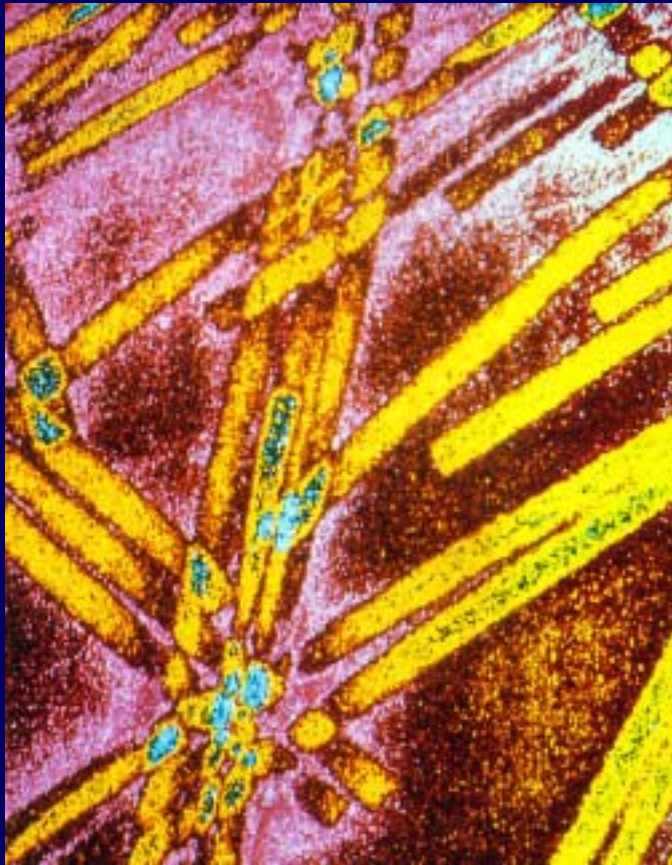


Anemia Prevention and Control (APC) in the central Asian republics and Kazakhstan (CARK)



Gary Gleason, Ph.D.
International Nutrition Foundation

Preventing Iron Deficiency Throughout the Life Cycle

Fetal Development

Infancy

Child Development

Adolescence

Reproductive Age

Adulthood

Pregnancy



ORAL SUPPLEMENTATION



FOOD FORTIFICATION



INFECTION CONTROL



PUBLIC HEALTH MEASURES



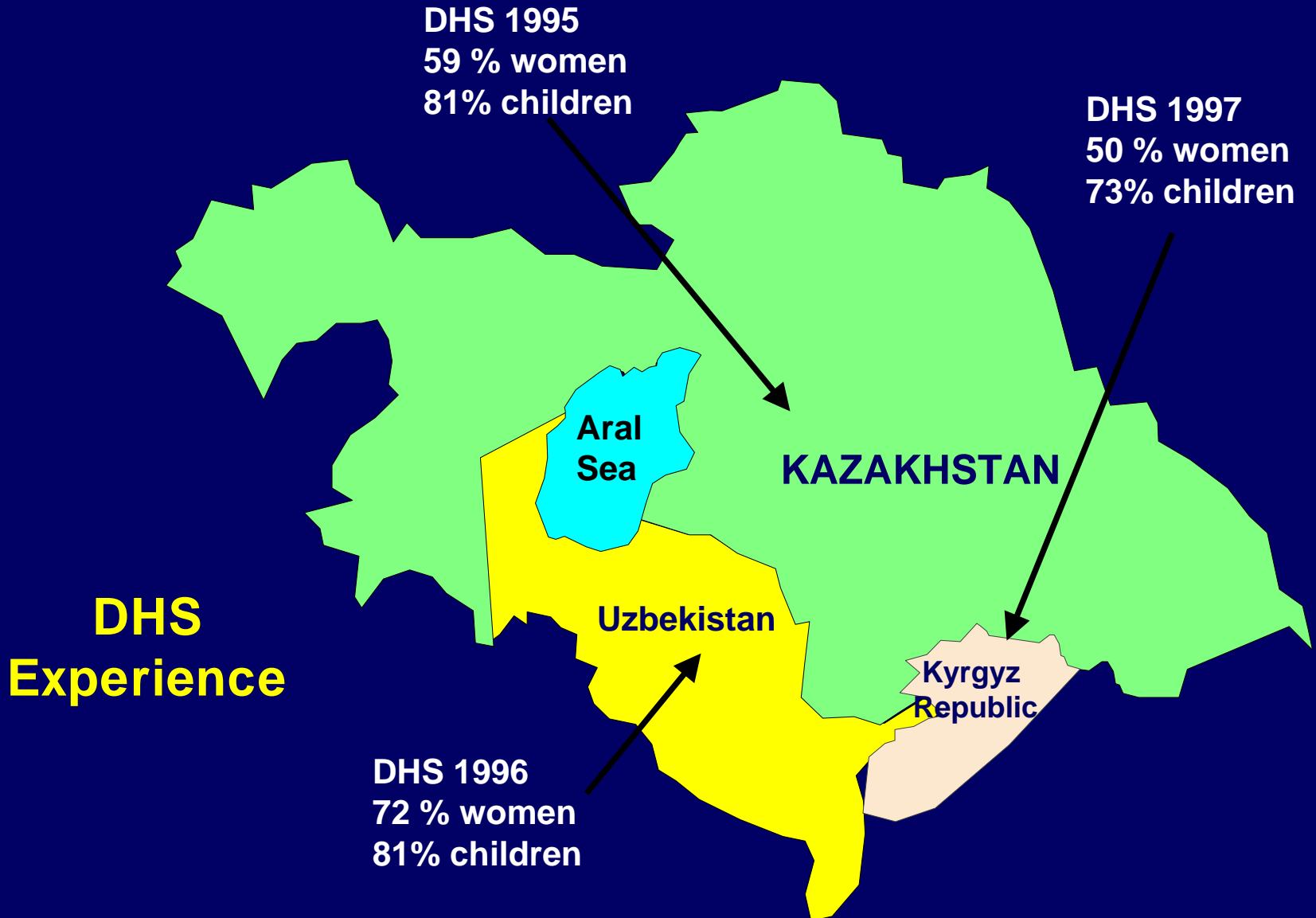
DIETARY EDUCATION

Monitoring and Research

Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan



High Prevalence of Anemia in CARK



Development of APC Strategy in CAR

1993: NIK study of changes in national diet 1988-1992

1994: Supplementation intervention study – Karkalpakstan, Uzbekistan (CrossLink International – USAID)

1995: Kyrgyz trial of FeSO + KIO₃ in Wheat flour (USAID/ UNICEF)

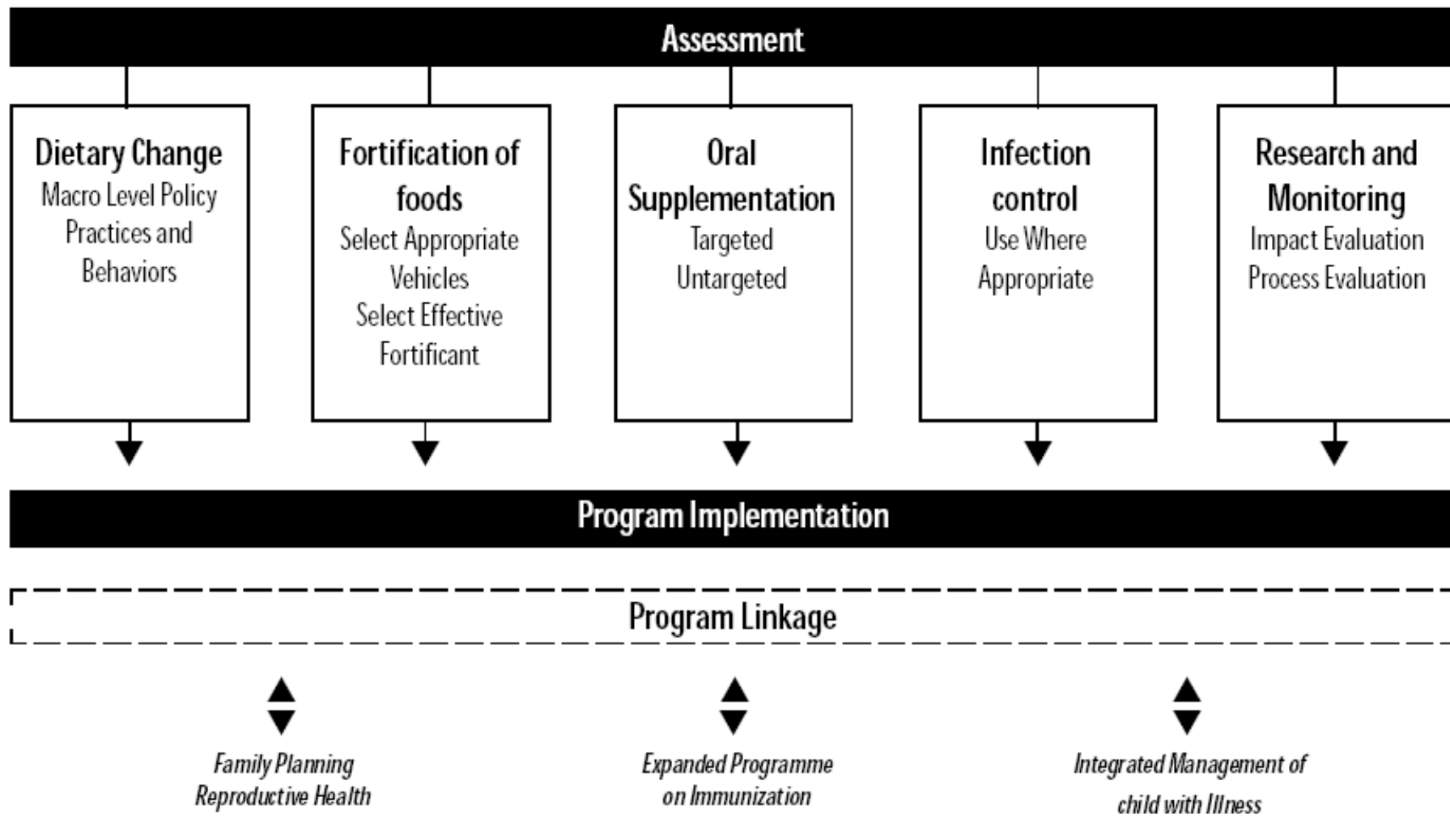
1995: Nutrition Action Plan for CARK (WHO/ UNDP/ UNU/ UNICEF)

1996: At meeting of CARK Parliamentarians (UNICEF/UNU)

1997: CARK APC Strategy and Call for Donor Support (UNICEF/CIDA/UNU/INF)

- Iron supplementation for children and women**
- Flour fortification**
- Nutrition education**
- Ongoing monitoring and key research**

CAR Strategy for APC



Phasing of CARK APC Strategy for APC

FIRST PHASE: (1995-1997) Advocacy and Research

SECOND PHASE (1998-99)

- **Developing interventions on Province (Oblast) Level**
 - **untargeted, weekly iron supplementation and nutrition education, children aged 6-24 months, women of reproductive age and pregnant women.**
- **Advocacy and work toward fortification of wheat flour.**
- **Monitoring and Review oblast level work**
- **National recommendations on Supplementation and Dietary Education**

THIRD PHASE (2001-2010)

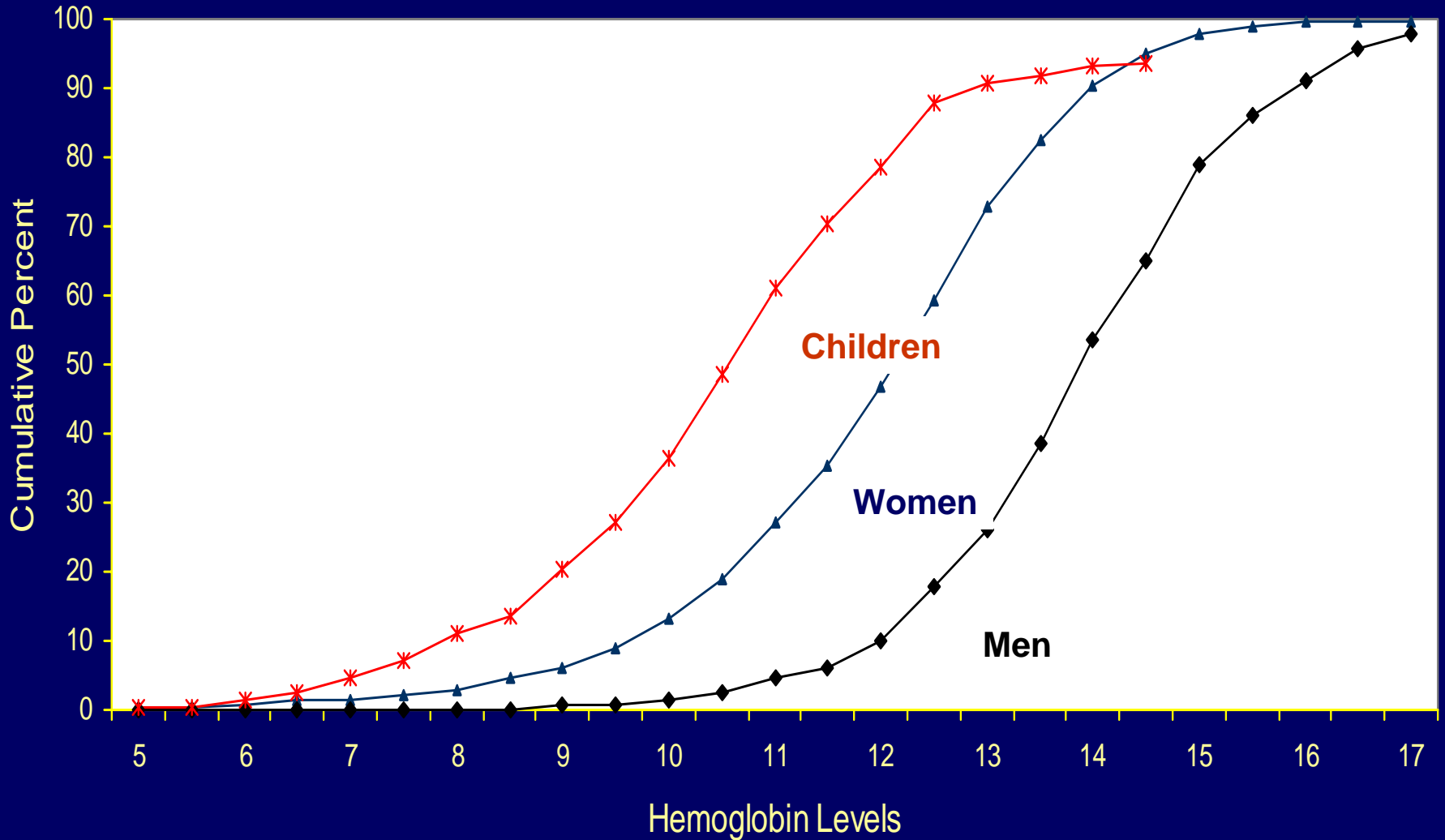
- **National program of supplementation**
- **Universal fortification of wheat flour**
- **Ongoing monitoring and improvement**



CARK APC Strategy Endorsed and Reinforced:

- 4/97: UN ACC/SCN Working Group on Micronutrients Nepal
- 10/98: International Pediatrics Association – Turkic Group (Baku, Azerbaijan)
- 1/99: Joint UNICEF WHO Regional Consultation on Prevention and Control Of Iron Deficiency
- **10/99: CARK MCH Forum of Deputy Health Ministers**
- 1999: CIDA 12 months re-supply of supplements
- 1999: Kazakhstan DHS shows IDA prominent cause of anemia

1999 Kazakhstan DHS



Probability Plots of Cumulative Percent Distributions for Hemoglobin Concentrations in Children, non-pregnant/non-lactating Women and in Men

Progress on CARK APC May 2001

- Kazakhstan, the Kyrgyz Republic, Tajikistan: new regulations permitting fortification of wheat flour.
- Turkmenistan: flour fortification began (Nov. 2000)
- New fortification efforts being planned in relation to ADB grant
- Reviews of oblast level supplementation and education activities in five countries completed (February – April 2001)



Oblast level reviews

- Preventive supplementation:
 - All women of reproductive age (60 mg FeSO₄ + .4 mg Folic Acid once per week)
 - All pregnant women (120 mg FeSO₄ + .8 mg Folic acid once per week)
 - All children 6-12 months (30 mg FeSO₄ syrup) once per week
 - All children 12-24 months (60 mg FeSO₄ + .4 mg Folic Acid once per week)
- Treatment as per national protocols
- Education for compliance and better iron nutrition

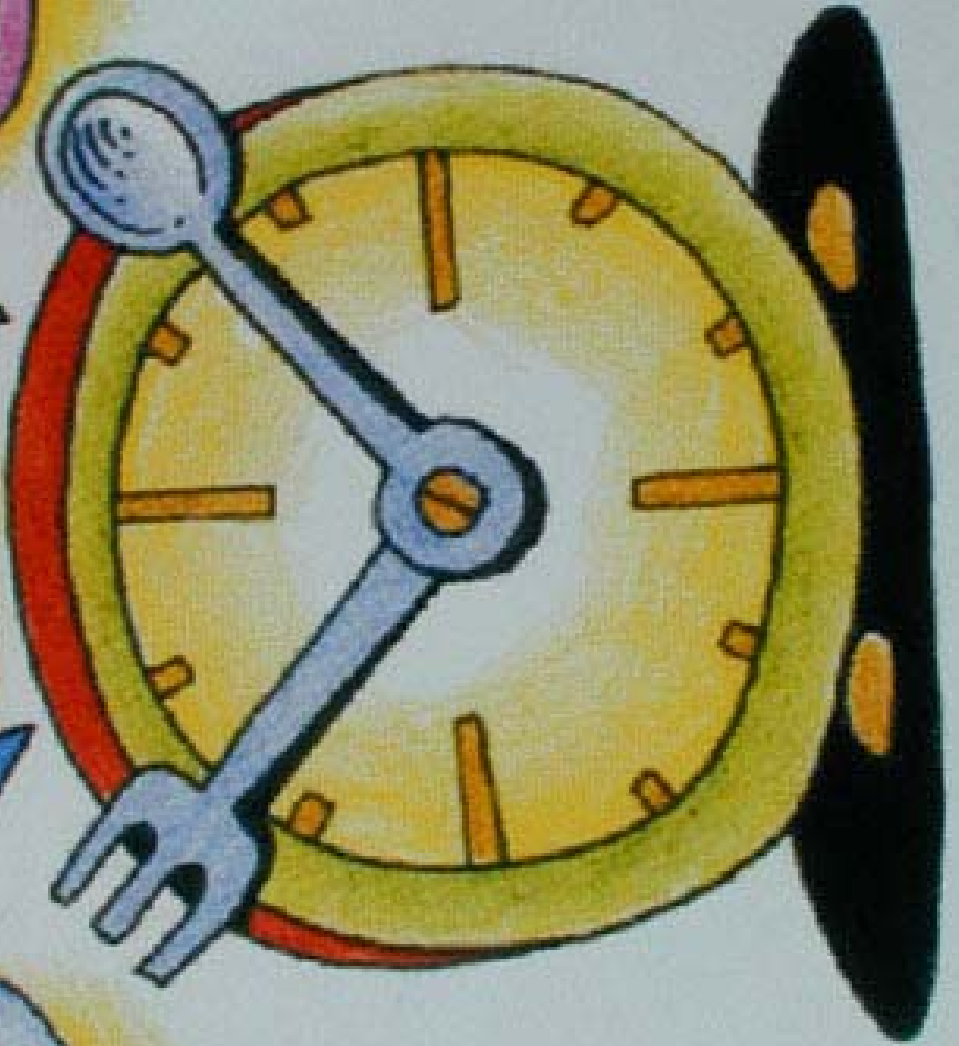


Oblast level reviews: method

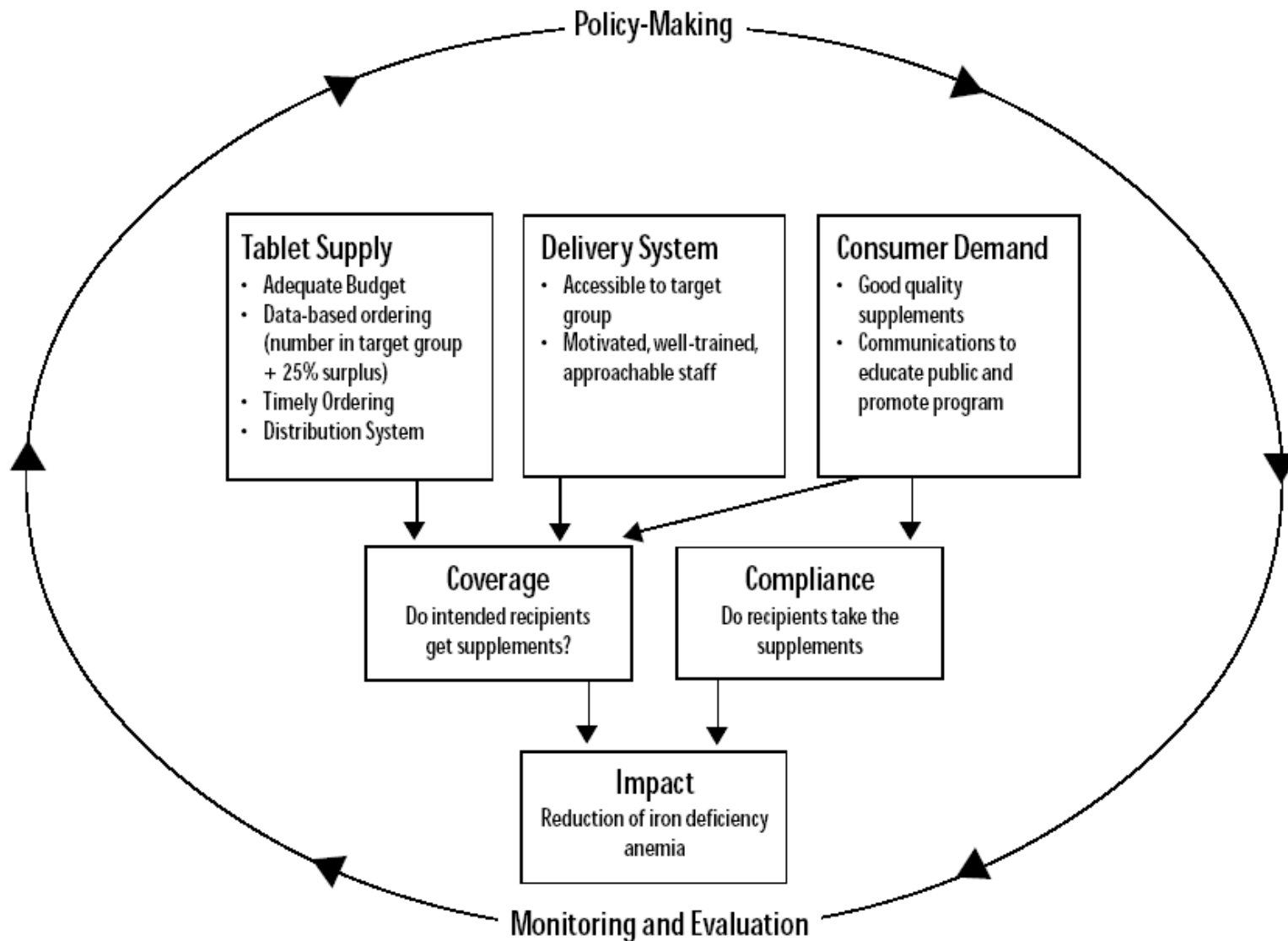
- Protocols based interviews and Focus Groups
 - 1 x National coordinator (1-3)
 - 1 x Oblast coordinator (1-3)
 - 1 x Oblast Implementation team (6-15)
 - 3 x Rayon Coordinator (1-3)
 - 3 x Rayon Implementation team (3-7)
 - 3 x Rayon hospital MCH and Maternity staff (5-12)
 - 3 x Peripheral level health professionals (3-8)
 - 3 x Women without pregnancy in three years (4-12)
 - 3 x Women pregnant in last three years (4-12)
 - 3 x Pregnant women (3-6)
- Health records
 - 1 month cohort pregnant women Hb status 1998 vs 2001
- Hemoglobin tests (follow-up on DHS sample of 810 women and approx. 230 children 0-36 months).



30 МИН



Elements of successful supplementation program



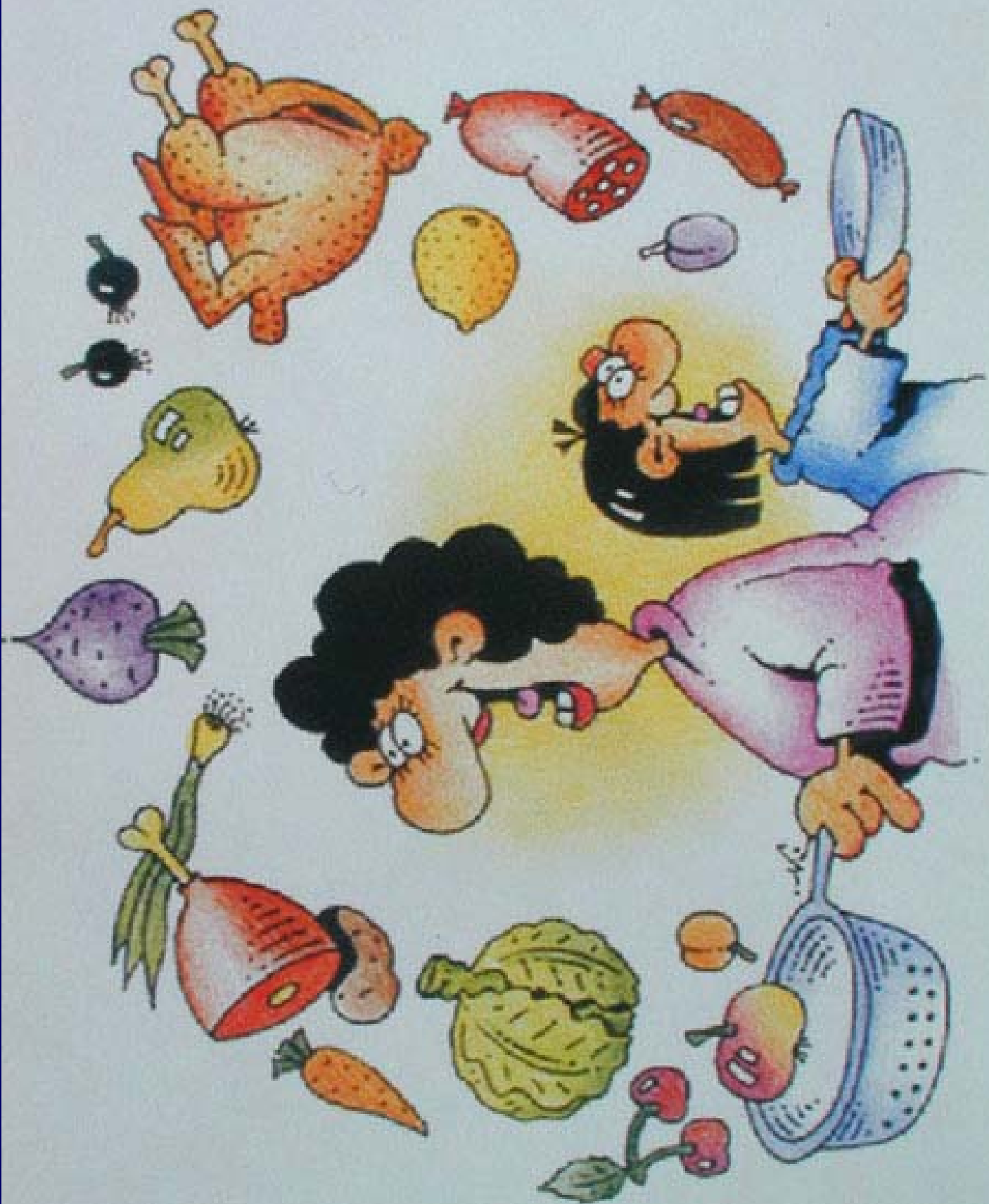
Oblast level reviews: Areas covered

- Knowledge of anemia, signs, causes, consequences
- Training process and effectiveness
- Supplement supplies (pregnant, non-pregnant and pediatric)
- Supplement distribution (pregnant, non-pregnant and pediatric)
- Compliance (pregnant, non-pregnant and pediatric)
- Side effects (pregnant non-pregnant and pediatric)
- Information, Education, Counseling
 - Messages and Materials
 - Channels and channel preference
 - Continuity of IEC
- Costs models and potential for family purchase of supplements
- Program management and use of monitoring
- Opinions on fortification of wheat flour
- Opinions on national recommendations
- Other



Oblast level reviews: Findings

- Previous knowledge of anemia much lower than expected major gains in knowledge over past two years.
- Training chain weakened substantially toward periphery finally emphasizing distribution and compliance
- Supplement supplies generally adequate at all levels
- Supplement distribution generally adequate, often overdone
- Compliance: highest for children, lowest for non-pregnant – dependent on health workers in rural areas
- Side effects: few major reported effect, many mentioned in focus groups – no systematic response



Oblast level reviews: Results

- Information, Education, Counseling
 - Messages and Materials generally comprehended and remembered – not necessarily followed
 - Try to maintain iron day
 - Channels and channel preference – depended on utility accessibility
 - Lagged after first year
- Even poor families would make efforts to purchase
- Preference for multi-micronutrient with vitamins
- Turnover affects program management, monitoring mainly for distribution and supply issues
- Openness for fortified wheat flour – also at local mills
- Specify treatment protocols
- Link APC to Reproductive health and IMCI

CARK National APC Recommendations (probable) (2)

- Seek government and donor funding with support of international agencies/NGOs working on IDA
- Continue and expand development of oblast level APC interventions
- Revise and improve training strategy
 - consistent training plan for each level
 - improved materials based on latest knowledge and reviews
 - how to train on APC kit”
- Develop detailed protocol and counseling materials for each type of reported side effects.
- Shift protocol from weekly to daily supplementation for pregnant women

CARK National APC Recommendations (probable) (3)

- Develop or procure “dry” supplement for children
- Do national research review and/or prevalence studies on hookworm
- Consider models allowing families to purchase multi-micronutrient supplements
- Develop and share reinforcing and new IEC materials
 - Drop 30 minute tea rule
- Expand APC partnership and collaboration
- Enhance area-wide networking on APC
- Move forward with development of wheat flour fortification with iron and other micronutrients
- Retain integrated intervention approach.

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