposal to initiate an aggressive, holistic approach to the serious problem of iron deficiency anemia in Central Asia as revealed in recent surveys was strongly endorsed, and should be a well-documented test of the practicality of current preventive strategies.
- 4) Evidence for the role of maternal anemia on maternal mortality and other pregnancy outcomes should be reviewed and given wide dissemination to assist in programme advocacy.
- e) In addition to food fortification as a permanent dietary approach, a social marketing approach should be applied to improve the available iron in the diet, through increasing vitamin C consumption to enhance absorption, promoting foods with available iron, and minimizing the impact of inhibitors of iron absorption in foods.

#### **The Strategy for Anemia Prevention and Control in the Central Asia and Kazakstan**

The proposed a strategy for prevention and control of iron deficiency anemia is based on UNICEF/WHO Guidelines including the following elements:

- 1) National and area-wide education and training efforts aimed at affordable and acceptable dietary change in the environments of economic transition<sup>1</sup>
- b) Fortification of cereal flours with iron.
- 3) A major expansion for a period of two years of iron supplementation (weekly) to encompass
  - 1) women of child bearing age<sup>2</sup>
  - 2) children from six to twelve months of age
  - 3) children 12-24 months of age

---

<sup>1</sup> Major education campaigns would be build on existing models developed in collaboration with UNICEF for issues such as breastfeeding promotion, control of acute respiratory infections, control of diarrhoea diseases and promotion of improved sanitation and hygiene practices. Institutional support and initial message development and testing in subnational areas would be done in collaboration with oblast level media, departments of health and education and the Communication Section of the Institute of Nutrition. Support for production materials and technical assistance would come from UNICEF and other donors.

<sup>2</sup> The aim of this intervention being to rapidly reduce current high levels of anemia among group and particularly those women with low levels of hemoglobin and iron stores before they came into pregnancy. Supplements would also include Folic Acid in order to eliminate Folic Acid deficiencies thereby reducing the risk of neural tube defects and enhancing the potential for better birth weights.

- 4) pregnant women<sup>3</sup>
- 4) For all persons found to be suffering from severe anemia (about one per cent of cases) current treatment practices would be retained.
- 5) A research agenda of key studies and monitoring activities by the Ministries of Health and other Institutions, beginning with a study of weekly supplementation effectiveness in all groups and action research on channels, messages and other factors to be discussed.

The elements of this strategy related to supplementation were recommended for action through a letter from the Director of the Institute of Nutrition, Kazakstan to the Ministers of Health of Kazakstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan in June 1997.

### The Proposed Anemia Prevention and Control (APC) Programme

The CARK APC is proposed to be carried out in four overlapping phases of activities over a period of 24-36 months beginning in mid-1997. The first phase began with work on project design in early 1997. It will continue until September 1997 and has been funded by UNICEF General resources and supplementary funds.

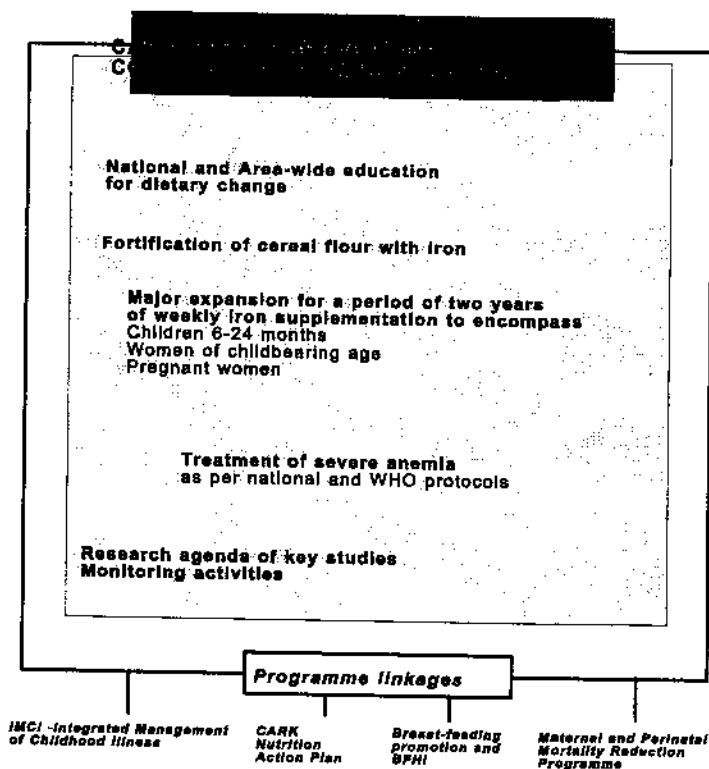
- Phase One: Complete development and Prepare for CARK: APC Subnational Implementation (8 months)  
 Phase Two: Implement CARK APC in five subnational areas:<sup>4</sup> (10-12 months)  
 Phase Three: National expansion of programme in five countries (12 months)  
 Phase Four: Programme review and evaluation; further planning (10 months)

Major resources for the project are broken into the following areas:

- 1) Supplies of Ferrous Sulphate w/ Folic Acid supplement tablets.
- b) Supplies and equipment to initiate fortification of flour at subnational levels in five countries
- 3) Funds for training activities.
- d) Funds for Information, Education and Communication.
- 5) Funds for Monitoring and Evaluation
- 6) Funds for programme management and support

Substantial technical assistance will be required for a period of 24-36 months.

Comments regarding the CARK: APC and how to participate or provide support are welcome and can be directed to the UNICEF CARK Area Office and the International Nutrition Foundation.<sup>5</sup>



<sup>3</sup> Untargeted weekly fortification of pregnant women with 120mg of FeSO<sub>4</sub> w/ 0.5mg Folic Acid combined with training/consultation and promotion through mass media and interpersonal channels to achieve high and sustained compliance.

<sup>4</sup> The oblasts of Kyzylorda, Kazakstan; Naryn and Talas, Kyrgyz Republic; Karakalpakstan, Uzbekistan; Kurgan-Tube or Khojent, Tajikistan; and Dashowuz, Turkmenistan will be the areas for Phase II Implementation.

<sup>5</sup> CARK Area Office: House 11 E-7 Islamabad, Pakistan e-mail: ebirerdinc@unicef.org and International Nutrition Foundation, POB 500 Charles Street Station, Boston, MA USA e-mail: unucpo@tiac.zork.net