

FORGING AN ANAEMIA-FREE FUTURE

The path to India's nationwide adolescent anaemia control programme



FIELD REPORTS

Lessons from improving nutrition at scale

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India has the largest universal adolescent anaemia control programme in the world, targeting 116 million adolescent girls and boys. The programme plays a pivotal role in protecting adolescents from the debilitating effects of anaemia, breaking the country's inter-generational cycle of malnutrition and safeguarding the health and potential of future generations. Good nutrition – including sustaining adequate iron stores – puts all adolescents on the same starting line. India's 15-year journey towards nationwide expansion of its adolescent anaemia control programme offers vital lessons to other countries.

A generation of untapped potential

India is home to around 120 million adolescent girls and 133 million adolescent boys – about 20 per cent of the world's population of adolescents aged 10–19 years. More than 100 million of these adolescents suffer from anaemia – a condition that limits their capacity to learn, participate, and develop into productive adults.¹

While adolescent pregnancy rates have declined during the last decade through efforts to empower girls and prevent early marriage and childbearing, 4.5 million Indian girls aged 15–19 years are already mothers.² Adolescent girls who are anaemic during pregnancy face an increased risk of maternal death, premature delivery and delivering a low birth weight baby. Their children are also more likely to become anaemic, transferring the risk of poor growth and development to the next generation.

Iron deficiency is a major cause of anaemia in India. The dietary intake of iron-rich foods among India's adolescents has remained persistently low, particularly in resource poor settings, where many families are dependent on a cereal-based staple diet. Income constraints and cultural norms also pose barriers to adequate iron intake in India.

Evidence: a springboard to action

Adolescent anaemia has long been recognized as a public health problem in India – but political momentum to address the issue was lagging, in part, because of the lack of national evidence on the magnitude of the problem and potential solutions.

The second National Family Health Survey undertaken in 1998 was an important turning point for action.

The survey findings revealed that anaemia affected 56 per cent of all adolescent girls between the ages of 15–19, and 69 per cent in tribal communities. These alarming results drew attention to the scale of the anaemia burden in India, especially among the most vulnerable groups.

Around the same time, national evidence emerged about the positive impact of supervised weekly iron and folic acid supplementation on reducing adolescent anaemia. Studies conducted in different sites across India assessed the effectiveness of weekly iron and folic acid supplementation and found that supplementation reduced the prevalence of anaemia and was a safe, practical and effective strategy for reaching adolescent girls.^{3,4} These findings were also in line with the growing evidence base from around the world on the effectiveness of such programmes in addressing iron-deficiency anaemia among adolescent girls.

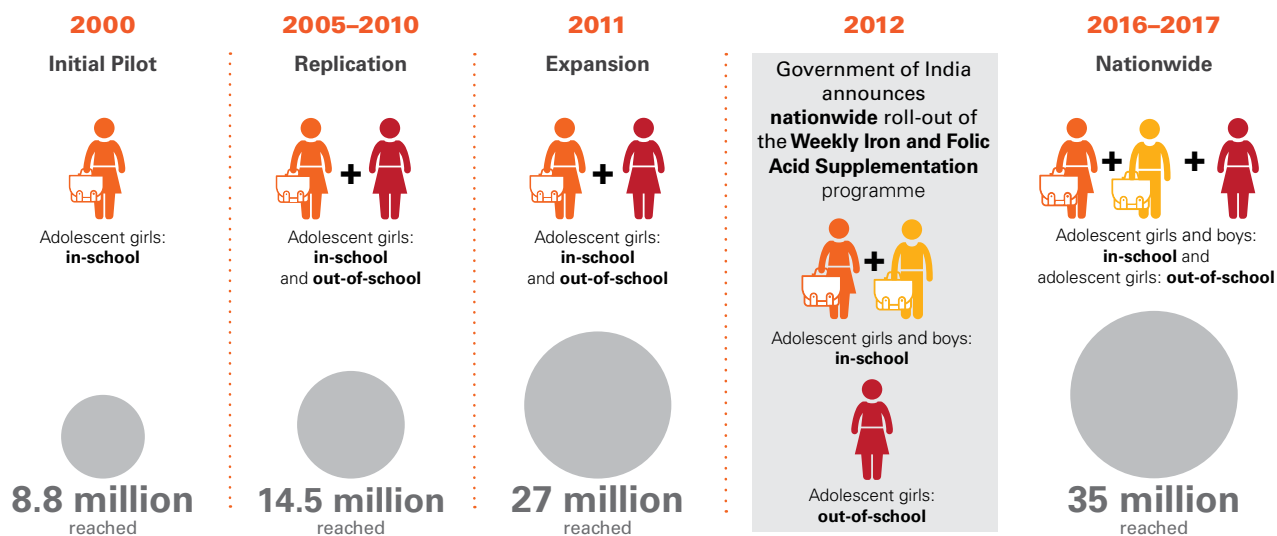
Guided by these two key pieces of evidence showing the scale of India's anaemia problem and presenting weekly iron and folic acid supplementation as a feasible and effective solution, the Government of India, with technical support from UNICEF, agreed to explore the effectiveness of an adolescent girls' anaemia control programme delivered through existing government service delivery systems.

Pilot

Adolescent (10-19 years) Anaemia Control Programme

Nationwide scale-up

Weekly Iron and Folic Acid Supplementation (WIFS)



Daring to innovate, breaking new ground

India's Adolescent Anaemia Control Programme was launched in 2000, starting in 2,000 public schools in 20 districts across five states. The pilot programme delivered three interventions: weekly iron-folic acid supplementation, monthly nutrition and health education, and twice yearly deworming prophylaxis. Around 8.8 million school-going girls aged 10–19 years were enrolled in the programme.

After just one year of implementation, the programme had already achieved dramatic results: the prevalence of anaemia dropped by 31 per cent, while the prevalence of moderate-to-severe anaemia fell by 43 per cent.⁵ In most programme sites, more than 90 per cent of girls adhered to the supplementation programme and 80 per cent of them reported beneficial effects – such as feeling less fatigued, healthier and more alert. The programme was also cost-effective: the average programme unit cost was only about INR 25 (US\$ 0.50) per adolescent girl per year.

Building on success, broadening reach

Out of school does not have to mean out of reach. Based on the success of the first year, the programme was scaled up and expanded to include out-of-school adolescent girls, using the existing community-based delivery platform of Anganwadi centres – village nutrition outposts for women,

adolescent girls and children. This approach to reaching out-of-school girls has been key to guaranteeing equity. As school attendance declines with the onset of high school, Anganwadi centres – which are well-established and accessible in most villages – are one of the most effective platforms for reaching this vulnerable group of adolescent girls.

Building on the success of the initial pilots, the innovation was further expanded to selected districts in an additional six states between 2001 and 2002 and two further states between 2002 and 2005. This phase included both school-going and out-of-school girls in all but two states. Working closely with state government departments to test the new programme, UNICEF provided technical support through planning, implementation, monitoring and documentation; through capacity building of various stakeholders; and by supporting the development of communications and counselling materials.

Evaluating progress, informing scale-up

Significant efforts were made to evaluate the effectiveness of the innovation and also learn from the process to inform future scale-up. Evaluations were conducted in six states gathering critical information on the effectiveness of weekly supplementation in reducing the prevalence of anaemia, as well as on adherence, self-reported benefits and side effects. Cost-effectiveness was also examined to determine the resources needed to scale-up the programme.

Insights on how to maintain adherence – critical to the success of the programme – were also gathered, including the importance of supervising intake, ensuring effective counseling and education, developing tailored and effective communications materials, maintaining supplies and monitoring the programme.

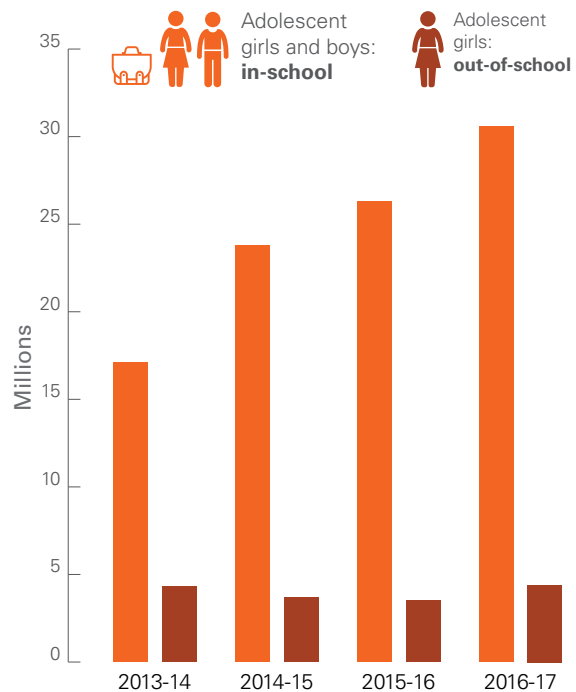
Informed by these rich learnings, it was possible to refine and contextualize the programme, and replicate success. Between 2005 and 2010, overall programme coverage doubled from 8.8 million to 14.5 million adolescent girls receiving the programme’s benefits. By 2011, the programme was active in 13 Indian states and was reaching more than 27 million adolescent girls⁶ – 16.3 million of them in school and 11.3 million out of school.

The final stride to nationwide

In 2012, after a decade of evidence generation and scale-up, the Government of India announced the nationwide roll-out of the national Weekly Iron and Folic Acid Supplementation (WIFS) programme, with an annual budget of US\$ 19.5 million in 2016–17 and a target of reaching 116 million adolescents aged 10–19, across 32 of the country’s 36 states. This included 47.6 million school-going adolescent girls aged 10–19, 20.9 million out-of-school adolescent girls aged 15–19 – and for the first time, 39.5 million school-going boys.

The inclusion of adolescent boys in the nationwide programme was a further opportunity to advance equity: evidence showed that anaemia in boys was also high and the school setting had already proved to be a successful delivery platform.

As part of the preparedness plan for scale-up, the Government undertook research to further improve uptake and acceptability of the programme among adolescents, their families and communities. The findings suggested some concerns about the acceptability of the red iron and folic acid tablet, given its association with pregnancy – i.e. the same colour tablets were also being provided to pregnant women. To address these concerns, the colour of the tablet for adolescents was changed to blue to differentiate between the two. Concerns about potential undesirable side effects from supplementation had also been identified as a barrier to uptake, and a plan was developed to help teachers and other providers manage and respond to such cases.⁷



Adolescents reached by India’s Weekly Iron and Folic Acid Supplementation (WIFS) programme

Source: Government of India programme data, presented by the Ministry of Health, 2017.

In 2013, further programme improvements were made, including developing a common implementation framework, strengthening the supply chain, putting a reporting mechanism in place, building the capacities of service providers, and engaging with the media to improve public awareness about anaemia and its prevention.

By 2016–17, the fifth year of implementation, the national WIFS programme was reaching 36 per cent of targeted adolescents. All states had taken important steps to ensure the sustainability of the programme, including by allocating financial resources for the supplies, training and reviews. In addition, a set of key programme indicators were included in the routine reporting systems of both Health and Education ministries to monitor programme performance.

Close coordination between government ministries has provided the backbone for strengthening existing delivery systems for programme scale-up. The WIFS programme is led by the Adolescent Health Division of the Ministry of Health and Family Welfare in close coordination and partnership with the Ministry of Education and the Ministry of Women and Child Development. The Ministry



An adolescent receives his weekly iron and folic acid tablet at a government school in Haryana state. Credit : UNICEF/India/ Diwakar Mani

of Health and Family Welfare provides overarching support to the 32 states to prepare plans of action, earmark annual budgets, and facilitate reviews and apply approaches to improve coverage by including disadvantaged sub-populations. The Ministry of Education is responsible for ensuring the administration of iron and folic acid and deworming tablets to school-going adolescents, while the Ministry of Women and Child Development is responsible for reaching out-of-school adolescent girls.

Leveraging knowledge for impact

Knowledge generation and use have been the foundation of India's path to scale-up its adolescent anaemia control programme, informing every stage from advocacy, to innovation, to evaluation, to replication and scale-up to universalization. National and international evidence supported advocacy to inform and guide actions.

Rigorous evaluation facilitated learning from pilot experiences that led to improved programme design and implementation effectiveness. Strong data and monitoring systems allowed bottlenecks to be identified early in the process and supported continuous learning and improvement as the programme was scaled up across different contexts, through different delivery platforms.

Knowledge generation has also been critical to India's equity-focused approach – and will continue to guide efforts to improve coverage of the programme and help achieve a future without anaemia for India's adolescents.

Charting India's path to an anaemia-free future

Putting an end to anaemia is a powerful investment in India's future – and the future of all nations. Efforts to control anaemia in India are aligned with achieving global targets such as the Sustainable Development Goals and the World Health Assembly nutrition targets, and this has helped to secure momentum for the programme going forward.

India's Ministry of Health is championing this agenda through its 'Anaemia-Free India 2018–2022'. The initiative includes operational guidelines for states, and calls on them to set yearly impact, outcome and output targets; improve coverage through special communication and a monitoring system; integrate programme reporting within the routine information and reporting systems of allied ministries; and systematize stock-out warning systems and special strategies for vulnerable areas, among other objectives. The findings of the 2016–2018 Comprehensive National Nutrition Survey, UNICEF through funding from the Mittal Family, will also be used to refine anaemia control strategies for adolescents and other population groups.



LESSONS FROM 15 YEARS OF PROGRAMMING

India's journey from gathering evidence to scaling up one of the largest adolescent anaemia control programmes in the world offers important lessons for programmers everywhere:

Use evidence to inspire

advocacy: National data on the prevalence and burden of anaemia among adolescents and evidence on the low-cost and effectiveness of supplementation were key to garnering political support for the nationwide anaemia control programme.

Design and plan for scale up:

The programme was designed from the outset with scale up in mind, focusing on a limited number of evidence-based interventions with the potential for delivery at scale. Evaluation and acceptability research helped improve uptake and coverage. Leveraging existing delivery platforms and investing in them allowed for the rapid and cost-effective scale-up of programme coverage.

Foster synergies among departments at national and state levels:

A clear definition of roles and responsibilities and

identification of nodal officers was essential to the success of the initial pilot and subsequent programme expansion and helped to ensure quality. Ensuring coordination between government departments was critical to improving programme implementation and ensuring that both in-school adolescents and out-of-school girls were reached.

Engage all stakeholders to encourage ownership: Engaging with girls, parents, community leaders, teachers, principals, district level programme managers, state level policy makers and media improved programme uptake and coverage.

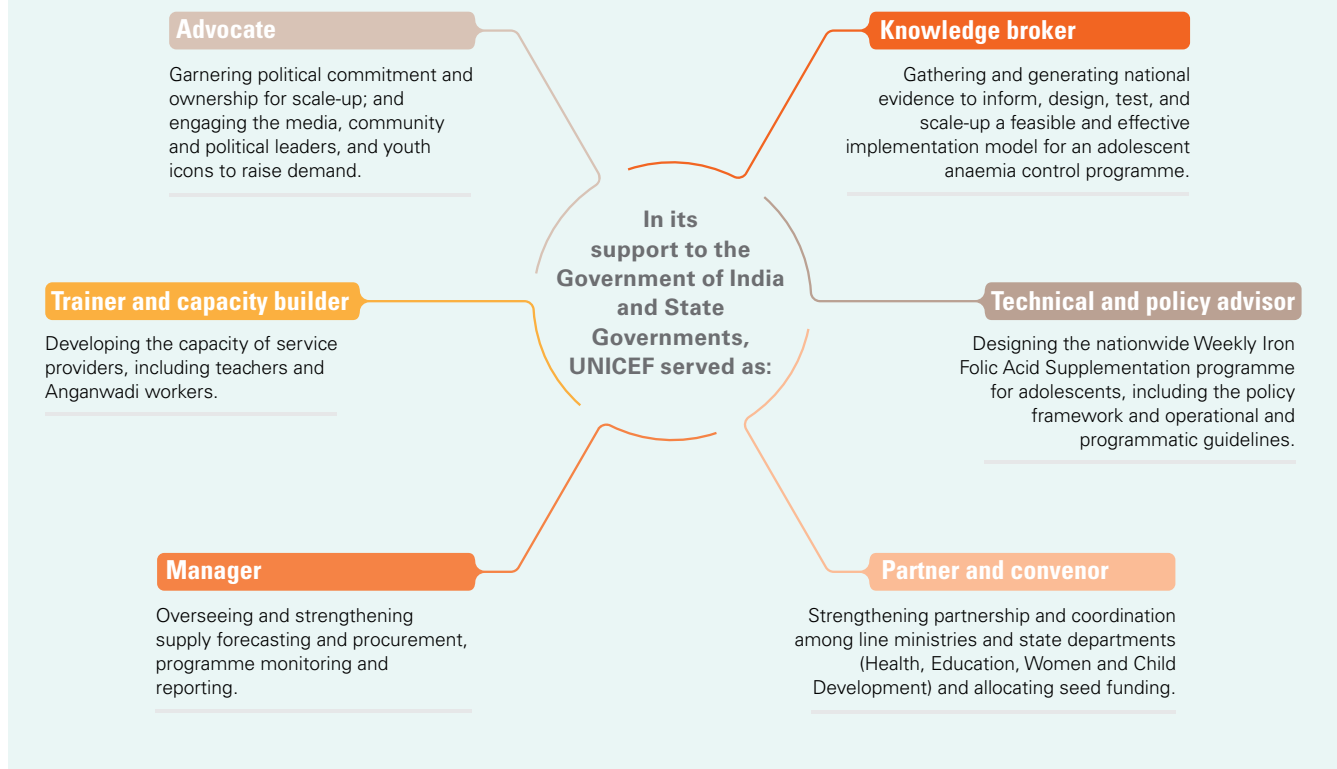
Communicate to drive change: Regular and high-quality communication with adolescent girls, their families and communities to explain benefits and address concerns improved girls' adherence to the programme. Putting in a

place a response plan from service providers to address any adverse side effects of supplementation was also essential.

Invest in good supply chain management: Developing a well-managed supply chain and building supply forecasting capacity has been essential to avoiding breaks in the supply of iron and folic acid supplements, deworming tablets and communication materials. This should be instituted as part of a broader strategy to strengthen systems for delivery.

Streamline programme monitoring: Developing standard reporting formats and integrating programme reporting into the routine management information systems of all three responsible government ministries helped to improve the performance monitoring process. This has allowed corrective actions to be taken in a timely manner.

UNICEF: Versatility in Partnership



Endnotes

- 1 Latest available estimates of anaemia prevalence in 2015–16 among adolescents aged 15–49 in India were 54 per cent among adolescent girls and 29 per cent among adolescent boys.
- 2 International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey 4, 2015–16: India Fact sheet. Mumbai; 2017.
- 3 Agarwal, K. N., S. Gomber, H. Bisht, and M. Som. “Anemia prophylaxis in adolescent school girls by weekly or daily iron-folate supplementation.” *Indian pediatrics* 40, no. 4 (2003): 296-3
- 4 Mehta, M. “Effectiveness of daily and weekly iron and folic acid supplementa-
tion in anemic adolescent girls.” Bombay: United Nations Children’s Fund (1998): 21-5.
- 5 Aguayo VM, Paintal K, Singh G. The Adolescent Girls’ Anaemia Control Programme: a decade of programming experience to break the intergenerational cycle of malnutrition in India. *Public Health Nutr*, 2013; 16 (9): 1667-76.
- 6 Sethi V, Sternin M, Sharma D, Bhanot A, Mebrahtu S. Applying Positive Deviance for improving compliance to adolescent anaemia control programme in tribal communities of India. *Food Nutr Bull*. 2017 Jan 1:379572117712791. doi: 10.1177/0379572117712791.
- 7 United Nations Children’s Fund (UNICEF). Incidence and determinants of undesirable effects following iron and folic acid supplementation. Evidence from the Weekly Iron and Folic Acid Supplementation Programme for adolescents in Delhi and Haryana. *Nutrition Reports*, Issue 3, 2014. New Delhi: UNICEF, 2014. http://unicef.in/Uploads/Publications/Resources/pub_doc112.pdf

UNICEF FOCAL POINTS

Dr. Vani Sethi, Nutrition Specialist (Adolescent and Maternal Nutrition) (vsethi@unicef.org)

Mr. Robert Johnston, Nutrition Specialist (Knowledge Management) (rojohnston@unicef.org)

ACKNOWLEDGEMENTS

COUNTRY TEAM

Dr. Ajay Khara, Deputy Commissioner and In-charge, Adolescent and Child Health, Ministry of Health

Dr. Sushma Dureja, Deputy Commissioner – Adolescent Health, Ministry of Health

Dr. Zoya Rizvi, Assistant Commissioner – Adolescent Health, Ministry of Health

Dr. Shikha Yadav, National Consultant (Adolescent and Maternal Anaemia)

Farhat Saiyed and Preetu Mishra (Chattisgarh), Rabi Parhi and Shivani Dar (Bihar), Kavita Sharma (Gujarat), Khyati Tiwari (Andhra Pradesh, Telengana and Karnataka), Shweta Sharma (Assam), Keya Chattarjee (Jharkhand), Sameer Manikrao Pawar and Puspha Awasthy (M.Pradesh), Rajlakshmi Nair and Arpana Deshpande (Maharashtra), Sourav Bhattacharjee (Odisha), Minakshi Singh and Vanita Dutta (Rajasthan), Richa Singh Pandey, Anuja Bhargava and Ravish Sharma (U.Pradesh), Farheen Khurshid and Jayati Mitra (W. Bengal)

KEY PARTNERS

Ministry of Health and Family Welfare (Adolescent Health Division), Government of India

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Nutrition Section, Programme Division | United Nations Children's Fund
3 United Nations Plaza
New York, NY 10017, USA
Email: nutrition@unicef.org
www.unicef.org

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Scaling up India's Integrated Adolescent Girls' Anaemia Control Programme