



FKILP Briefs

The 'Fostering Knowledge-Implementation Links' Project (FKILP) started in July 2010 as a joint initiative of the Centre for Public Policy at the Indian Institute of Management Bangalore (IIMB) and the Karnataka Health System Development and Reform Project (KHS DRP) to strengthen the evidence base for public health policy and programmes in Karnataka. As one of the outputs, the project has launched a series of policy briefs on critical health and health system issues based on joint consultations and findings from existing and new research. The briefs are intended to clearly spell out the implications of research and put forth specific recommendations for programme and policy.

Contributors

This policy brief was drafted by Dr. Altaf Virani with substantive inputs from Prof. Suneeta Krishnan, and editorial inputs from Aditi Iyer, Priya Patel, Mridula Shankar, and Bhavya Reddy, under the overall guidance of Prof. Gita Sen. We thank members of the FKILP 'Knowledge-Network' for their contributions during the consultative workshops on this subject.

Fostering Knowledge-Implementation Links Project

Centre for Public Policy,
Indian Institute of
Management Bangalore,
Faculty Block D, Ground Floor,
Bannerghatta Road,
Bangalore - 560 076
Tel: +91-80-26993331
Fax: +91-80-2658 2040

<http://fkilp.iimb.ernet.in>

Programmatic strategies for tackling maternal anaemia: Lessons from research and experience

Introduction

Anaemia is widely prevalent among women in Karnataka, especially among those who are pregnant. This is a source of concern, as maternal anaemia is associated with a higher risk of maternal mortality and poor perinatal outcomes. Even mild and moderate iron deficiency anaemia can undermine cardiovascular functioning and thereby put at risk both wellbeing and survival.^{1,2}

Although iron and folic acid (IFA) supplementation is routinely provided by the public health system, the prevalence of anaemia in pregnant women has risen significantly from 48.6% in 1998-99³ to 62.6% in 2005-06⁴. This calls to question current strategies and points to the need for more effective interventions.

Barriers to effective prevention and treatment

- 1. Non-compliance to the IFA regimen:** Only 44% of all pregnant women in Karnataka fully consume the recommended doses of IFA⁵ for two reasons:
 - **Low awareness** among women, who may not prioritise treatment⁶ or realise why it is important for them to take their "red tablets"⁷.
 - **Cultural beliefs** that iron could increase birth weight, make delivery difficult or exacerbate bleeding during delivery.⁶
- 2. Limitations of approach:** Current strategies are disjointed and lack programmatic linkages within and between relevant government departments. There is also no comprehensive state policy or unifying strategy to systematically address the multiple determinants of anaemia.
- 3. Issues of coverage, outreach, quality and effectiveness of services:**

- **Exclusion from Ante-Natal Care** can lead to delayed diagnosis and treatment of anaemia during pregnancy. Given this, the proportion of pregnant women not receiving three or more check-ups in Karnataka (21.7%) is substantial.⁴
- **Exclusion of other vulnerable groups** like out-of-school children and adolescent girls.⁸
- **Weak service-delivery by frontline health workers**, who routinely distribute IFA tablets to pregnant women but do not adequately counsel or follow up on their treatment.⁸
- **Unavailability of iron supplements** due to delays in procurement of IFA and shortage of health workers in some parts of the state. **Sub-optimal quality** of IFA tablets is another concern.⁸
- **Absence of clear protocols and guidelines:** Although guidelines for anaemia prevention and treatment exist⁹, they are ambiguous, incomplete and lack essential detail.⁸
- **Poor monitoring and evaluation** result in ineffective implementation and a weak evidence-base for any meaningful review of applied interventions.

Finding effective solutions - what we can learn from others

- 1. Strong political commitment** is crucial to the success of any public health programme. In Maharashtra, an attempt was made to cultivate political support for tackling malnutrition by constituting three committees, headed by the Chief Minister, the Women and Child Development Minister and the Chief Secretary respectively.¹⁰
- 2. Multi-pronged approach:**
 - **Multiple interventions** that include universal IFA supplementation, nutrition

education, food fortification, malaria control, de-worming, and optimal birth spacing improve the effectiveness of anaemia programmes.^{11,12} In Karnataka's Anekal Taluka, the use of iron and iodine-enriched salt (Dual-Fortified Salt) in food for primary school children significantly reduced the prevalence of anaemia.¹³ Tamil Nadu has also introduced Dual Fortified Salt through the ICDS, the mid-day meal programme and the PDS,¹⁴ but its impact on anaemia prevalence has not yet been evaluated.

- **Strengthening interdepartmental convergence:** Collaboration between the Departments of Education, Women & Child Development and Health and Family Welfare in seven Indian states (excluding Karnataka) significantly reduced anaemia prevalence through the provision of weekly iron-supplementation for both in- and out-of-school adolescent girls, counselling, nutrition education, life-skills training, de-worming and monitoring cards.¹⁵

- **Improving demand among women, their families and community members through innovative communication methods** that could include Nutrition Health Days, home visits, interactions with community groups and local leaders, print and electronic media, and folk programmes. A project in Uttar Pradesh using these methods reported better ANC coverage and reduced prevalence and severity of anaemia over a 12 month period.¹⁶

3. Improving outreach and effectiveness:

- **Reaching out to vulnerable groups:** In Uttar Pradesh and Gujarat alike, in-school adolescents are motivated to distribute IFA to their out-of-school friends. Anganwadi workers are likewise motivated to reach out to out-of-school girls in their area for IFA supplementation.^{17,18}

- **Building capacity of frontline health workers** to enable them to correctly identify, follow-up and support 'at-risk' cases: In Uttar Pradesh, the capacity of health workers was built through training, setting performance expectations, feedback, mentoring, supportive supervision, rewards and job-aids such as flip-charts, protocols and checklists.¹⁶ Similar efforts were made in Aurad, Kollegal and Molkalmuru taluks of Karnataka.⁸ In Gujarat, anganwadi workers are required to gain first-hand experience of undergoing screening and treatment for anaemia before they distribute iron supplements to others.¹⁸

- **Improving the availability and quality of IFA supplements** via reliable and efficient drug procurement and supply logistics: The Tamil Nadu Medical Services Corporation Ltd., which pools drug procurement and streamlines distribution, has successfully brought about greater transparency in tendering, more competitive pricing and better quality of drug supplies.¹⁹ Bihar and Tamil Nadu have also strengthened their information systems relating to drug logistics.⁸

- **Formulation of clear protocols and guidelines** to avoid ambiguity and assist frontline health workers to effectively manage anaemia cases: Tamil Nadu recently finalised a set of guidelines on de-worming, screening, prophylaxis and treatment of anaemia in pregnant mothers based on the stage of pregnancy and severity of anaemia⁸ and these are displayed in every PHC.

- **Continual monitoring and evaluation** to ensure effective implementation: In Maharashtra, nutrition surveys were done

and patterns of malnutrition were mapped on a Geographic Information System (GIS) to identify high-focus areas, track changes over time and improve programme targeting.¹⁰

Recommendations

1. Declare 2013 as the '**year for tackling maternal anaemia**' to mobilise political support, start fresh initiatives, garner additional resources and create public awareness.
2. Set up an **inter-departmental apparatus** for joint planning, execution, coordination and review of cross-sectoral efforts for anaemia prevention and control. Strengthen interactive linkages between different interventions to make them more effective.
3. Seek a rapid evaluation of Tamil Nadu's **Dual Fortified Salt** intervention. Based on the results, consider introducing iron-iodine enriched salt through the ICDS, the mid-day meal programme and the PDS.
4. Create a **new Behavioral Change Communication strategy** to improve demand for and uptake of services through the innovative use of counselling cards, posters and social media campaigns to reinforce key messages based on an understanding of prevailing attitudes and practices in communities.
5. **Expand coverage to "missed" groups** by motivating school-going girls and anganwadi workers to reach out to out-of-school girls.
6. Develop a **focused anaemia training** programme for frontline health workers and provide them with mentoring, supportive supervision and feedback, job-aids and outcome-based incentives.
7. **Strengthen drug procurement, distribution and supply logistics** to ensure adequate and timely availability of quality IFA supplements.
8. Create a **multi-stakeholder expert group** to formulate standard guidelines and protocols for the prevention and treatment of maternal anaemia.
9. **Continually monitor and evaluate programmatic interventions** to support effective implementation by providing data for reviewing and fine-tuning existing strategies.

References

1. Stoltzfus, R. J. (2001). "Iron-deficiency anemia: reexamining the nature and magnitude of the public health problem. Summary: implications for research and programs". *The Journal of Nutrition*, 131(2S-2): 697S-700S; discussion 700S-701S.
2. Stoltzfus R. J., Mullany L. and Black R. E. (2004). *Iron deficiency anaemia*. In: Ezzati M., Lopez A. D., Rodgers A., Murray C. J. L., eds. "Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors". Geneva:WHO.
3. International Institute for Population Sciences (IIPS) and ORC Macro (2001). *National Family Health Survey (NFHS-2), India, 1998-99: Karnataka*. Mumbai: IIPS.
4. International Institute for Population Sciences (IIPS) and Macro International (2008). *National Family Health Survey (NFHS-3), India, 2005-06: Karnataka*. Mumbai: IIPS.

5. UNICEF (2009). *Coverage evaluation survey. Karnataka Factsheet*. New Delhi: UNICEF.
6. Galloway R., Dusch E., Elder L., Achadi E., Grajeda R., Hurtado E., Favin M., Kanani S., Marsaban J., Meda N., Moore K. M., Morison L., Raina N., Rajaratnam J., Rodriques J. and Stephen C. (2002). "Women's perceptions of iron deficiency and anemia prevention and control in eight developing countries". *Social Science and Medicine*, 55(4): 529-44.
7. Bentley P. and Parekh A. (1998). *Perceptions of anemia and health seeking behaviour among women in four Indian states* (Rep. No. Technical Working Paper #9). MotherCare/John Snow, Inc.
8. Fostering Knowledge-Implementation Links Project (2011). *Summary Report, Consultative Workshop on Maternal Anaemia*, 29th September 2011. Bangalore: IIMB.
9. Directorate of Health and Family Welfare Services (2011). *Guidelines for iron sucrose therapy in severe cases of iron deficiency anaemia*. NRHM/DD/MH/GL/3.28/2011-12. Bangalore: Government of Karnataka.
10. National Health Systems Resource Centre (2009). *Draft Policy Note on Nutrition and Health*, Submitted to MOHFW. New Delhi: NHSRC.
11. Abel R., Rajaratnam J., Kalaimani A. and Kirubakaran S. (2002). "Can iron status be improved in each of the three trimesters? A community-based study". *European Journal of Clinical Nutrition*, 54: 490-493.
12. A2Z Micronutrient and Child Blindness Project, ACCESS Program, and Food and Nutrition Technical Assistance (FANTA) Project (2006). *Maternal Anemia: A Preventable Killer*. Washington DC: FANTA Project.
13. Andersson M., Thankachan P., Muthayya S., Goud R. B., Kurpad A. V., Hurrell R. F. and Zimmermann M. B. (2008). "Dual fortification of salt with iodine and iron: a randomized, double-blind, controlled trial of micronized ferric pyrophosphate and encapsulated ferrous fumarate in southern India". *American Journal of Clinical Nutrition*, 88(5): 1378-87.
14. Micronutrient Initiative (undated). *Solution in a pinch: The Micronutrient Initiative's Double Fortified Salt strategy tackles two problems in one go*. The Micronutrient Initiative.
15. Dwivedi A. and Schultink W. (2006). "Reducing anemia among Indian adolescent girls through once-weekly supplementation with iron and folic acid". *SCN News*, 31: 19-23.
16. Kotecha P. V., Mutto S., Patil A., Klemm R., Tawfik L. and Rambeloso Z. (2010). *Anemia in pregnancy: Why such a big challenge?* (Uttar Pradesh: Rural Area: A Case Study of Intervention). (PowerPoint presentation)
17. Vistaar Project (2008). *Community-Level interventions to prevent and treat anemia: A review of evidence from India*, Evidence Review Series 3. New Delhi: IntraHealth India.
18. Kotecha P. V., Nirupam S. and Karkar P. D. (2009). "Adolescent girls' anaemia control programme, Gujarat, India". *Indian Journal of Medical Research*, 130: 584-589.
19. High Level Expert Group on Universal Health Coverage (2011). *High Level Expert Group Report on Universal Health Coverage for India*, Submitted to the Planning Commission of India. New Delhi: HLEG.

Suggested citation:

Fostering Knowledge-Implementation Links Project (2012). *Programmatic strategies for tackling maternal anaemia: Lessons from research and experience*, Policy Brief No. 3. Bangalore: IIMB.