14 Briefing Paper Series:
Innovations, Lessons and Good Practices

The Adolescent Girls Anaemia Control Programme

Breaking the Inter-Generational Cycle of Undernutrition in India with a focus on Adolescent Girls

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What is the Briefing Paper Series?

These Briefing Papers document a collection of initiatives, funded by UNICEF and implemented jointly with the Union and State Governments of India and other partners over the past five years. It covers a range of pilot and more advanced programmes that have generated lessons, demonstrated potential or achieved verifiable results in the delivery of maternal health and child health, nutrition, development, education, environment, protection and gender equality. Each paper provides an overview of a practice: its context, purpose, strategy and key elements of implementation as well as, to varying degrees, the results and costs involved. The papers go onto consider lessons and wider application of the initiative. The series aims to generate greater knowledge and support effective replication and scale up. ***This paper describes the introduction, consolidation and expansion of the Adolescent Girls Anaemia Control Programme to address the intergenerational cycle of undernutrition in India.***

Summary

Girls' iron requirements increase dramatically during adolescent as a result of the expansion of the lean body mass, total blood volume and the onset of menstruation; these changes make adolescent girls more susceptible to anaemia, which has lasting negative consequences for them and for the survival, growth, development of their children later in life. In India - home to nearly 113 million adolescent girls – the prevalence of anaemia in adolescent girls is estimated at 56 per cent. In view of the scale of the problem, the Government of India and state governments with technical support by UNICEF and partners have been implementing for over a decade the Adolescent Girls Anaemia Control Programme. The main objective of the programme is to reduce the prevalence and severity of anaemia in school-going adolescent girls using schools as the delivery channel and in out-of-school adolescent girls using the community *anganwadi* centre of India's Integrated Child Development Services (ICDS) programme as the delivery platform. The programme strategy for the initial phase was built around three essential interventions: 1) weekly iron and folic acid supplementation (WIFS) comprising 100 mg of elemental iron and 500 μg of folic acid; 2) bi-annual deworming prophylaxis (400 μg of albendazole) six months apart for the prevention of helminth infestations; and 3) information, counselling and support to adolescent girls on how to improve their diets and how to prevent anaemia.

Initial phase of the programme (2000-2005): The initial phase of the programme was implemented in 52 districts across 13 states. UNICEF supported state governments with: 1) advocacy through technical updates and reviews of global and national better practices; 2) technical support for the design, planning, implementation, monitoring and evaluation of the programme; 3) technical support for the design of training modules and building the capacity of teachers, health staff, frontline community workers and supervisors to implement the programme; 4) timely procurement and distribution of supplies to the districts; and 5) programme communication using folk media, mass media, local plays, radio, television, wall writings, brochures, posters, pamphlets and booklets, girls-to-girls, girls-to-parents and teachers-to-parents approaches. The evaluation of the initial phase indicated over 90 per cent adherence by the girls in most programme sites. The evaluation indicated a statistically

significant ($p < 0.001$) decrease in the prevalence of anaemia both in school-going girls and in out-of-school girls with an average 24 percentage point reduction (30 per cent decrease) after one year of programme implementation. The vast majority of programmes reported a significant decrease in the prevalence of severe and moderate anaemia. Moreover, about 80 per cent of the girls who participated in the initial phase reported that they benefited from the programme. The average cost of the programme was estimated to be INR 25 (US$ 0.58) per adolescent girl, per year.

Consolidation phase of the programme (2006-2010): The encouraging results of the initial phase of the programme provided state governments with a solid foundation to scale up of the programme using government funds. In this phase, UNICEF's role evolved from one of intense programme support in the initial phase to a technical advisory role in the consolidation phase. Between 2006 and 2010, the programme increased significantly its reach and coverage. By the end of 2010, the programme was being implemented state-wide in 11 states with state funds. The coverage of the programme doubled and the number of adolescent girls benefiting from the programme increased from 8.8 million by the end of 2005 to 14.5 million by the end of 2010. About 30 per cent of the girls enrolled in the programme by the end of 2010 were out-of-school girls while 70 per cent were school-going girls.

Expansion phase of the programme (2011+): The initial and consolidation phases demonstrated that the programme was effective in reducing the prevalence and severity of anaemia among adolescent girls and that it was possible to scale up its reach and coverage with state government funds; importantly, the programme contributed to put adolescent girls at the centre of policy formulation and programme design. In 2011, the Government of India launched the Rajiv Gandhi Scheme for the Empowerment of Adolescent Girls, also known as SABLA. UNICEF supported the Ministry of Women and Child Development in conceptualising the programme, developing its operational guidelines, designing training packages, and developing the monitoring and evaluation framework. By the end of 2011, the Adolescent Girls Anaemia Control Programme was being rolled out state wide in 13 states using schools, *anganwadi* centres and SABLA as the delivery platforms. The programme was reaching 27.6 million adolescent girls of whom 16.3 million school-going girls and 11.3 million out-of-school girls.

Lessons learnt: The genesis and expansion of the Adolescent Girls Anaemia Control Programme in India demonstrate that appropriate leadership and programme action can successfully scale up evidence-based nutrition programmes for children and women. Several success factors and lessons learned have been identified in the decade that spans from the initial phase of the programme to end 2011:

- **Evidence-based advocacy** using global and national evidence contributed to garner political support to pilot test (initial phase) the programme and assess its effectiveness;

- **Data on effectiveness and cost** was crucial to garner political commitment for the consolidation phase of the programme; particularly important was the evidence on the impact of the programme in reducing the prevalence and severity of anaemia;

- **Synergy among state departments** and a clear segregation of roles and responsibilities among the departments at the national and state levels was key in the successful pilot testing and consolidation of the programme at scale with quality;

- **Involvement of stakeholders** at all levels of the programme, including girls, parents, community leaders, teachers, principals, district level programme managers, state level policy makers, and media is essential to ensure programme uptake, coverage and ownership;

- **Timely and quality communication** with adolescent girls and their families and communities about the benefits of the programme, the potential undesirable effects of WIFS and deworming prophylaxis and how to mitigate them was essential to ensure girls' adherence to the programme;

- **Timely availability of supplies**, particularly iron and folic acid (IFA) supplements and deworming tablets, Information-Education-Communication (IEC) materials and monitoring tools in the schools and *anganwadi* centres is central to the girls' adherence to the programme and programme success;

- **An integrated package** of interventions including anaemia control services, counselling and support as well as other relevant components for adolescent's growth, development and empowerment is important; however, it is crucial to focus on a **limited number of evidence-based interventions** and design the programme with a focus on large scale;

- **Use existing delivery platforms** today while creating new policy and programme opportunities for tomorrow;

- **Girls are the best advocates** as they can be very articulate about the benefits of their programme; the "peer-to-peer/girl-to-girl" education and counselling approach increased girls' interest, enthusiasm and adherence to the programme.

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The lessons learned from this decade of programme experience suggest that the Adolescent Girls Anaemia Control Programme has the potential to become an important platform for intersectoral convergence among key government departments and UNICEF programmes to empower adolescent girls, reduce gender and social inequities, and break the inter-generational cycle of undernutrition and deprivation in India.

Situation Analysis

Adolescence is a period of transition from childhood to adulthood. It is characterised by rapid physical, biological and hormonal changes resulting in psycho-social, behavioural and sexual maturation. Adolescence is a period of rapid growth: up to 45 per cent of skeletal growth takes

place and 15 to 25 per cent of adult height is achieved during adolescence. During the growth spurt of adolescence, up to 37 per cent of total bone mass may be accumulated. The physical and physiological changes that occur in adolescent girls place a great demand on their nutritional requirements and make them more vulnerable to nutritional deficiencies. Specifically, the increase in the lean body mass, the expansion of the total blood volume and the onset of menstruation translate into a significant increase of girls' iron requirements making them more susceptible to anaemia.

Anaemia during adolescence affects the growth and development of girls, diminishes their concentration in daily tasks, limits their learning ability, increases their vulnerability to dropping out of school, causes loss of appetite resulting in reduced food intake and irregular menstrual cycles, and reduces physical fitness and future work productivity. Moreover, anaemia during adolescence influences women's entire life cycle since anaemic girls will have lower pre-pregnancy iron stores. As pregnancy is too short a period to build the iron stores required to meet the needs of the growing fetus, women who enter pregnancy anaemic are at an increased risk of giving birth to children with a low birth weight (below 2,500 grams), delivering pre-term newborns, and/or dying while giving birth. Additionally, children born to anaemic women are more likely to die before the age of one year and be sick, undernourished and anaemic, thus perpetuating the intergenerational cycle of maternal and child undernutrition. Hence, investing in preventing anaemia during adolescence is critical for adolescent girls themselves as well as for the survival, growth and development of their children later in life.

India is home to nearly 113 million adolescent girls between the ages of 11 and 18 years, and 90 per cent of them (i.e. 104 million girls) live in the 15 largest states of the country. An estimated 56 per cent of adolescent girls in India are anaemic, and this amounts to an average 64 million girls at any point in time. In view of the scale of the problem, Government of India, with technical support by UNICEF and partners has been implementing for over a decade the Adolescent Girls Anaemia Control Programme. The main objective of the programme is to reduce the prevalence and severity of anaemia in school-going adolescent girls using schools as delivery channel and in out-of-school adolescent girls using the community *anganwadi* centre of India's ICDS programme as the delivery platform. This publication reviews the initiation, consolidation and expansion of the Adolescent Girls Anaemia Control Programme, its context, objectives, strategy and the key elements of its implementation, and the results and costs involved. It also describes UNICEF's evolving role in supporting the programme and summarises the lessons learned in the process to support the effective scale up of the programme in India.

Strategy

Globally, a three-pronged strategy is recommended for the control of anaemia at the population level. Such strategy comprises: 1) Dietary diversification and improvement; 2) Food fortification with iron and other essential micronutrients (vitamins and minerals); and 3) Regular consumption of IFA supplements. In India's current socio-economic situation, it is difficult for large segments of the population to consume a diversified iron-rich diet able to ensure optimal intake of iron, folic acid and other essential micronutrients as indicated by the high prevalence of anaemia among adolescent girls and women of reproductive age, showing the cumulative effects of nutritional deficiencies along the life cycle and across generations. Therefore, the regular consumption of IFA supplements is essential for the prevention of iron deficiency and anaemia in adolescent girls (box 1).

As mentioned, the main objective of the Adolescent Girls Anaemia Control Programme is to reduce the prevalence and severity of anaemia in school-going adolescent girls using schools as the delivery channel and in out-of-school adolescent girls using the community *anganwadi* centre of India's ICDS programme as the delivery platform. The programme strategy for the initial phase was built around three essential interventions:

- WIFS supplementation comprising 100 mg of elemental iron and 500 µg of folic acid 52 weeks a year for the prevention of nutritional anaemia;
- Bi-annual deworming prophylaxis (400 µg of albendazole) six months apart for the prevention of helminth infestations;
- Information, counselling and support to adolescent girls on how to improve their diets, especially iron intake, how to prevent anaemia and how to minimise the potential undesirable effects of WIFS and deworming.

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Box 1: Why weekly iron and folic acid supplementation?

A significant number of studies have been completed around the world - including three research studies in India - on the efficacy and effectiveness of intermittent iron supplementation. A meta-analysis of these studies concluded that weekly supplementation of children and adolescents was as effective as daily supplementation if delivered under supervision and compliance was ensured. However for pregnant women, weekly supplementation was found to be less effective than daily supplementation.

Thereafter, in 1997, the Government of India organised a consultation on anaemia recommending that "*adolescent girls on attaining menarche need to consume one IFA tablet containing 100 mg of elemental iron plus 500 µg of folic acid once a week. This should be accompanied by appropriate dietary counselling.* "

Considering the large size of the adolescent girl population and the financial and operational constraints associated with a large scale programme, it was recommended that district level pilot projects be undertaken using the above strategy. As a result, the initial phase of the Adolescent Girls Anaemia Control Programme with weekly iron and folic acid supplementation was launched in selected districts in eight states of the country.

Initial Phase (2000-2005)

From the initial stages of the Adolescent Girls Anaemia Control Programme in the states, the Departments of Health and Family Welfare, Women and Child Development, and Education played a key role in implementing the programme. The Department of Health and Family

Welfare ensured the provision of supplies – IFA supplements and deworming tablets - while addressing specific health-related issues. The Department of Education led the implementation of the programme in schools for school-going girls, while the Department of Women and Child Development led the implementation of the programme in the community *anganwadi* centres for out-of-school girls. UNICEF was requested to support the Government of India and state governments in designing, implementing, and documenting an evidence-based intervention that could be taken to large scale.

The initial phase of the programme was launched in 2000-2001 across 20 districts in five states, namely Andhra Pradesh, Bihar, Gujarat, Rajasthan and Tamil Nadu. In 2001-2002, six additional states (Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Uttar Pradesh and West Bengal) initiated the programme in 12 districts. Between 2002 and 2005, the initial phase took off in 20 districts across the states of Chhattisgarh and Karnataka.

School-going girls: The Department of Education was the nodal department responsible for expanding the coverage of the Adolescent Girls Anaemia Control Programme among school-going girls. Principals' and teachers' associations as well as parent-teacher associations were involved along with district education inspectors to facilitate the implementation of the programme in the schools. The district inspectors of the Department of Education were responsible for monitoring the effective implementation of the programme and trouble-shooting in response to any programme delivery constraints.

Out-of-school girls: The Department of Women and Child Development was the nodal department responsible for expanding the coverage of the Adolescent Girls Anaemia Control Programme among out-of-school girls. A community-based approach was adopted comprising supervised IFA consumption at the *anganwadi* centre using a girl-to-girl approach. The District Programme Officers, Child Development Programme Officer and ICDS supervisors were part of the team responsible for the effective implementation of the programme. The District Project Officers from the Department of Women and Child Development played a role vis-à-vis *anganwadi* centres similar to the role played by District Inspectors of the Department of Education vis-à-vis schools. During the initial phase, the programme support provided by UNICEF is detailed below:

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- **Advocacy:** UNICEF provided technical updates and shared reviews of global and national evidence and better practices to bring to the forefront of the policy agenda the challenge of anaemia in adolescent girls; further advocacy with the national and state governments supported the introduction of the programme in the states;

- **Systems strengthening and capacity development:** UNICEF provided technical support to state governments for the design, planning, implementation, monitoring and documentation of the initial phase of the programme. Support was also provided in the design of training modules and building the capacity of teachers, health staff, frontline community workers and supervisors to help them deliver, supervise and monitor the programme in schools and communities.

- **Procurement and distribution:** To ensure an uninterrupted supply of IFA supplements, deworming tablets, registers, monitoring tools and information, education and communication materials, UNICEF supported state government in the timely procurement and distribution of supplies to the targeted districts.

- **Programme communication:** UNICEF strengthened the capacity of teachers, health workers and ICDS workers to counsel adolescent girls and their families on how to prevent anaemia, minimise the potential undesirable effects of IFA supplements and deworming tablets, improve dietary intake and support the adoption of good practices for anaemia control. Communication channels like folk media, mass media, local plays, radio, television, wall writings, brochures, posters, pamphlets and booklets, girls-to-girls, girls-to-parents and teachers-to-parents approaches were used.

- **Monitoring and evaluation:** UNICEF provided support to the states in supervising the work of frontline workers, monitoring the implementation of the programme, documenting programme processes and outputs, and evaluating the impact of the programme in reducing anaemia among adolescent girls.

Results in the initial phase

Evaluations were carried out in seven states: Andhra Pradesh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Uttar Pradesh and West Bengal. The aim was to assess the effectiveness of the programme in reducing the prevalence and severity of anaemia in adolescent girls and to identify the success factors that were critical in scaling up the programme.

The evaluation indicated that 8.8 million adolescent girls were reached during this phase. All programme used the same weekly dose of IFA containing 100 mg of iron and 500 μg of folic acid, and water was used to pass the supplements and tablets down in all programme sites. All state programmes targeted both school-going and out-of-school girls except in Andhra Pradesh and Karnataka, where only school-going girls were included.

Adherence to the programme was deemed to be essential for the success of the programme. Some of the strategies that were used to ensure high adherence with the programme were:

- Supervised WIFS consumption and recording of programme adherence in school registers, *anganwadi* centre registers and girls' self-reporting cards;

- Enhancing overall awareness about the programme by covering the launch of the programme through radio and television;

- Dispelling potential misconceptions associated with WIFS supplementation through regular nutrition education and counselling by nodal teachers, *anganwadi* workers and influential peers;

- Involvement of *anganwadi* workers, female school teachers, parents, community groups, and school-going adolescent girls in programme implementation, counselling, peer support and programme monitoring;

- Use of IFA stock registers in schools and reporting formats at different levels;

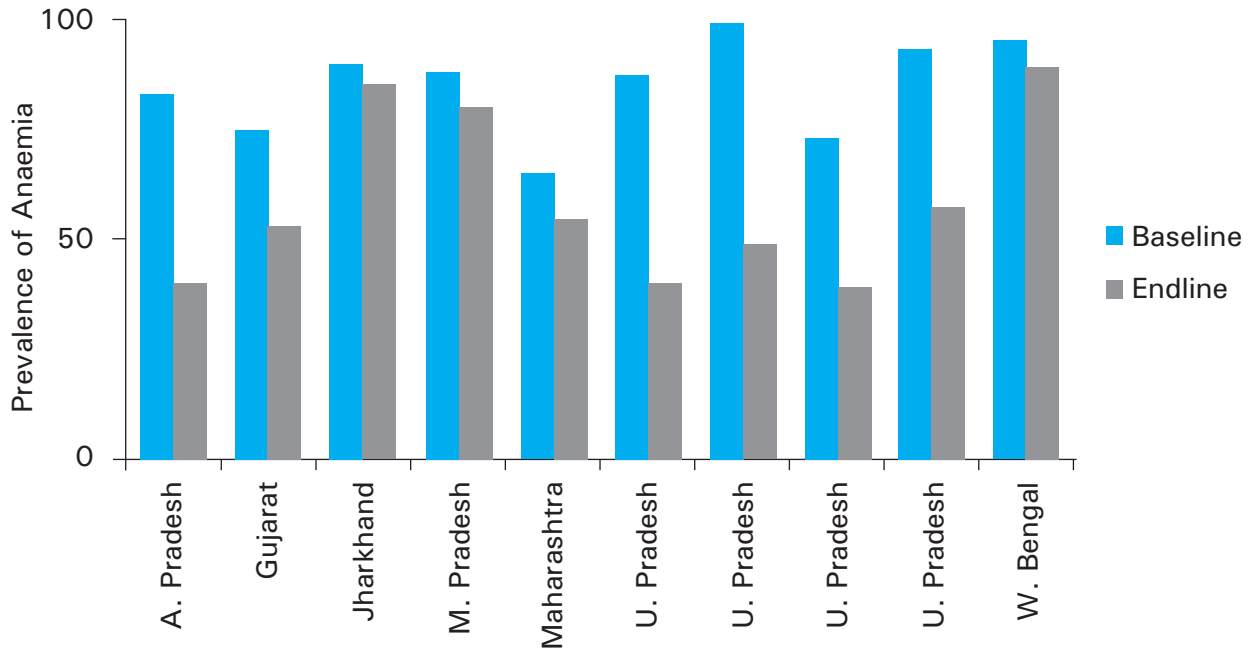
- Designation of a nodal person at every level for regular reporting and tracking of girls' adherence to the programme;

- Capacity building of ICDS workers to advice and counsel mothers and adolescent girls on anaemia control.

Data from the teachers' registers (for school-going girls) and the *anganwadi* workers' registers (for out-of-school girls), indicated high adherence by the girls to the programme; most programme sites reported adherence rates above 90 per cent except in Jharkhand and West Bengal, where the reported adherence rates were 63 and 65 per cent respectively. The high compliance rates were attributed to the regular supervision, monitoring, counselling and support by Education, ICDS and Health workers (teachers, *anganwadi* workers, ASHAs), community resource persons and parents to ensure that the girls adhered to the WIFS and bi-annual deworming regime while receiving timely information on how to improve their diets and prevent anaemia.

The prevalence of anaemia at baseline was high in all programme sites, ranging from 65 to 99 per cent. The evaluations revealed a statistically significant ($p < 0.001$) decrease in the prevalence of anaemia from baseline to endline in intervention groups compared to comparison groups. The reduction in the prevalence of anaemia was observed both in school-going girls and in out-of-school girls. This decrease ranged from 5 percentage points in Jharkhand to 50 percentage points in Uttar Pradesh (figure 1) with an average 24 percentage point reduction (30 per cent decrease) after one year of programme implementation. Andhra Pradesh reported a decrease in the prevalence of anaemia of 70 percentage points after two years of programme implementation.

Figure 1: Reduction in the prevalence of anaemia in adolescent girls after one year of programme implementation. Initial Phase, Adolescent Girls Anaemia Control Programme (2000-2005), India



The mean haemoglobin concentration in adolescent girls increased in all programme sites. The greatest increase was observed in Uttar Pradesh, which reported an increase in the mean haemoglobin concentration from 85 g/L to 112 g/L over a period of six months. After two years of programme implementation, Andhra Pradesh reported an increase in the mean haemoglobin concentration from 111 g/L to 126 g/L. The prevalence of severe anaemia (haemoglobin concentration below 70 g/L) at baseline was reported to be as high as 5.4 per cent in Maharashtra. All programmes reported a significant decrease in the prevalence of severe anaemia except in Madhya Pradesh. The prevalence of moderate anaemia (70-99 g/L) decreased in all programme sites as well; this decrease ranged from 3 percentage points in Maharashtra to over 70 percentage points in Uttar Pradesh; the prevalence of mild anaemia (100-119 g/L) increased in the majority of state programmes. This shift in the prevalence of girls with mild anaemia is expected as the prevalence of severe and moderate anaemia decreases and girls 'graduate' from severe-to-moderate anaemia and become mildly anaemic or non-anaemic after the intervention. Data on body iron stores as indicated by serum ferritin concentration were analysed in Gujarat, where the prevalence of low serum ferritin (concentration below 12 μg/ml) decreased from 50 per cent to 41 per cent ($p < 0.0001$) after one year of programme implementation.

About 80 per cent of the girls who participated in the initial phase reported that they benefited from the Adolescent Girls Anaemia Control Programme; the benefits reported by the girls comprised: "feeling healthier", "feeling better", "having more energy", "not feeling sleepy", "feeling less fatigued", "not experiencing breathing problems", "having better physical capacity", "experiencing increased alertness", "having better concentration in school", "having regular menstrual cycles", "experiencing less abdominal pain during menstruation" and "having brighter skin". Counselling sessions emphasised the benefits of WIFS for improved school performance, improved performance in sports and, most importantly

improved overall development. About 50 per cent of girls who participated in the initial phase reported some undesirable effects such as black stools, nausea, giddiness, heartburn and vomiting. The incidence of side effects declined as the implementation of the programme matured. In Gujarat, 30 per cent of girls reported side effects in the initial stages of the programme while only 14 per cent did at programme endline. Similarly, in Uttar Pradesh the proportion of girls reporting side effects in the initial stages of the programme was 50 per cent while this proportion was reduced to 2 per cent at programme endline. The decline in the incidence of undesirable effects was attributed to the fact that teachers, *anganwadi* workers, ASHAs, and community resource persons in addition to monitoring programme implementation provided regular counselling and support to the adolescent girls about how to prevent anaemia and mitigate the potential undesirable effects of IFA supplementation and deworming prophylaxis.

In summary, the evaluation of the initial phase of the Adolescent Girls Anaemia Control Programme indicated that the programme had a positive impact in reducing the prevalence and severity of anaemia in both school-going and out-of-school girls. The common features of the programmes that attained success included: girls' adherence to the programme, regular monitoring of adherence by programme managers, regular and consistent counselling and information for the adolescent girls and the community at large on the benefits of the programme and the potential undesirable effects of WIFS supplementation and deworming prophylaxis, effective management of supplies (no stock outs), mainstreaming anaemia control as part of a broader life skills education framework for adolescent girls, and appropriate resource allocation. Most evaluations reported that the IEC component was the weakest component of the programme and that more innovative approaches were required.

Costs in the initial phase

The cost of the programme in its initial phase ranged from INR 5.5 to INR 357 per adolescent girl, per year. This wide range is explained to a large extent by the differences in programme components (e.g. supplies, training, supervision, counselling and communication) and the source of the cost estimates provided. In seven of the 11 programmes the estimated cost ranged from INR 12 to INR 38 (USD 0.13 to USD 0.88) per adolescent girl, per year. In these programmes, the cost was related to the procurement of IFA supplements and deworming tablets, training, program operations, monitoring supervision and communication. The evaluation indicated that once the initial training and monitoring capacity is in place the actual average cost of implementing the programme is estimated to be INR 25 (USD 0.58) per adolescent girl, per year. Estimates of the cost of 11 programmes in the initial phase in a selected number of states are provided in table 1.

Table 1: Estimated cost per girl per year of the Adolescent Girls Anaemia Control Programme Initial Phase (200-2005), India*

State	Cost per girl per year (INR)	Cost per girl per year (USD)	Package of services
Tamil Nadu	5.5	0.13	IFA supplements, deworming tablets, and nutrition counselling including the cost of procurement and distribution of supplies
Gujarat	12.3	0.28	IFA supplements, deworming tablets and nutrition counselling; in addition, brochure for girls and teachers, set of 3 posters for schools (2 sets per school) andFAQs booklet on anaemia (2 per school)
Maharashtra	17.4	0.39	IFA supplements, deworming tablets and nutrition counselling; in addition, training modules for girls, training of key trainers from Education, Health, ICDS,Tribal Development and the Corporation, life skills training, IEC through brochures, '*melas*', sensitisation sessions, local plays, flip book on life skills and anaemia, and sensitisation of elected representatives
Rajasthan	24.0	0.55	IFA supplements (provided by Health), deworming tablets and nutrition counselling
Madhya Pradesh	25.5	0.58	IFA supplements, deworming tablets and nutrition counselling; in addition, brochure for girls and teachers, AWWs, supervisors, ANM, and Sarpanch, a set of four posters for AWCs and schools, training module and FAQ on anaemia (1 per school, 1 per ICDS sector)
Jharkhand	32.4	0.74	IFA supplements, deworming tablets and nutrition counselling; in addition, information booklet for girls and teachers, posters, mass media (print, radio, TV, cinema) and folk media
Karnataka	35.8	0.81	IFA supplements, deworming tablets and nutrition counselling
Andhra Pradesh	128.6	2.92	IFA supplements, deworming tablets and nutrition counselling; in addition, posters, folders, press, individual counselling and parent counselling and sought approval, costs of involving panchayat raj, counselling by PHC medical officers, logos, and cooking demos
Uttar Pradesh (L)	179.1	4.07	Life skills education, training module for adolescent girls, pamphlets, wall writing, posters, adolescent cards, training of 3 *kishori* from each AWC identified under *Kishori* Shakti Yojna, training of AWWs, LHVs, ANMs, nodal teachers, principals, ICDS supervisors and PRI Members, regular sessions at AWCs and schools followed by group discussions, heath camps (counselling) and TV shows
Rajasthan 1 (KSY)	183.3	4.17	IFA supplements, deworming tablets and nutrition counselling; in addition, training of 3 *kishori* from each AWC identified under *Kishori* Shakti Yojna, regular sessions at AWCs and group discussions
Rajasthan 2 (KBY)	357.0	8.11	IFA supplements, deworming tablets and nutrition counselling; in addition, programme operation costs, monitoring and evaluation costs

**Note that Government in-kind costs and other organisation costs besides UNICEF are not reflected in these estimates.*

Consolidation Phase (2006–2010)

In the initial phase of the Adolescent Girls Anaemia Control Programme, the evidence-base was built. The encouraging results provided state governments with a solid foundation to scale up the programme using government funds. In this phase, UNICEF's role evolved from one of intense programme support to a technical advisory role. UNICEF's role can be summarised as follows:

- **Garnering political commitment:** With the positive results of the initial phase, UNICEF focused on garnering increased involvement by the union and state governments in the expansion phase. In this phase, governments played an active role by ensuring political commitment and making increasingly important budgetary provisions for the Adolescent Girls Anaemia Control Programme under the National Rural Health Mission.

- **Planning and convergence:** Planning was carried out in convergence among the Departments of Health, Women and Child Development and Education. UNICEF provided technical support for the finalisation of the states' project implementation plans, which included strategies and budgets for scaling up the Adolescent Girls Anaemia Control Programme at scale with quality and equity.

- **Effective programme implementation:** As was the case in the initial phase, the Adolescent Girls Anaemia Control Programme was implemented by the Departments of Education and Women and Child Development. However in this phase, the Department of Health and Family Welfare strengthened its support to the programme by monitoring the scaling up process in coordination with the two main implementing departments and ensuring the procurement and distribution of supplies.

- **Strategic gap filling:** In terms of procurement and distribution function, UNICEF focused on the provision of strategic gap filling when there were delays in government procurement processes so as to ensure that adequate amounts of IFA supplements and deworming tablets were made available for the programme in a timely manner.

- **Programme communication:** UNICEF intensified its technical support to state governments for the design of effective IEC strategies to reach adolescent girls, their parents and their communities at large. Community leaders, community members, community volunteers, and school teachers were involved in IEC and social mobilisation strategies. Community platforms such as the Mother and Child Health and Nutrition Days and Village Health and Nutrition Days were used as effective platforms for mobilising girls, parents and communities around the Adolescent Girls Anaemia Control Programme.

- **Monitoring and evaluation:** UNICEF supported state governments in monitoring the implementation of the programme at different levels and facilitated periodic reviews to monitor progress. Support was also provided to the states to ensure the adequate documentation of the programme, capture lessons learnt, better practices, success stories, and challenges and opportunities for action and wider dissemination.

Between 2006 and 2010, the Adolescent Girls Anaemia Control Programme increased significantly its reach and coverage. By the end of 2010, the programme was being

implemented state-wide with state funds in 11 states. The coverage of the programme doubled as the number of adolescent girls benefiting from the Adolescent Girls Anaemia Control Programme increased from 8.8 million by the end of 2005 to 14.5 million by the end of 2010. About 30 per cent of the girls enrolled in the programme by the end of 2010 were out-of-school girls while 70 per cent were school-going girls (table 2).

Table 2: Consolidation Phase (2006-2010), Adolescent Girls Anaemia Control Programme, India, Programme coverage by December 31, 2010

State	Number of school-going adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme	Number of out-of-school adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme	Total number of adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme
Assam	162,261	0	**162,261**
Bihar	529,249	104,130	**633,379**
Chhattisgarh	304,005	48,900	**352,905**
Jharkhand	1,946,729	150,000	**2,096,729**
Gujarat	1,118,042	506,777	**1,624,819**
Madhya Pradesh	0	104,000	**104,000**
Maharashtra	1,968,000	1,941,885	**3,909,885**
Odisha	22,013	431,441	**453,454**
Rajasthan	565,514	599,083	**1,164,597**
Uttar Pradesh	1,200,000	0	**1,200,000**
West Bengal	2,271,120	564,660	**2,835,780**
Total	**10,086,933**	**4,450,876**	**14,537,809**

Box 2: Views and perceptions of adolescent girls, parents and programme implementers Adolescent Girls Anaemia Control Programme, Jharkhand 2009

The **adolescent girls** reported that they participated enthusiastically in the Adolescent Girls Anaemia Control Programme because of the many benefits the programme brought to them; one of the girls reported that: "*we do not feel tired, we can concentrate, we focus better on our studies, we do not fall sick and our face looks bright*."

The **parents** of the girls enrolled in the programme stressed the importance of sustained awareness generation on the programme benefits; one of them said that *"in the beginning, some of us thought that the IFA tablets were contraceptives and hence we did not allow our daughters to participate; there needs to be continuous communication with the parents to ensure support by them to the programme."*

School principals and teachers stated that anaemia was a major problem among adolescent girls, which was affecting their schooling; one of them reported that "*since we started the programme girls are participating in extra-curricular activities, they are not lethargic anymore; their enrolment and participation [in school] have increased and their marks in exams are good*."

The **nodal girls** involved in the smooth functioning of the WIFS and the recording of girls' adherence to the programme confirmed the good participation of the girls in the programme and saw themselves as models to other girls; one of them reported: *"I became nodal girl in 2006; I really like my association with the programme; I was able to better concentrate on my studies after taking regularly IFA supplements…now all girls want to be like me."*

In the community-based programme, the ***anganwadi* workers** reported similar benefits for out-of-school girls to those reported by the school principals and teachers for school-going girls; one *anganwadi* worker said that *"the adolescent girls are healthier than before, they feel less tired and have more energy for their household chores."*

The **state level nodal officers** reported that the programme was working well and that it was an example of inter-department convergence; one added that*" we are making sincere efforts to ensure that all girls are covered under this programme; not even a single girl irrespective of whether she in public or private schools or she is out-of-school should be left out."*

Figure 2: Key programme implementers for School-Going Girls Adolescent Girls Anaemia Control Programme (2000-2010), India

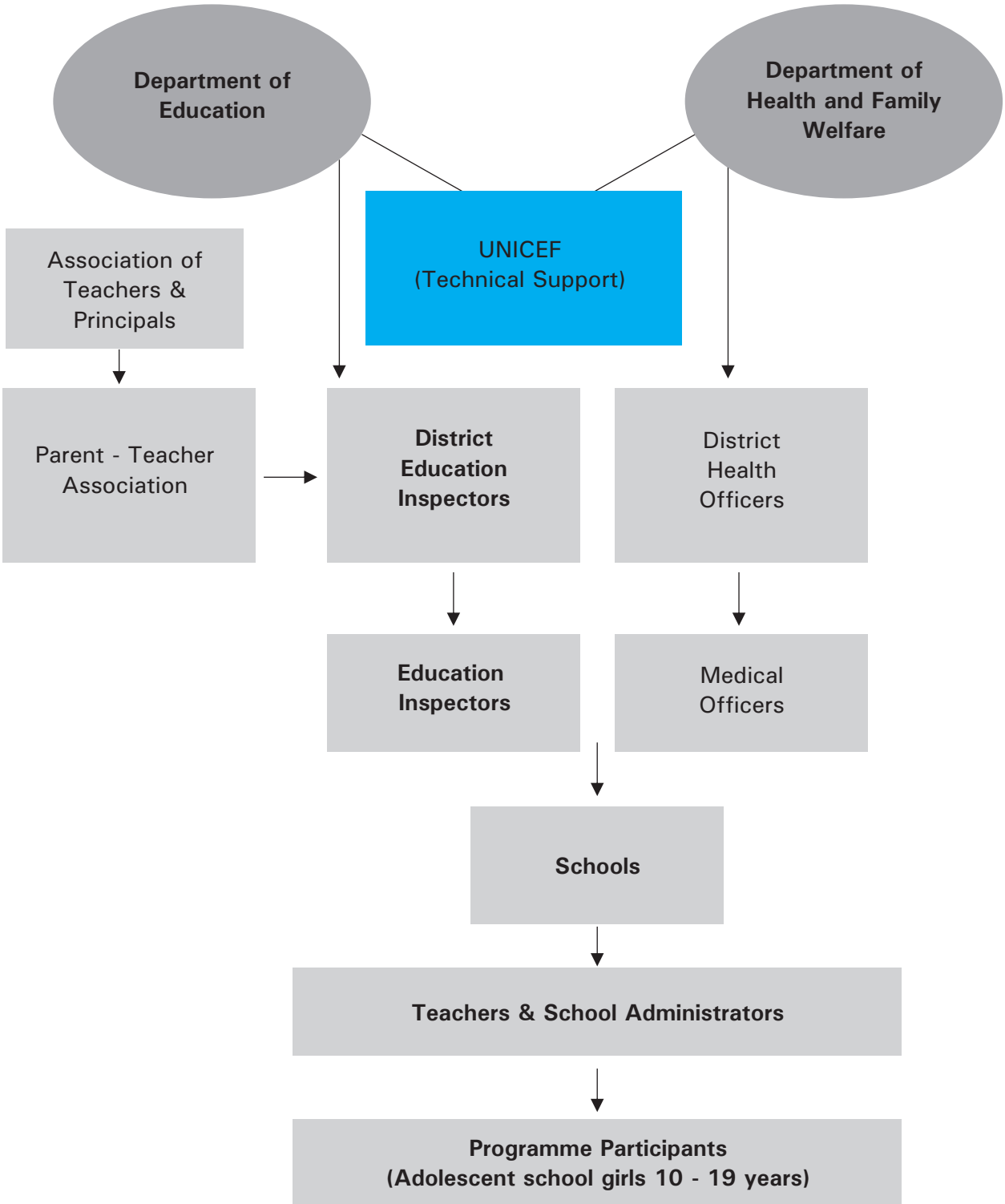
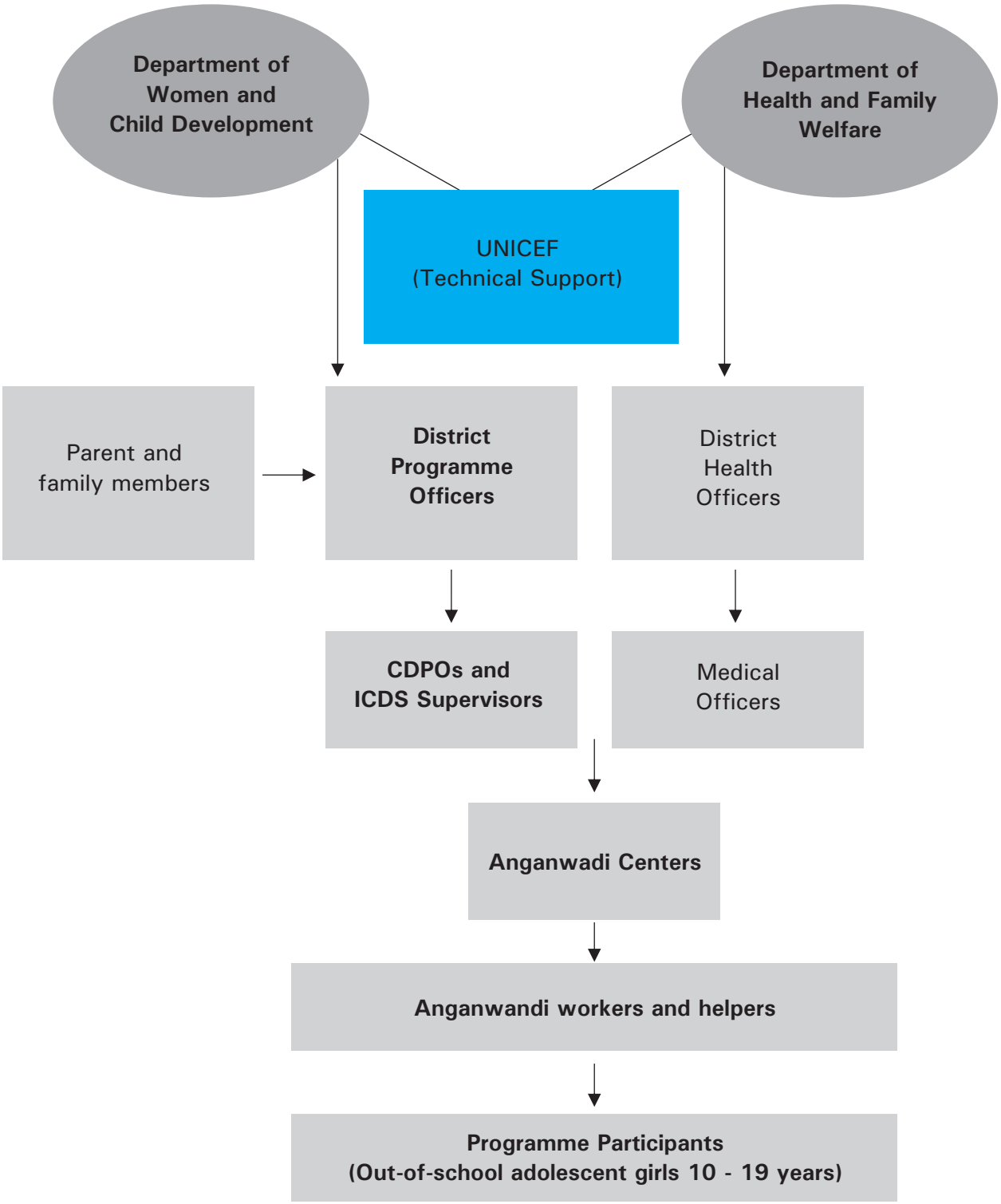


Figure 3: Key programme implementers for Out-of-School-Girls Adolescent Girls Anaemia Control Programme (2000-2010), India



*CDPO: Child Development Programme Officer; ICDS, Integrated Child Development Services

Expansion Phase (2011 and beyond)

The initial and consolidation phases of the Adolescent Girls Anaemia Control Programme demonstrated that the programme was effective in reducing the prevalence and severity of anaemia among adolescent girls and that it was possible to scale up its reach and coverage with state government funds; importantly, the programme contributed to put adolescent girls at the centre of policy formulation and programme design in India. In 2011, the Government of India launched the Rajiv Gandhi Scheme for the Empowerment of Adolescent Girls, also known as SABLA. In its initial phase, SABLA is to be implemented in 200 districts across the country (about one-third of the districts in India) through the ICDS programme.

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SABLA aims at empowering adolescent girls (11-18 years) by improving their nutritional and health status and life skills. SABLA delivers an integrated package of nutrition and non-nutrition services, primarily to out-of-school adolescent girls. As part of the programme, all adolescent girls benefit from the anaemia control programme (WIFS, biannual deworming prophylaxis and nutrition education); additionally girls are provided a hot cooked meal or a take home ration, and education and counselling on reproductive and sexual health, including family planning and contraception, prevention of early pregnancy and HIV infection, and menstrual hygiene management.

At the national level, UNICEF supported the Ministry of Women and Child Development in conceptualising the programme and developing its operational guidelines as well as in raising awareness among programme managers from the Ministry of Women and Child Development, the Ministry of Health and Family Welfare and other government departments about the SABLA scheme. In addition, UNICEF provided technical support to National Institute of Public Cooperation and Child Development, a nodal training institute in the country, to prepare the SABLA training package. Upon request by the Ministry of Women and Child Development, UNICEF provided technical support to develop a monitoring and evaluation framework for the programme and will provide technical support to evaluation.

At the state level, UNICEF raised awareness among government officials from the Departments of Women and Child Development, Health and Family Welfare, Education and Vocational Training on the SABLA scheme and provided technical support for the development of state and district Programme Implementation Plans. Additionally, UNICEF state offices provided technical support to state government departments in 1) contextualising and translating the training module and kit into the local languages; 2) mapping state training resource agencies;3) supporting the training of master trainers;4) expanding the district training teams;5) providing technical support to and facilitating the training of *anganwadi* workers and *Sakhis* and *Sahelis* through partnerships with NGOs or the existing government system. UNICEF state offices are also supporting the state governments in implementing the

programme effectively, fostering convergence between state departments, expanding and strengthening partnerships for the implementation of SABLA and providing technical support in programme monitoring and evaluation.

By the end of 2011, the Adolescent Girls Anaemia Control Programme was being rolled out state wide in 13 states (Assam, Bihar, Chhattisgarh, Jharkhand, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal) using schools, *anganwadi* centres and SABLA as the delivery platforms. The programme was reaching 27.6 million adolescent girls of whom 16.3 million school-going girls and 11.3 million out-of-school girls. This represented nearly two-fold increase in the number of girls reached by the programme (from 14.5 to 27.6 million). Particularly important was the 2.6 fold increase in the number of out-of-school girls reached (from 4.4 to 11.3 million). (table 3)

Table 3: Expansion phase (2011 and beyond), Adolescent Girls Anaemia Control Programme, India, Programme Coverage by December 2011

Name of the state	Number of school-going adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme	Number of out-of-school adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme	Total number of adolescent girls benefitting from the Adolescent Girls Anaemia Control Programme
Assam	247,817	632,369	880,186
Bihar	529,249	104,130	633,379
Chhattisgarh	552,432	125,317	677,749
Jharkhand	1,172,209	1,959,584	3,131,793
Gujarat	1,120,789	506,777	1,627,566
Kerala	547,898	0	547,898
Madhya Pradesh	336,081	1,205,626	1,541,707
Maharashtra	1,968,000	1,881,820	3,849,820
Odisha	22,013	2,199,159	2,221,172
Rajasthan	410,682	609,916	1,020,598
Tamil Nadu	2,747,029	1,162,464	3,909,493
Uttar Pradesh	1,200,000	0	1,200,000
West Bengal	5,424,577	914,720	6,339,297
Total	**16,278,776**	**11,301,882**	**27,580,658**

Lessons Learnt and Way Forward

The genesis and expansion of the Adolescent Girls Anaemia Control Programme demonstrate that appropriate leadership and programme action can successfully scale up essential evidence-based nutrition programmes for children and women. Several success factors and lessons learned have been identified in the decade that spans from the initial phase of the programme to end 2011:

- **Evidence-based advocacy** using global and national evidence contributed to garner political support to pilot test (initial phase) the programme and assess its effectiveness in different programmatic settings in India;

- **Data on effectiveness and cost** was crucial to garner political commitment for the consolidation phase of the programme; particularly important was the evidence on the impact of the programme in its initial phase in reducing the prevalence and severity of anaemia as well as the perceived benefits by girls and their families;

- **Synergy among state departments** and a clear segregation of roles and responsibilities among the departments of Health and Family welfare, Women and Child Development and Human Resource Development (Education) at the national and state levels was key in the successful pilot testing and consolidation of the programme at scale with quality, including among others budget allocations in Programme Implementation Plans to ensure the training of frontline workers and an uninterrupted supplies;

- **Involvement of stakeholders** at all levels of the programme, including girls, parents, community leaders, teachers, principals, district level programme managers, state level policy makers, and media is essential to ensure programme uptake, coverage and ownership;

- **Timely and quality communication** with adolescent girls and their families and communities about the benefits of the programme, the potential undesirable effects of WIFS and deworming prophylaxis and how to mitigate them was essential to ensure girls' adherence to the programme;

- **Timely availability of supplies**, particularly IFA supplements and deworming tablets, IEC materials and monitoring tools in the schools and *anganwadi* centres is central to the girls' adherence to the programme and programme success;

- **An integrated package** of interventions including anaemia control services, counselling and support as well as other relevant components for adolescent's growth, development and empowerment including life skills education is important; however, it is crucial to focus on a **limited number of evidence-based interventions** and launch the programme with a focus on large scale, avoiding 'comprehensive-but-non-scalable' projects; scale and results are of the essence;

- **Use existing delivery platforms** today while creating new policy and programme opportunities for tomorrow: in India the Education and ICDS systems provided the initial delivery platform for the programme (initial and consolidation phases) and the SABLA scheme for the empowerment of adolescent girls provided an additional policy opportunity for the expansion of the programme;

- **Girls are the best advocates** as they can be very articulate about the benefits of their programme; the "peer-to-peer/girl-to-girl" education and counselling approach increased girls' interest, enthusiasm and adherence to the programme; moreover, girls can effectively advocate for expansion of the programmes to include additional services (programmatic expansion), areas (geographical expansion) and population groups (inclusion) such as scheduled castes, scheduled tribes and minority groups.

Figure 4: A continuum of care for the nutrition, development and empowerment of adolescent girls Adolescent Girls Anaemia Control Programme, India 2011 and beyond

Conclusion

The prevalence of undernutrition and anaemia among adolescent girls in India is alarmingly high. Global and national evidence was used to advocate for the need to implement large scale programmes for the control of anaemia in adolescent girls. As a result model programmes were initiated in a selected number of districts and states between 2000 and 2005 to assess the cost and effectiveness of strategies to reduce the prevalence and severity of anaemia among adolescent girls. Once the effectiveness and low cost of these interventions were established, the Adolescent Girls Anaemia Control Programme was scaled up in 13 states of India with state government funds, and over 27 million adolescent girls were reached by the end of 2011 through the Education, ICDS and SABLA platforms. As the main partner of state governments on Maternal and Child Nutrition, the role of UNICEF has evolved from intense programme support (design, implementation, monitoring and evaluation) to a technical advisory role in the consolidation and expansion phases. Collaboration and convergence among the Ministry of Health and Family Welfare, the Ministry of Women and Child Development and the Ministry of Human Resource Development at the national and state level have been critical for going to scale. The lessons learned from this decade of programme experience suggest that the Adolescent Girls Anaemia Control Programme has the potential to become an important platform for intersectoral convergence among key government departments and UNICEF programmes to empower adolescent girls, reduce gender and social inequities, and break the inter-generational cycle of undernutrition and deprivation in India.

Further Information

Key contacts	Suggested Readings
Dr. Kajali Paintal, Nutrition Specialist, UNICEF-India, New Delhi Dr. Victor Aguayo, Chief Child Nutrition and Development, UNICEF-India, New Delhi	1. Prevention of deficiency anaemia in adolescents: role of weekly iron and folic acid supplementation. World Health Organization, 2011. 2. Weekly iron and folic acid supplementation programmes for women of reproductive age: an analysis of best programme practices. World Health Organization, 2011. 3. Rajiv Gandhi scheme for the empowerment of adolescent girls (Sabla): implementation guidelines for state governments and UT administrations; Ministry of Women and Child Development, Government of India, 2010. 4. Accelerating efforts to advance the rights of adolescent girls: A joint United Nations Statement; ILO, UNESCO, UNFPA, UNICEF, UNIFEM and WHO, 2010. 5. Nutrition in adolescence; issues and challenges for the health sector. Issues in adolescent health and development. WHO discussion papers on adolescence, 2005. 6. National Family Health Survey (NFHS-3). International Institute for Population Sciences (IIPS) and ORC Macro. India, Mumbai: IIPS, 2005-06.

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