

**RETURNS ON**  
**INVESTMENT IN**  
**ADOLESCENTS'**  
**SEXUAL AND**  
**REPRODUCTIVE**  
**HEALTH IN**  
**RAJASTHAN**

September 2021

# Abbreviations

|       |   |
|-------|---|
| AFHC  | Adolescent Friendly Health Clinic           |
| ASHA  | Accredited Social Health Activist           |
| ASRH  | Adolescents' Sexual and Reproductive Health |
| AWW   | Anganwadi Worker                            |
| BCR   | Benefit-Cost Ratio                          |
| CAC   | Comprehensive Abortion Care                 |
| CHC   | Community Health Centre                     |
| CPR   | Contraceptive Prevalence Rate               |
| DALY  | Disability-Adjusted Life Year               |
| DH    | District Hospital                           |
| FP    | Family Planning                             |
| FW    | Family Welfare                              |
| GDP   | Gross Domestic Product                      |
| GoI   | Government of India                         |
| IEC   | Information, Education and Communication    |
| IFA   | Iron and Folic Acid                         |
| IMR   | Infant Mortality Rate                       |
| INR   | Indian Rupee                                |
| IPV   | Intimate Partner Violence                   |
| IUCD  | Intrauterine Contraceptive Device           |
| LMIC  | Low- and Middle-Income Countries            |
| mCPR  | Modern Contraceptive Prevalence Rate        |
| MMR   | Maternal Mortality Ratio                    |
| MoHFW | Ministry of Health and Family Welfare       |
| MHS   | Menstrual Hygiene Scheme                    |
| NFHS  | National Family Health Survey               |
| NHM   | National Health Mission                     |
| PFI   | Population Foundation of India              |
| PHC   | Primary Health Centre                       |
| PIP   | Programme Implementation Plan               |
| RCH   | Reproductive and Child Health               |
| RH    | Reproductive Health                         |
| RKSK  | Rashtriya Kishor Swasthya Karyakram         |
| SRH   | Sexual and Reproductive Health              |
| STI   | Sexually Transmitted Infections             |
| UNFPA | United Nations Population Fund              |
| USD   | United States Dollar                        |
| WHO   | World Health Organization                   |
| WIFS  | Weekly Iron and Folic Acid Supplement       |

# Table of Contents

|   |           |
|---|-----------|
| <b>Executive Summary</b>  | <b>2</b>  |
| <b>1.Context of the Study</b>   | <b>4</b>  |
| <b>2.Rationale: The Case of Rajasthan</b>   | <b>6</b>  |
| <b>3.Objectives</b>   | <b>10</b> |
| <b>4.Methodology</b>  | <b>11</b> |
| 4.1 Analytical Framework  |           |
| 4.2 Design and Approach   |           |
| 4.3 Limitations   |           |
| <b>5.Findings</b>   | <b>15</b> |
| 5.1 Benefits of Investing in Adolescent Sexual and Reproductive Health            |           |
| 5.2 Health Gains from Investing in Adolescent Sexual and Reproductive Health      |           |
| 5.3 Economic Benefits from Investing in Adolescent Sexual and Reproductive Health |           |
| 5.4 Returns to Investment in Sexual and Reproductive Health Services              |           |
| 5.5 Costs for providing additional sexual and reproductive health services        |           |
| 5.6 Comparison of study findings with global evidence on benefit-costs            |           |
| 5.7 Savings from Scaling up Nutrition Services                                    |           |
| 5.8 Benefits from Scaling Up Menstrual Health Services                            |           |
| <b>6.Recommended Policy Actions</b>   | <b>24</b> |
| <b>Annexure</b>   | <b>26</b> |
| <b>References and Endnotes</b>  | <b>27</b> |

# Executive Summary

**15,000,000 adolescents**

23% of total population



Adolescents (10–19 years) constitute almost one-fourth of the total population of Rajasthan, India. Global evidence reports that investing in adolescents' physical, mental and sexual health could bring about a ten-fold economic benefit in low and middle-income countries (LMICs) by averting adolescent deaths and preventing unwanted pregnancies. Evidence also indicates that by making adequate investments in adolescent health and development, a country or state is better placed to reap a demographic dividend in terms of increased economic output, growth and social development.

In matters concerning sexual and reproductive health (SRH), adolescents are particularly vulnerable; important issues include, early and unintended pregnancy, unprotected sex leading to abortions and sexually transmitted infections, inadequate nutritional status and unsafe menstrual hygiene practices. Despite specific interventions for adolescents, issues related to their health remain a concern and therefore, strategizing ways to strengthen sexual and reproductive health services for adolescents is a policy priority is imperative. The study 'Returns on Investment in Adolescents' Sexual and Reproductive Health in Rajasthan' examines the economic and health benefits that could accrue from increased investment in adolescents' sexual and reproductive health-specific interventions in Rajasthan. The study also explores the potential for scaling up these services, which include access to contraceptives; comprehensive abortion care (CAC); weekly iron and folic acid supplementation (WIFS); and, menstrual hygiene schemes (MHS) across the state.

The findings reveal that the state would have to provide contraceptives to an additional 2,53,165 users (adolescents) and comprehensive abortion care services to 75,000 users over the next five years (2021–2025). The total cost of providing services to these additional users over the five years is estimated to be INR 412 million while the economic benefits, measured in terms of healthcare costs saved due to lower morbidity and mortality, are estimated to be around INR 1,220 million. These findings indicate a benefit-cost ratio (BCR) of about 3:1, i.e., INR 100 invested to meet adolescents' unmet need for contraceptives results in a return of INR 300, indicating a very high value for money from this investment. Potential health gains from these interventions could avert 1,45,696 unwanted pregnancies, 1,46,838 unwanted births, 14,043 unsafe abortions and deaths of more than 7,000 infants and 300 pregnant women between 2021 and 2025.

The findings further reveal that a per capita investment of INR 1 in WIFS would save almost INR 2–20 in terms of averted productivity loss in adolescents. In order to reap this benefit, the state will need to make an annual investment of INR 66–80 million to realise INR 132 million in returns. Also, to achieve coverage of at least 50 percent of in-school and out-of-school adolescents, the state will need to increase its reach of WIFS from the existing level of 9.2 percent to 25 percent. Similarly, the benefits from provision of sanitary pads to adolescent girls for a year would be about 4:1 indicating that every rupee invested in this intervention would produce a return of four rupees by averting loss in educational achievement and a consequent gain in productivity.

## COST v/s BENEFIT

**1:3** Contraceptives



**COST - INR 412 million**

provision contraceptives to additional 2,53,165 adolescents and comprehensive abortion care services to 75,000 users between 2021–2025

**VS**

**RETURN - INR 1220 million**

save healthcare costs due to lower morbidity and mortality among women and infants and prevention of unwanted pregnancies & births

**1:2** WIFS



**COST - INR 66-80 million**

provision of weekly folic acid supplements annually

**VS**

**RETURN - INR 132 million**

through averted productivity loss in adolescents

**1:4** Menstrual Hygiene



**COST - INR 1**

for provision of sanitary napkins to adolescent girls

**VS**

**RETURN - INR 4**

loss averted through education achievement and consecutive gain in productivity

The study revealed that the key actions required to strengthen and scale-up adolescent-specific SRH services in Rajasthan include:

- Increasing investments in adolescent-specific SRH services such as access to contraceptives, CAC, nutrition and menstrual hygiene by allocating greater resources and scaling up services across the state over the next five years.
- Adopting a multi-faceted, innovative solutions-driven approach to reach out to adolescents and increase coverage of services. Partnerships with different providers, deeper community engagement and sensitising providers as well as communities could help facilitate adolescents' access to SRH services, especially during COVID-19.
- Strengthening and scaling up nutrition supplementation programmes under the Mission Poshan 2.0 and the Mid-Day Meal Scheme in schools to improve nutritional outcomes in adolescents. Identification, measurement and understanding of anaemia among adolescents and coverage for prevention and treatment activities should be escalated.
- Ensuring quality of care and standards in provision of SRH services. These should be of high quality, non-discriminatory, age-appropriate and free from provider stigma and bias, so as to enable increased uptake of the services by adolescents.
- Strengthening the implementation and scaling up of adolescent-friendly health services by reaching out to adolescents with accurate information on contraceptives and messages relating to their SRH well-being, nutritional requirements and service availability through social and behaviour change communication initiatives and convergence models at the state and district level.
- Institutionalising and strengthening adolescent-specific data management systems to track and monitor the services accessed by adolescents in order to understand the issues and gaps, strengthen existing services, improve monitoring and facilitate better decision-making and optimal utilisation of available resources specific to adolescents.

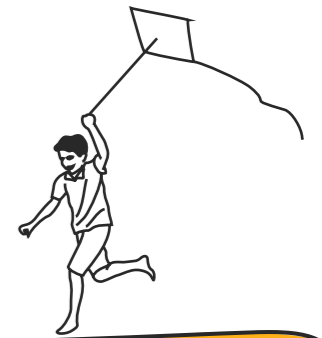
# 1. Context of the Study

Adolescents are a heterogeneous group aged between 10 and 19 years, who are in different stages of development, live in varying circumstances and have distinct needs. Adolescent well-being requires health and nutrition services that are both comprehensive and responsive to the unique needs of girls and boys. Within the age group of 10–19 years, the disease burden profile is significantly different for younger and older adolescents. While injuries and communicable diseases are prominent causes of disability and death in the age group of 10–14 years, outcomes of sexual behaviours and mental health become significant for the 15–19 age group<sup>1</sup>.

**In India, adolescents face numerous challenges to their healthy development due to a variety of factors that include structural poverty, social discrimination, regressive social norms, inadequate education, and early marriage and childbearing, especially in the marginalized and under-served sections of the population<sup>2</sup>. This age group is also susceptible to mental health issues, often leading to suicide and depression, substance abuse and addiction; nutritional deficiencies; violence; and, several communicable and non-communicable diseases<sup>3</sup>.**

While some adolescents have the knowledge, understanding and skills to be resilient and access support when required, a significant proportion are neither equipped nor supported to make the transition from childhood to adulthood<sup>4</sup>. Improving their knowledge and understanding of sexual and reproductive health (SRH), including HIV/AIDS, and building their life skills to take charge of their health, is therefore, a crucial step in meeting their health needs and fulfilling their rights.

1. Ministry of Health and Family Welfare, Government of India, Annual Report 2013.  
 2. Rashtriya Kishor Swasthya Karyakram Strategy Handbook  
 3. UNICEF 2016. Analysis of the Situation of Children, Adolescents and Women in India  
 4. Chandra-Mouli, V., Greifinger, R., Nwosu, A., et al. (2013). Invest in adolescents and young people: it pays. Reproductive Health Vol.10, No. 51.



With 253 million adolescents (which implies that every fifth person in India is an adolescent<sup>5</sup>), India has an unprecedented opportunity to accelerate economic development and reduce poverty. Investing in this segment of the population is ideal in order to leverage the nation's competitive advantage – its demographic dividend. As we envision a greater role for adolescents in the nation-building process, it is essential to understand the linkages between their health and economic growth. It is estimated that investments in adolescent health are expected to generate a ten-fold economic benefit by preventing 12 million deaths and more than 30 million unwanted pregnancies<sup>6</sup>.

According to the World Health Organisation (WHO), about one million girls under 15 years of age give birth every year, mostly in low-and middle-income countries (LMICs). Every year, nearly three million girls aged 15 to 19 undergo unsafe abortions<sup>7</sup>. This is because the unmet need for family planning is higher at 43 percent among adolescents aged 15–19 as compared to 24 percent for women aged 15–49<sup>8</sup> in the LMICs. About half of all pregnancies (10 million) that occur among adolescents are unintended. Access to sexual and reproductive health services could help adolescents avoid many health and other challenges they are likely to face in adulthood.

In a country like India, where discussions about puberty and sexuality are almost absent, adolescents are not prepared, emotionally or psychologically, to cope with the changes that occur during this period. Most adolescents have little or no knowledge about the biological and emotional changes that they are going through— aspects that have a huge bearing on their future social and economic lives. It is estimated that 27 percent of girls in India are married before they turn 18 and 7 percent, before they complete 15 years<sup>9</sup>. Only 10 percent of currently married girls and 16 percent of sexually active unmarried girls of age 15 to 19 use any modern contraceptive method<sup>10</sup>. These factors increase their chances of getting pregnant even before their bodies are fully developed.

5. Census 2011, Office of the Census Commissioner, Registrar General of India  
 6. Sheehan, P., et al. (2017). Building the foundations for sustainable development: a case for global investment in the capabilities of adolescents.  
 7. <https://www.who.int/reproductivehealth/topics/adolescence/en/>  
 8. Sully, E., et al. (2020). Adding It Up: Investing in Sexual and Reproductive Health 2019, New York: Guttmacher Institute.  
 9. How villages in India are going “child marriage free” (2018). Girls Not Brides.  
 10. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.

## 10X ECONOMIC BENEFIT

**through prevention of:**  
**12 million adolescent deaths**  
**>30 million unwanted pregnancies**

**27% - GIRLS MARRIED BEFORE THEY TURN 18**

**7% - GIRLS MARRIED BEFORE THEY TURN 15**

**50% - ADOLESCENT PREGNANCIES UNINTENDED**

The magnitude of these issues requires considerable effort and investment for placing adolescent health, especially their sexual and reproductive health, at the centre of public health in India. Many of these adolescent-specific issues are relevant for the state of Rajasthan where adolescents constitute a quarter of its total population and where there are potential gains expected from increased investments in adolescent sexual and reproductive health (ASRH).

# 2. Rationale: The Case of Rajasthan

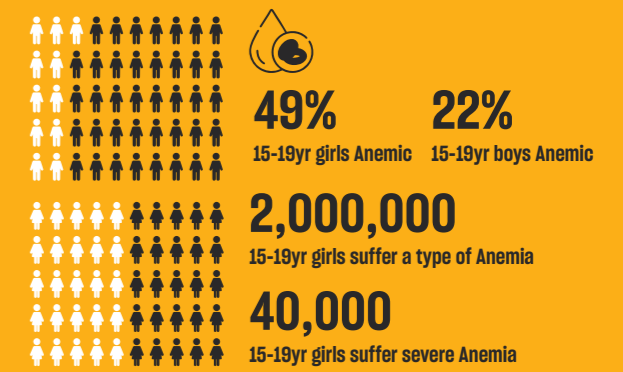
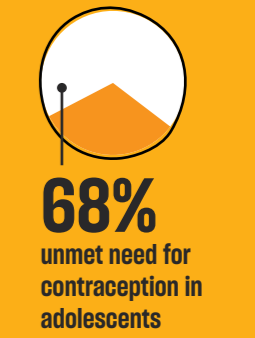
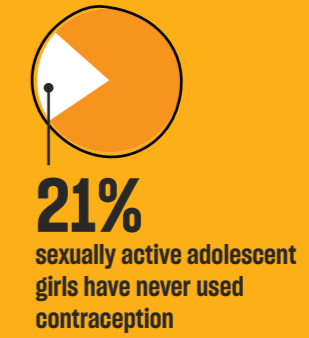
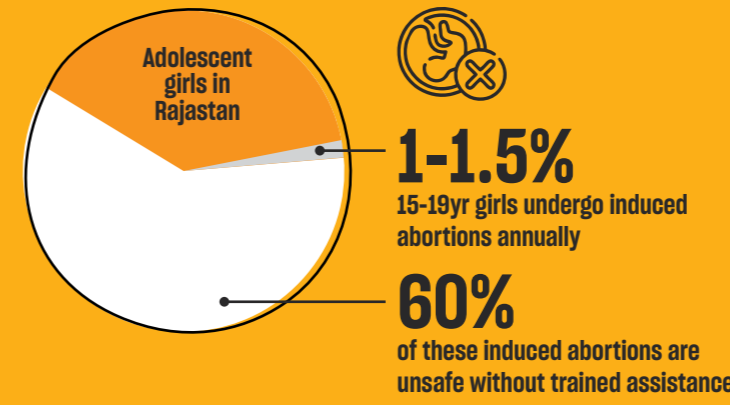
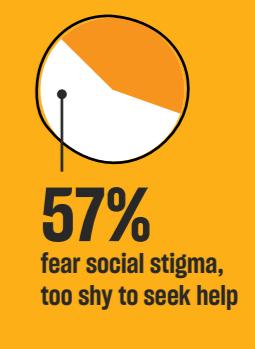
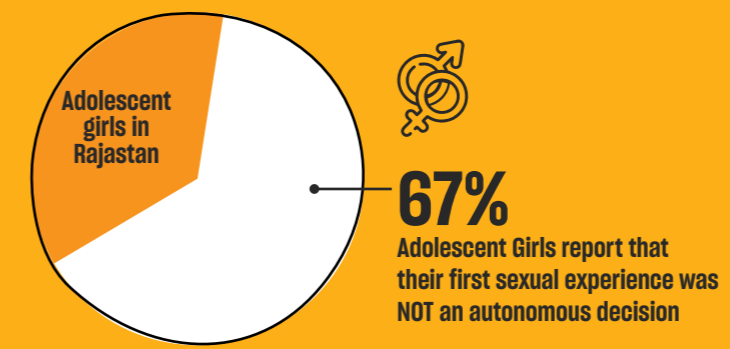
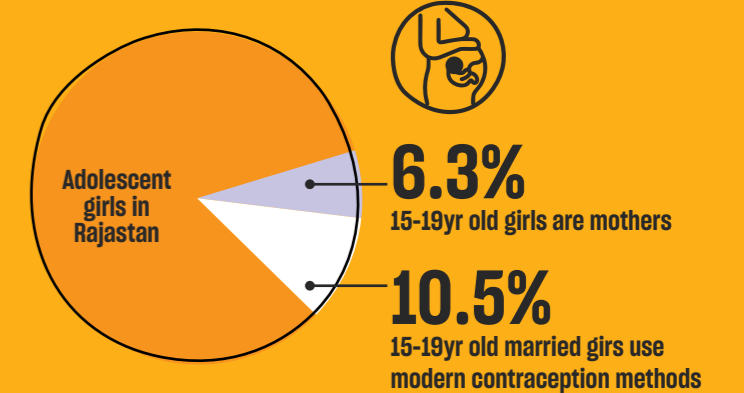
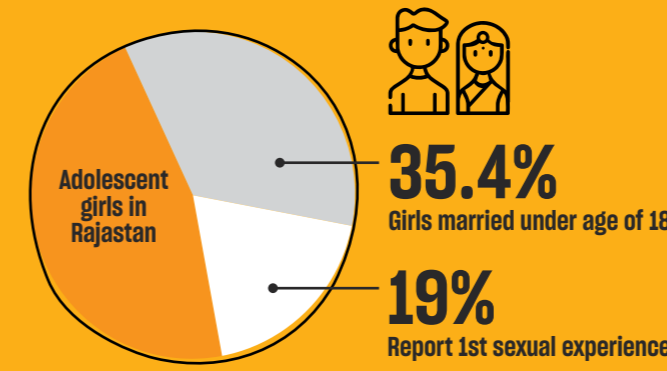
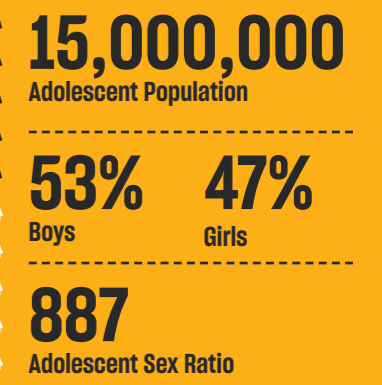
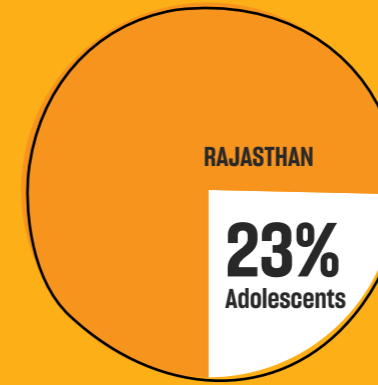
The total adolescent population of Rajasthan is 15 million (1.5 crore) or 23 percent of the total population in the state. Of these, 53 percent are males and 47 percent are females<sup>11</sup>. Child marriage continues to be of concern in Rajasthan as more than one-third of the girls (35.4 percent) get married before 18 years of age and 6.3 percent in the age group of 15–19 years are already mothers<sup>12</sup>. Only 10.5 percent of currently married women aged between 15 and 19 years use any modern contraceptive method<sup>13</sup>. A survey among adolescent girls in Rajasthan revealed insightful information on the knowledge, attitudes and behaviour of adolescents with respect to marriage, childbearing and family planning<sup>14</sup>. Although 19 percent of adolescent girls reported having had their first sexual experience, only 37 percent of them stated that it was an autonomous decision. While 83 percent of adolescent girls were aware of methods to space or delay pregnancy, 57 percent feared social stigma and felt too shy to seek services. Only 21 percent of sexually active adolescent girls had ever used contraception and 68 percent of those with a current need for contraception were not using any contraceptive method<sup>15</sup>.

Another critical reproductive health issue concerning adolescents in Rajasthan is that of unsafe abortions. It is estimated that annually about 10–15 per 1,000 girls in Rajasthan in the 15–19 age group undergo induced abortions<sup>16</sup>. Only about 40 percent of these take place with assistance from healthcare providers, indicating that 60 percent of the abortions in the 15–19 age group are 'unsafe'<sup>17</sup>.

High levels of anaemia in adolescents tend to have a direct bearing on their reproductive health status and also impact the maternal and child-related indicators in the state. Almost half of the girls (49 percent) in the 15–19 age group suffer from some degree of anaemia in comparison to 22 percent boys in the same age group. At the current prevalence rate, at least 2 million adolescent girls between 15 and 19 years of age in the state are likely to suffer some type of anaemia, with about 40,000 suffering from severe anaemia. The burden of anaemia is predominantly higher among girls who hail from the rural or tribal districts (Banswara, Udaipur, Dungarpur) that have relatively higher income inequalities and low literacy rates.

11. Census 2011, Rajasthan, Office of Census Commissioner, Registrar General of India.  
 12. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.  
 13. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.  
 14. Performance Monitoring and Accountability 2020 (PMA2020) (2018). Adolescent Girls Health Survey Results: Rajasthan.  
 15. Performance Monitoring and Accountability 2020 (PMA2020) (2018). Adolescent Girls Health Survey Results: Rajasthan.  
 16. PMA2020 Abortion Survey Results, Rajasthan. (2018). IIHMR University.  
 17. Bell, S.O., OlaOlorun, F., Shankar, M., Ahmad, D., Guiella, G., Omoluabi, E., et al. (2019). Measurement of abortion safety using community-based surveys: Findings from three countries. PLoS ONE 14(11): e0223146.

## RAJASTHAN ON OVERVIEW



Menstrual hygiene practices among adolescent girls are also a cause for concern in Rajasthan. Poor menstrual hygiene is a major reason for lower reproductive tract infections. About 45 percent of girls aged 15–19 years in the state do not use a hygienic method of menstrual protection<sup>18</sup>; Sixty-eight percent of girls use cloth every time or sometime during their menstrual cycles and 40 percent use sanitary pads. The awareness level of menstrual hygiene practices tends to be less among rural girls as compared with their urban counterparts. There are also concerns over disposal of used pads as a large proportion of girls dispose pads in inappropriate places<sup>19</sup>. This indicates their poor knowledge and lack of access to proper facilities for disposal of sanitary pads.



**The Rajasthan government has made focussed efforts to address the health concerns of adolescents through the Rashtriya Kishor Swasthya Karyakram (RKSK) programme. This programme essentially covers six thematic focus areas related to adolescent health, which include: nutrition, sexual and reproductive health, mental health, injuries and violence, substance abuse, and prevention of non-communicable diseases. RKSK is being implemented in ten districts of Rajasthan<sup>20</sup> since 2014 and covers one-fourth (24 percent) of the adolescents in the state.**

**24%** adolescents covered      **10** districts covered

1. Nutrition
2. Sexual and Reproductive Health
3. Mental Health
4. Injuries and Violence
5. Substance Abuse
6. Prevention of Non-Communicable Diseases

Three major interventions under this programme are:

- 1) Adolescent Friendly Health Clinics (AFHC)
- 2) Weekly Iron and Folic Acid Supplementation (WIFS) and,
- 3) the Menstrual Hygiene Scheme (MHS).

The AFHCs, widely known as Ujala clinics in Rajasthan, have been established within public healthcare facilities like primary health centres, community health centres, district hospitals and government medical colleges. These clinics offer counselling services through dedicated counsellors and clinical services by trained medical personnel in accordance with the needs of adolescents.

18. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.

19. Performance Monitoring and Accountability 2020 (PMA2020) (2018). Adolescent Girls Health Survey Results: Rajasthan

20. Banswara, Barmer, Bundi, Dholpur, Dungarpur, Jaisalmer, Jalore, Karauli, Rajsamand, Udaipur.

The WIFS intervention<sup>21</sup>, an integral part of RKSK, is not limited to the ten RKSK districts and is implemented in all districts through schools (for grades 6 to 12) and anganwadi centres (for out-of-school 10–19-year-old).

The MHS received an impetus in 2019 through the state's intensive effort to distribute free sanitary pads to adolescent girls in rural areas through frontline health workers. Initiatives have also been put in place to increase awareness about menstrual hygiene among rural adolescent girls; including safe disposal of used pads and through promotional activities such as Chuppi Todo (break the silence).

These interventions are supplemented by others such as the Adolescent Health Day organized in every village once every quarter. This intervention includes information dissemination, awareness generation and health check-ups for adolescents. The Peer Educators programme sensitizes adolescents on their health. It involves approximately two hours of participatory sessions per week conducted by peer educators (Sathiya) for 15–20 boys or girls from their community. The peer educators also inform adolescents about existing adolescent-friendly health services so that they can make use of these services when required.

Besides RKSK, the most important driver of adolescents' reproductive healthcare is the ongoing Family Welfare programme, which can delay pregnancy and childbirth and therefore reduce teenage pregnancies. Though this programme is not directly focussed towards adolescents, they are covered under this programme.

**The National Family Health Survey 4 (NFHS-4) reports that in Rajasthan, the unmet need for contraception (23.3 percent) among married adolescents is the highest among all age groups. Considering this unmet need for contraception among young couples, the state launched the Nayi Pahal (New Initiative) under the Mission Parivar Vikas in 2017 across 14 districts. This intervention is for young newlywed couples, who receive specially designed kits—packed with contraceptives, IEC materials, etc.—just before and after their wedding. The impact of this intervention is yet to be documented.**



While the state government has invested in several on-going interventions targeted towards improvement of adolescent sexual and reproductive health (ASRH), it is equally important to examine whether these interventions generate the required value for resources invested. The evidence from this study, apart from providing information on the health and economic gains from specific ASRH interventions, seeks to provide much-needed information about the potential impact of strengthening and scaling up of these interventions across the state.

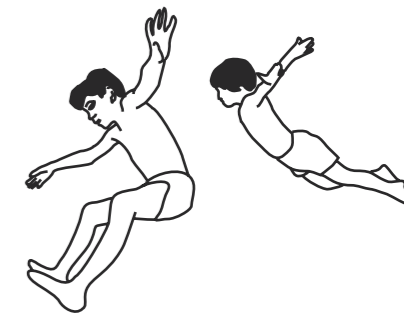
21. Each member of the target groups receives free elemental Iron and Folic Acid once in a week, 52 weeks a year, through an institutional mechanism (i.e., through schools and anganwadi centres). This is supplemented with a biannual de-worming (by Albendazole), information and counselling and screening of target groups for moderate/severe anaemia and referral.



## 3. Objectives

Against this background, the objectives of the study are to:

- Estimate the economic and health benefits from increased investments in ASRH-specific interventions in Rajasthan.
- Obtain estimates of additional resources required to optimise the gains from investment in ASRH and related interventions.
- Inform strategic engagement efforts to prioritise and increase investments for adolescent-specific health interventions within the state's development agenda.



## 4. Methodology

This study, Returns on Investment in Adolescents' Sexual and Reproductive Health in Rajasthan, seeks to estimate the impact or 'returns from investment' in adolescents, identifying specific interventions that are directly targeted towards the sexual and reproductive health (SRH) of adolescents in Rajasthan.

The interventions considered for the analysis are:

- 1) Strengthening reproductive health services, more specifically, contraceptive availability and comprehensive abortion care (CAC) services for adolescents<sup>22</sup>,
- 2) Scaling up the WIFS scheme and
- 3) Scaling up the MHS.

These interventions were selected primarily because they are the most important SRH-specific interventions for adolescents under the existing package of services in the National Health Mission (NHM).

### 4.1 Analytical Framework

The analytical framework (Figure 1) for this study is based on a Theory of Change. The Theory of Change was guided by a few principle arguments and assumptions:

- (i) the three SRH-specific interventions act together to generate health and economic outcomes, i.e., one acts as a complementary input to the other, and
- (ii) the SRH-sensitive environmental factors such as women's education, nutrition, empowerment, and increased participation in the labour market etc. (not shown in the figure) work as reinforcing agents and determine the pace and strength of the pathway shown in the figure.

Increased investment in adolescent-specific interventions is expected to bring substantial gains in terms of health outcomes, which then translate into economic benefits. In other words, greater resources devoted to adolescents' sexual and reproductive health today would imply reduced mortality and morbidity among mothers and children, and averted unwanted births. This, in turn, would result in a more-than-proportionate economic return in terms of savings in healthcare costs and social welfare.

22. Data on contraceptive and abortion seeking behaviour among unmarried adolescents is currently not available and hence the analysis is limited to married adolescents only.

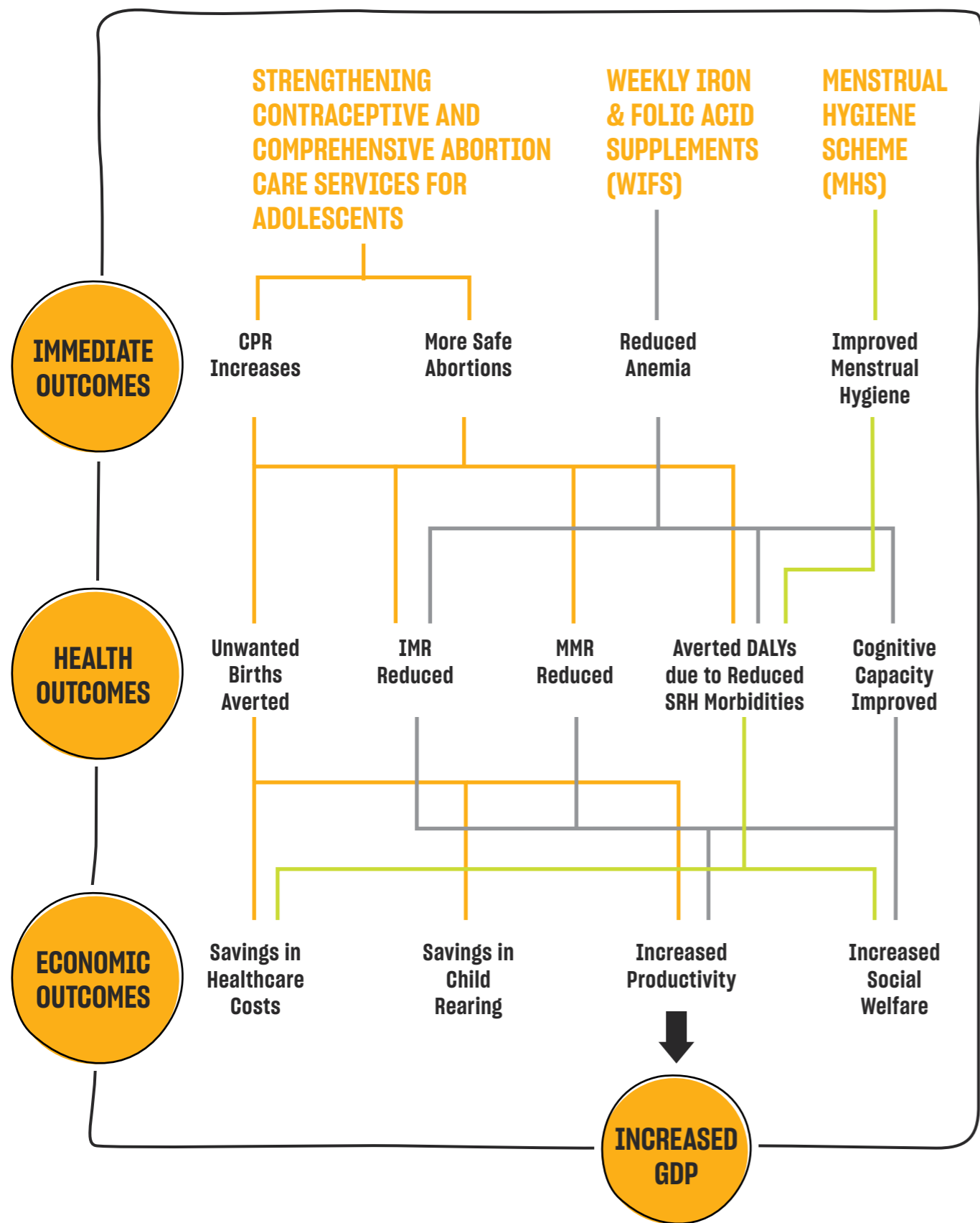
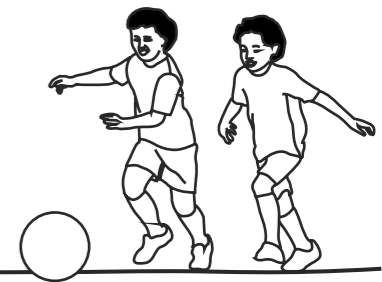


Figure 1: Analytical Framework for the Study

## 4.2 Design and Approach

The analytical framework clearly outlines the need for investing in adolescent-specific health interventions. In order to estimate the impact of contraceptive services and comprehensive abortion care services, the study followed the algorithm of 'Impact 2', a socio-demographic mathematical model developed to estimate the impact of family planning (FP) services<sup>23</sup>. A hypothetical scenario was created to estimate the health and economic gains if adolescents' sexual and reproductive health needs<sup>24</sup> were addressed through the existing reproductive health (RH) programme in Rajasthan.

The study adopted the following estimation process to highlight the health and economic benefits gained from meeting adolescents' unmet need for contraceptives and CAC services in Rajasthan over five years (2021–2025).

### Step 1: Calculation of Couple Years of Protection (CYP) from the Hypothetical Scenario

CYP is the estimated protection provided by contraceptive methods during a one-year-period, based upon the volume

of all contraceptives sold or distributed free-of-charge to clients during that period<sup>25</sup>. The CYPs for each contraceptive method were calculated by using the most recent conversion rates (Source: Impact estimator 2, MSI). For example, the conversion rate for one intrauterine device (IUD) equals 4.6 CYP. Similarly, one condom/pill user in a whole year equals one CYP.

The projected 'additional' users of each contraceptive were spread across five years. For example, the total number of IUD users (61,517) was divided by five (=12,303) to estimate CYP in each year as shown in Table 1 below.

Hence, it was estimated that in the first year, 12,303 IUD will be used and accordingly, 12,303 CYP will be generated. In the second year, there will be an additional 12,303 users. So, in the second year, the total CYP generated will be 24,607 (12,303 x 2 years). In the fifth year, only 60 percent of the Year 1 CYP are generated (as the conversion rate of 1 IUD = 4.6 years). Generation of CYPs will continue until Year 9 (as the users of Year 5 will continue to generate 4.6 CYPs). In this way, the total CYPs for each option were obtained by adding the CYPs accrued in each year as demonstrated in Table 1.

Table 1: Projected Additional Users of Contraceptives

| Projected Year | Y1     | Y2     | Y3     | Y4     | Y5     | Y6     | Y7     | Y8     | Y9   | TOTAL    |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|------|----------|
| Year 1         | 12,303 | 12,303 | 12,303 | 7382   |        |        |        |        |      | 56,595   |
| Year 2         |        | 12,303 | 12,303 | 12,303 | 12,303 | 7382   |        |        |      | 56,595   |
| Year 3         |        |        | 12,303 | 12,303 | 12,303 | 12,303 | 7382   |        |      | 56,595   |
| Year 4         |        |        |        | 12,303 | 12,303 | 12,303 | 12,303 | 7382   |      | 56,595   |
| Year 5         |        |        |        |        | 12,303 | 12,303 | 12,303 | 12,303 | 7382 | 56,595   |
| TOTAL CYP      | 12,303 | 24,607 | 36,910 | 49,213 | 56,595 | 44,292 | 31,989 | 19,685 | 7382 | 2,82,977 |

23. <https://www.mariestopes.org/what-we-do/our-approach/our-technical-expertise/impact-2>  
 24. Unmet need and CAC services among adolescents (15–19 years) over the next five years (i.e., 2021–2025). For CAC services, it is assumed that the intervention will target roughly 50% of the unmet need (see Annex 1).  
 25. <https://www.usaid.gov/global-health/health-areas/family-planning/couple-years-protection-cyp#:~:text=What%20is%20it%3F,to%20clients%20during%20that%20period.>





Youth Champions of Rajasthan

### Step 2: Calculating Adjusted CYPs

In this step, the total number of CYPs were adjusted for discontinuation rates (the number of women who will stop using a method of FP either during use or at the end of the contraceptive cycle) and the net of switching rates (the number of women who switch from one FP method to another) was estimated under each option. The formula for estimating the net discontinuation rate was:

Net discontinuation rate = (Discontinuation rate) × (1 – switching rate) × (% of spacing CYP in total CYP).<sup>26</sup> For example, in Rajasthan, the discontinuation rate (12 months) and the switching rate were 43 percent and 2.7 percent respectively (NFHS-4). The share of spacing CYP in the adolescent’s unmet need was 76 percent. Hence, the net discontinuation rate was  $43\% \times 97.3\% \times 76\% = 31.8\%$ . The CYPs derived for each year were adjusted by the net discontinuation rate.

### Step 3: Calculating DALYs

The assumption of DALYs gained per CYP was based on the conversion factor for India given in the Impact estimator, which assumes that 1 CYP = 0.143 DALYs gained for FP and 1 CAC = 0.286 DALYs for safe abortion. Finally, the DALYs were discounted by 10 percent to obtain the net discounted DALYs.

### Step 4: Calculating Direct Health Outcomes

The conversion factor on the Impact estimator was used to estimate the impact on some basic health indicators. For example, 100,000 CYPs = 33 maternal deaths averted, 700 infant deaths averted, and so on.

### Step 5: Estimating Economic Benefits

Economic benefits were estimated in terms of health cost savings. These are the savings in healthcare costs which would otherwise have been borne by individuals and governments to deal with maternal and infant mortalities and morbidities in cases of unwanted pregnancies. The savings in health costs were estimated using the conversion rates (India) from the Impact estimator.

The study also assessed the estimated coverage and additional users to be covered under WIFS, assuming a 50 percent coverage in the state. Due to lack of primary data specific to WIFS and MHS, the returns to investment from these interventions were derived using insights from research evidence on similar interventions.

## 4.3 Limitations

The study considered and analysed information relevant to Adolescent Friendly Health Clinics (AFHCs). However, the AFHC-related information could not be included in the cost-benefit analysis due to lack of disaggregate service specific data. Also, the coverage and usage data on AFHCs was too low to use in a modeling study. Data constraints resulted in restricting the findings to understanding only the health and economic gains from investing in contraceptive services, providing CAC services and savings from scaling up WIFS and MHS interventions.

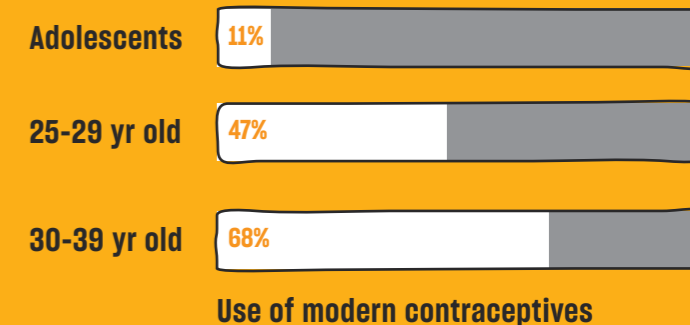
The study could not assess the social gains from such interventions. There are many indirect benefits such as savings in education costs due to births averted, women’s empowerment due to greater control over fertility, environmental benefits due to less congestion and savings in transport infrastructure costs among others. However, examining these indirect benefits did not form a part of the present study.

# 5. Findings

## 5.1 Benefits of Investing in Adolescent Sexual & Reproductive Health

### Strengthening reproductive health services to reduce teenage pregnancy

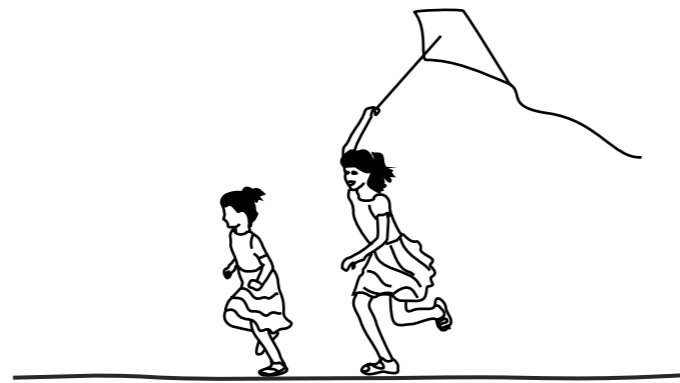
Reducing teenage pregnancy is the biggest challenge in addressing adolescents’ reproductive health needs. In Rajasthan, about 6.3 percent of girls in the age group of 15 to 19 years are already mothers or are pregnant<sup>27</sup>. The use of modern contraceptives is low at 11 percent among married adolescents in comparison with 47 and 68 percent usage among the 25–29 and 30–39 year age group respectively<sup>28</sup>. This unmet need for contraception among adolescents in the state results in unintended pregnancies and induced abortions. As adolescents often lack access to high quality abortion services, many of these abortions are unsafe.



Availability of contraceptives and comprehensive abortion care (CAC) services are therefore crucial for the well-being of adolescents, which further translates into better social and economic outcomes. The study used the existing scenario of contraceptive use and CAC services in Rajasthan and sought to understand the health and economic gains to the state if the government were to implement an intensive intervention to meet these unmet needs<sup>29</sup> over the next five years (2021–2025).

26. Acknowledging that only the spacing method can be discontinued.

27. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.  
 28. International Institute for Population Sciences (IIPS) and ICF. (2017). National Family Health Survey (NFHS-4), India, 2015–2016: Rajasthan. Mumbai: IIPS.  
 29. For CAC services, it is assumed that the intervention will target roughly 50% of the unmet need (see Annex 1).



The findings of the study (Table 2) reveal that in order to meet the contraceptive needs for married adolescents, the modern Contraceptive Prevalence Rate (mCPR) for spacing methods has to increase from the existing 10.1 percent to 32 percent in the 2021–2025 period in order to meet the current unmet need of married adolescents<sup>30</sup>. **In absolute numbers, over the next five years, the state would have to provide spacing methods of contraceptives to an additional 2,53,165 users and comprehensive abortion care services to an additional 75,000 users.**

**Table 2: Estimated 'Additional' Users of Contraceptives and Comprehensive Abortion Care Services among Married Adolescents (2021–2025)**

| BASELINE 2020  |          |   |
|--|----------|---|
|  |          | SOURCE/ASSUMPTION                         |
| a) Adolescent population –2011 ('000)                      | 7,388    | Census, 2011                              |
| b) Adolescent female population – 2020 ('000)              | 3,656    | Projection by MoHFW                       |
| c) Married women –2020 ('000)                              | 1,060    | 29% of adolescent women (Census, 2011)    |
| d) Current mCPR – (spacing)                                | 10.1%    | NFHS-4                                    |
| e) Total users of contraceptives <sup>31</sup> – (spacing) | 1,07,084 | (c) × (d)                                 |
| f) CAC users (approx.)                                     | 17,000   | See Annex 1                               |
| ENDLINE (2025) WITH INTERVENTION                           |          |   |
| g) Adolescent female population – 2025 ('000)              | 3,882    | Projection by MoHFW                       |
| h) Married women ('000) – 2025                             | 1,126    | 29% of adolescent women                   |
| i) Proposed mCPR (spacing)                                 | 32%      | targeting to meet the unmet need of 23.5% |
| j) Projected contraceptive users (spacing)                 | 3,60,250 | (h) × (i)                                 |
| k) Projected CAC users                                     | 92,000   | Assuming 50% of the unmet need            |
| l) Net 'additional' contraceptive users (spacing)          | 2,53,165 | (j) - (e)                                 |
| m) Net 'additional' CAC users                              | 75,000   | (k) - (f)                                 |

30. NFHS-4 also presented a small percentage of unmet need for permanent methods (e.g., female sterilization) among the 15–19 year old married women (1.6%). Given the lack of relevance in the context of adolescents, the present study keeps the permanent methods out of the analysis and centres on the spacing methods only.

31. Contraceptive use in this study includes married adolescents (15–19 years) both men and women. The different spacing methods of contraceptives include: condoms, pills, intrauterine devices and others such as injectables.

Table 3 provides the disaggregate details of additional users – both boys and girls for different contraceptive methods. The method-mix to be followed by the 'additional' users in this hypothetical scenario is assumed to align with the unmet needs for each method. For example, the unmet need for the spacing method (22.1 percent) is equally distributed across the major spacing methods and added to the existing contraceptive prevalence rate (CPR) for each method. It is assumed that the estimated additional 2,53,165 contraceptive users and 75,000 CAC users will be reached gradually through a scale-up process by the year 2025.

**Table 3: Estimated Distribution of the Additional Users of Contraceptives and Comprehensive Abortion Care Services (2025)**

| Contraceptive Methods                             | % of married adolescents (men & women) whose contraceptive needs are met | % of users | Number of additional users | Additional Couple Years of Protection (CYP) |
|---|--|------------|----------------------------|---|
| IUD   | 7.8  | 24.3       | 61,517                     | 2,82,977                                    |
| Pill  | 9.2  | 28.7       | 72,558                     | 2,17,675                                    |
| Condom  | 14.8   | 46.1       | 1,16,724                   | 3,50,173                                    |
| Other   | 0.3  | 0.9        | 2,366                      | 7,098                                       |
| <b>TOTAL</b>                                      | <b>32.1</b>  | <b>100</b> | <b>2,53,165</b>            | <b>8,57,923</b>                             |
| <b>(CAC) Comprehensive Abortion Care Services</b> |  |            | <b>75,000</b>              |   |

## 5.2 Health gains from investing in adolescent sexual and reproductive health

The health outcomes that accrue from meeting the unmet need for family planning and providing CAC services to adolescents are substantial and important to sustain their well-being and future development. As evident from Table 4, the potential gains from addressing the unmet need for contraceptives and CAC services to adolescents would **avert 1,45,696 unwanted pregnancies, 1,46,838 unwanted births and 14,043 unsafe abortions between 2021 and 2025. It could also save 7,321 infant lives and 343 maternal lives by 2025 and a gain of 80,058 in Disability Adjusted Life Years (DALYs).**

**Table 4: Estimated Health Gains from Investing in Adolescent SRH Services in Rajasthan by 2025**

| Health outcomes                | Health impacts (due to increased contraceptive use) | Health impacts (due to availability of CAC services) | Total health impacts |
|--------------------------------|---|--|----------------------|
| Unintended pregnancies averted | 1,45,696  |  | <b>1,45,696</b>      |
| Unwanted births averted        | 83,088  | 63,750   | <b>1,46,838</b>      |
| Maternal lives saved           | 193   | 150  | <b>343</b>           |
| Infant lives saved             | 4,096   | 3,225  | <b>7,321</b>         |
| Unsafe abortions averted       | 14,043  |  | <b>14,043</b>        |
| DALY gained (discounted)       |   |  | <b>80,058</b>        |



### 5.3 Economic benefits from investing in adolescent sexual and reproductive health

Additional investments in adolescent sexual and reproductive health (SRH) will also result in total health cost savings which would have otherwise been borne either by individuals or the government to provide for maternal and neonatal care resulting from unwanted pregnancies. The total health cost savings to the state for providing contraceptive and CAC services amount to INR 1,223 million (INR 122 crore) between 2021 and 2025 (Table 5).

**Table 5: Potential Cost Savings on Health due to Additional Contraceptive and CAC Services to Adolescents in Rajasthan (2021–2025)**

| Total costs saved on health        | INR (in million) |
|------------------------------------|------------------|
| <b>Contraceptives</b>              |                  |
| Due to averted infant deaths       | 576              |
| Due to averted maternal deaths     | 87               |
| Due to averted unsafe abortions    | 52               |
| <b>Comprehensive Abortion Care</b> |                  |
| Due to averted infant deaths       | 442              |
| Due to averted maternal deaths     | 67               |
| <b>Total</b>                       | <b>1,223</b>     |

### 5.4 Returns to investment in sexual and reproductive health services

The returns to investment in SRH services or the benefit-cost ratio (BCR) for Rajasthan is 2.97. **This implies that for every INR 100 invested to meet the unmet needs of adolescents, there could be a return of approximately INR 300 in terms of healthcare costs saved** (Table 6). These monetary savings, along with the health gains presented in Table 4, indicate the varied benefits from increased contraceptive use and reduced levels of unwanted pregnancies in adolescents.

**Table 6: Benefit-Cost Summary Results**

|  |          |
|--|----------|
| Total cost (PV) – In million INR                 | 412      |
| Benefit (PV) – In million INR                    | 1,223    |
| Benefit-to-cost ratio (return on INR1 invested)  | 2.97     |
| Economic cost per CYP (INR)                      | 703.92   |
| Economic cost per DALY gained (INR)              | 5,145    |
| CYPs attributable to the intervention (adjusted) | 5,85,124 |

Note: PV – Present Value

### 5.5 Costs for providing additional sexual & reproductive health services

Having estimated the additional users of contraceptive and CAC services, it is imperative to calculate an approximate cost for providing these services between 2021 and 2025. Table 7 presents the total (discounted) additional cost for each year and the total cost over five years. The estimated costs are based on the unit cost estimates from a recent costing study conducted in Rajasthan by the Center for Disease Dynamics, Economics and Policy (CDDEP)<sup>32</sup>. The total estimated cost (discounted) is approximately INR 412 million or INR 41.2 crore between 2021 and 2025.

**Table 7: Estimated Additional Cost of Providing Contraceptive & CAC Services to Adolescents in Rajasthan (2021–25)**

| Contraceptive Methods        | Total Cost (in INR Million) |              |               |               |               |               |
|------------------------------|-----------------------------|--------------|---------------|---------------|---------------|---------------|
|                              | 2021                        | 2022         | 2023          | 2024          | 2025          | 2021-25       |
| IUCD                         | 4.62                        | 9.80         | 15.58         | 22.02         | 26.84         | 78.87         |
| Pill                         | 1.18                        | 2.51         | 3.99          | 5.64          | 7.47          | 20.80         |
| Condom                       | 6.33                        | 13.42        | 21.34         | 30.16         | 39.96         | 111.22        |
| Injectables                  | 0.68                        | 1.44         | 2.30          | 3.25          | 4.30          | 11.97         |
| <b>TOTAL</b>                 | <b>12.82</b>                | <b>27.18</b> | <b>43.21</b>  | <b>61.07</b>  | <b>78.58</b>  | <b>222.86</b> |
| CAC Services                 | 17.58                       | 37.26        | 59.24         | 83.73         | 110.94        | 308.74        |
| <b>Grand Total</b>           | <b>30.39</b>                | <b>64.44</b> | <b>102.45</b> | <b>144.80</b> | <b>189.52</b> | <b>531.61</b> |
| Discount @ 10%               | 1                           | 0.909        | 0.826         | 0.751         | 0.683         |               |
| <b>Total Discounted Cost</b> | <b>30.39</b>                | <b>58.58</b> | <b>84.67</b>  | <b>108.79</b> | <b>129.45</b> | <b>411.88</b> |

### 5.6 Comparison of study findings with global evidence on benefit-costs

Global evidence indicates that every dollar spent on contraceptive services beyond the prevailing levels could reduce the cost of pregnancy-related and new-born care by three dollars<sup>33</sup>. The returns are slightly higher among adolescents, especially in LMICs, where every dollar spent on contraceptive services for adolescents beyond the existing levels, could save USD 3.70 in maternal, newborn and abortion care because contraception reduces the number of unintended pregnancies<sup>34</sup>. These benefit-cost estimates are closer to the estimates for Rajasthan (about USD 3 saved per dollar spent). The returns could be higher if factors that impact contraceptive behaviour were addressed – for instance, if the discontinuation rate of contraceptives is reduced from its exceedingly high level of 43 percent. Nevertheless, investment in meeting adolescents’ need for modern contraceptives and comprehensive abortion care services is expected to yield at least a 300 percent return, implying a very high value for money from such investments.

32. The CDDEP study results used here were collated from an informal source. The study is yet to be completed and hence, no official published source of CDDEP could be used. However, the set of unit costs of FP contraceptives used in this study for Rajasthan is close to similar results from an exercise done in UP by Population Foundation of India.

33. Sully, E., et al. (2020). Adding It Up: Investing in Sexual and Reproductive Health 2019, New York: Guttmacher Institute.

34. Fact sheet: Adding It Up: Investing in Sexual and Reproductive Health 2019, New York: Guttmacher Institute. (2020).

## 5.7 Savings from Scaling up Nutrition Services (WIFS)

Globally, the Weekly Iron and Folic Acid Supplement (WIFS) scheme is one of the core primary interventions for preventing anaemia and is estimated to result in 27 percent reduction of anaemia among non-pregnant women<sup>35</sup>. Regular iron supplements to adolescents is especially critical in Rajasthan, where one in two girls (49.1 percent) and one in four boys (22.1 percent) in the 15–19 age group were found to be suffering from some level of anaemia (mild, moderate or severe)<sup>36</sup>.

Against this context, the study attempted to assess the probable outcome of WIFS on the health and lives of the adolescents in Rajasthan. The first step towards this was to estimate the likely number of adolescents currently being

covered by the intervention and the 'gap' in coverage. For in-school students, data on enrolment in the Upper Primary, Secondary and Higher Secondary<sup>37</sup> was collected from the official website of the Department of School Education and Literacy, Government of India<sup>38</sup>.

The total enrolment in the three levels of schooling in Rajasthan was around 8.4 million in 2018–2019 (Table 8). About 62 percent of girls and 56 percent of boys were enrolled in government schools<sup>39</sup> and they constituted the study group for in-school students. The coverage of in-school adolescents was estimated to be around 0.45 million<sup>40</sup>, which accounts for about 10 percent of the target population.

**Table 8: Estimated Coverage of WIFS in Rajasthan (2019–2020)**

|  | Girls            | Boys             | Total            |
|--|------------------|------------------|------------------|
| a) Number of students enrolled in Upper Primary, Secondary and Higher Secondary <sup>1</sup> | 37,49,511        | 46,23,246        | 83,72,757        |
| b) % enrolled in govt schools <sup>2</sup>   | 62%              | 56%              | 59%              |
| <b>c) Total estimated enrolment in govt schools</b>  | <b>23,24,697</b> | <b>25,89,018</b> | <b>49,13,715</b> |
| d) % of total in-school who are covered by WIFS <sup>3</sup>                                 | 9.60%            | 8.80%            | 9.20%            |
| e) Estimated in-school number covered [c × d]  | 2,23,171         | 2,27,834         | 4,51,004         |
| f) Estimated out-of-school adolescents (10–19 years) <sup>4</sup>                            | 34,47,489        |                  |                  |
| g) % of out-of-school adolescents covered by WIFS <sup>3</sup>                               | 25%              |                  |                  |
| h) Estimated out-of-school number covered by WIFS [f × g]                                    | 8,61,872         |                  |                  |
| <b>i) Total coverage (number of adolescents)</b>   | <b>10,85,043</b> | <b>2,27,834</b>  | <b>13,12,877</b> |

1. <http://dashboard.udiseplus.gov.in/>

2. <http://www.pratham.org/wp-content/uploads/2019/06/ASER-2018-1.pdf>

3. <https://anemiamukt Bharat.info/view-your-data>

4. Total estimated 10–19 year old girl students enrolled subtracted from total number of girl adolescents (current)

35. World Health Organisation (2018). Weekly iron and folic acid supplementation as an anaemia-prevention strategy in women and adolescent girls: lessons learnt from implementation of programmes among nonpregnant women of reproductive age. (WHO/NMH/NHD/18.8).

36. NFHS-4

37. The school system in India has four levels: lower primary (age 6 to 10), upper primary (11 and 12), high (13 to 15) and higher secondary (17 and 18). Hence, the students currently enrolled in the last three levels roughly correspond to the WIFS target group.

38. <http://dashboard.udiseplus.gov.in/>

39. This is based on estimation of Pratham's Annual Report (2018, p-191). However, the report presents estimated percentage of girls and boys going to government schools in rural areas only. Also, it presents relevant estimates for only two age groups: 11–14 and 15–16. In this study, an average of the percentages in these two groups has been taken as a proxy for actual estimates. See <http://www.pratham.org/wp-content/uploads/2019/06/ASER-2018-1.pdf>

40. <https://anemiamukt Bharat.info/>



The number of out-of-school girls (10–19 years) was not directly available from any source. However, it could be roughly estimated as the difference between the total number of adolescent girls and the girls enrolled in the last three levels of the school system. Multiplying by the proportion of WIFS coverage for out-of-school girls (25 percent)<sup>41</sup> obtained from the Poshan Abhiyaan state-specific indicators, the coverage of out-of-school adolescents was estimated to be 0.86 million. The total coverage was obtained by adding up both the target groups.

As observed in Table 9, in order to achieve a 'minimum desirable' level of coverage of at least 50 percent of in-school and out-of-school adolescents, the state will need to **increase its reach from the existing level of 9.2 percent to 25 percent**. While there is no doubt that the reach of WIFS has to be increased, it is equally important to examine the economic, health and social reasons for expanding this provision. This will help the state to prioritise this intervention and mobilise additional resources for expanding coverage.

The ASRH study also estimated the number of additional users to be covered under the WIFS scheme in order to reach 50 percent of adolescents in the immediate future. Table 9 indicates that the scheme must be scaled up from its current coverage of 13,12,877 adolescents to 41,80,602 adolescents; an increase of about 35 percent.

**Table 9: Estimated 'Additional' Users of WIFS in Rajasthan (to reach 50 percent utilization)**

|   | Girls            | Boys             | Total            |
|---|------------------|------------------|------------------|
| Number of adolescents covered by WIFS in 2019–2020          | 10,85,043        | 2,27,834         | 13,12,877        |
| Estimated additional users of WIFS                          | 18,01,050        | 10,66,675        | 28,67,725        |
| <b>Total number of adolescents to be covered under WIFS</b> | <b>28,86,093</b> | <b>12,94,509</b> | <b>41,80,602</b> |

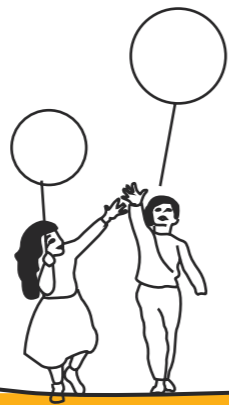
Given the lack of primary research data, this study drew upon available evidence from the literature on costs and benefits of WIFS or similar interventions to reduce prevalence of anaemia. The benefit-cost ratio of a proposed intervention similar to WIFS in Rajasthan, presented by a recent study by IIMR<sup>42</sup>, was estimated to be 9:1 (at 5 percent discount rate). In other words, a rupee invested on this intervention would return nine rupees in health and economic benefits. On the other hand, the CBR estimates of a similar programme from a study<sup>43</sup> undertaken in Bangladesh was 32:1 for in-school adolescents and 13.6:1 for out-of-school adolescents, implying that the return to investment in both cases is huge. Nevertheless, the impact on in-school adolescents is far greater than out-of-school adolescents, primarily because of a low compliance rate experienced in the latter. Another study conducted in Vietnam, found a very high cost-effectiveness of WIFS intervention in reducing anaemia (USD 4.24 per anaemia case prevented per year)<sup>44</sup>.

41. <https://anemiamukt Bharat.info/view-your-data>

42. Hossain M. M., (2018). Cost-Benefit Analysis of Adolescents Health Interventions for Rajasthan. Working Paper (<https://www.researchgate.net/publication/326533675>)

43. Taking Collective Action to Improve Adolescent Nutrition in Bangladesh: Investing in Cost-effective Interventions. Unpublished report, prepared by BRAC James P Grant School of Public Health, Dhaka, Bangladesh.

44. Casey, G., et al. (2011). Weekly Iron-Folic Acid Supplementation with Regular De-worming Is Cost-Effective in Preventing Anemia in Women of Reproductive Age in Vietnam. PLoS ONE 6(9).



The return may also be assessed from scientific data on cost and effects of WIFS. The annual cost per beneficiary for WIFS was estimated to be around USD 0.32–0.40, in which the cost of supplementation (i.e., IFA and Albendazole) is USD 0.16<sup>45,46</sup>. Hence, the total annual cost would be about USD 900,000–1.1 million (or INR 66–80 million) to meet the needs of the additional users estimated in Table 9.

However, this cost should be juxtaposed with the health gains and economic losses averted due to reduced iron deficiency anaemia. Studies in the context of India and other LMIC countries have shown the effectiveness of WIFS in reducing anaemia prevalence among adolescents. A study undertaken in the state of Uttar Pradesh found that the overall prevalence of anaemia among adolescents reduced from 73.3 percent to 25.4 percent over a period of four years after the intervention<sup>47</sup>. Reduced prevalence of anaemia not only contributes to reduction in IMR and MMR but also: (i) reduces cost of care for neonates, infants and children<sup>48</sup>; (ii) generates productivity gains through improved physical capacity and increased cognitive ability<sup>49</sup>; (iii) reduces costs of treatment for chronic diseases<sup>50</sup>; and, (iv) generates inter-generational benefits through improved health<sup>51</sup>. The combined impact of all these gains would be substantial.

Against these health gains, global evidence also reveals that the median per capita annual physical productivity loss attributable to anaemia can be around USD 0.83–4.81<sup>52</sup>.

In other words, a per capita investment of INR 1 in WIFS would save almost INR 2–20 in terms of productivity loss averted. Hence, an annual investment of INR 66–80 million (INR 6–8 crore)—the amount required to cover the ‘additional’ users and reach the 50 percent minimum desirable coverage levels—would bring at least INR 132 million (INR 13.2 crore) in returns.

This return will be considerably higher if healthcare cost savings are also considered. These findings make a strong case for increasing the coverage to at least 50 percent over the next two years on a priority basis.

It is, however, important to note that the effectiveness of WIFS will be seriously constrained if it is not complemented with other interventions such as increasing economic opportunities for women, reducing the number of school dropouts, improving nutritional status through a balanced and nutritious diet etc. For instance, the productivity gains that can be maximised from reduced anaemia levels in the form of improved physical capacity and increased cognitive ability, would yield limited economic gains if adolescents (especially girls) are unable to find appropriate jobs.

45. World Health Organisation (2011). Weekly iron and folic acid supplementation programmes for women of reproductive age: An analysis of best programme practices.

46. The material cost can be reconfirmed also from the available data on unit cost. The state government purchases IFA and Albendazole respectively at INR 0.19 and INR 1.22 per unit. A beneficiary would require 52 IFAs and 2 Albendazole implying that the cost per beneficiary is INR12.08 or USD0.16.

47. Vir, S. C., et. al. (2008). Weekly iron and folic acid supplementation with counseling reduces anemia in adolescent girls: A large-scale effectiveness study in Uttar Pradesh, India. Food and Nutrition Bulletin, Vol 29, No.3.

48. Report of the Working Group on Nutrition for the 12th Five Year Plan (2012–2017), Ministry of Women & Child Development, Government of India.

49. World Health Organisation (2011). Prevention of Iron Deficiency Anaemia in Adolescents: Role of Weekly Iron and Folic Acid Supplementation SEA-CAH-02, Regional Office for South East Asia.

50. Chandra-Mouli, V., Greifinger, R., Nwosu, A. et. al. (2013). Invest in adolescents and young people: it pays. Reproductive Health Vol.10, No.51 <https://doi.org/10.1186/1742-4755-10-51>

51. World Health Organisation (2014). World Health Assembly Global Nutrition Targets 2025: Anaemia Policy Brief.

52. Alderman, H. & Horton, S. (2007). The economics of addressing nutritional anemia. In: Kraemer K, Zimmermann MB, eds. Nutritional anemia. 19–35. Basel: SIGHT AND LIFE Press.



Empowering adolescents through edutainment

## 5.8 Benefits from Scaling Up Menstrual Health Services

Menstrual hygiene is of considerable importance as it impacts the health of adolescent girls in terms of increased vulnerability to reproductive tract infections, secondary infertility and vaginal discharge. Prevailing negative attitudes towards menstruation also constrain the lives of millions of girls. Many schools across rural Rajasthan do not have functional toilets or running water, thereby restricting girls from attending schools during their menstrual cycle<sup>53</sup>.

There is relatively less evidence to establish the effectiveness of menstrual hygiene management interventions, especially on the educational and psychosocial aspects. A study conducted in rural Kenya presents some insight on the costs and benefits which may be used as suggestive inputs in the context of Rajasthan<sup>54</sup>. According to this study, the unit programme cost for sanitary pad intervention was USD 22.42 (per beneficiary annually), which includes cost of pads, transportation, disposal, training, comprehensive education to girls about menstrual management and other administrative costs. The study also reports that the economic benefit as a result of provision of sanitary pads for a year – in terms of productivity gained throughout the

life following the human capital approach was estimated to be USD 92 per person (in net present value). Therefore, the benefit-cost ratio is 1:4. **This indicates that investing one rupee in this intervention would return four rupees in terms of averted loss in educational achievement and consequent gain in productivity.**

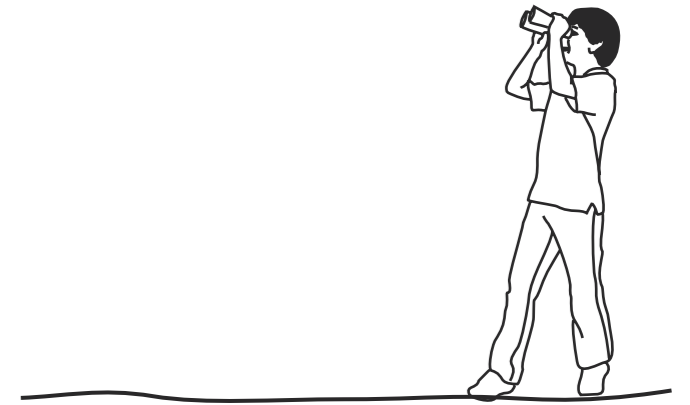
The estimates presented above are suggestive. A similar intervention in Rajasthan is likely to differ and may result in lesser costs than the existing global evidence suggests since Rajasthan already has an established network of health facilities and distribution systems. It is also important to note that economic benefits often conceal the larger social outcomes from such interventions. For instance, a study among tribal adolescent girls in rural Gujarat observed that the quality of life of adolescents from poor households can improve if they have adequate exposure to interventions that help them deal with menstruation issues and also provide access to related services and products<sup>55</sup>. Such evidence clearly highlights the need for more primary studies to generate relevant metrics on the impact of such interventions.

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# 6. Recommended Policy Actions




The findings of this study clearly indicate that investing in adolescent sexual and reproductive healthcare services leads to significant health and economic gains. Making contraceptives available to meet the demand for family planning services, especially spacing methods, as well as providing comprehensive abortion care services at public health facilities can result in savings to healthcare. If the state makes adequate investments in adolescent-specific SRH interventions over the next five years (2021–2025), it can avert a substantial number of infant deaths, maternal deaths, unintended pregnancies, unwanted births and unsafe abortions. Scaling up WIFS and MHS can avert productivity loss, result in substantial gains in education and contribute to economic output.

The study calls for the following key actions to strengthen and scale-up adolescent-specific SRH services in the state:



**Increase investments for adolescent-specific SRH services including contraceptives, CAC, nutrition and menstrual hygiene**

There is an immediate need to address the unmet need for contraception, comprehensive abortion care, nutrition and menstrual hygiene services for adolescents. Allocating greater resources to meet their requirements and expanding access to these services will lead to savings in healthcare by averting unwanted pregnancies, births and unsafe abortions. To scale-up these services across the state over the next five years, additional resources need to be identified and allocated and a medium-term expenditure plan should be developed.



**Institutionalise and strengthen adolescent-specific data management systems**

There is a need to track and monitor the services accessed by adolescents in order to understand their issues better and in turn strengthen programme implementation. Disaggregated data on access to clinical services from the Ujala clinics for adolescents is crucial. This data should be made available at the district level and consolidated at the state level as it will guide planning and delivery of services at these dedicated facilities. Institutionalising data management systems and strengthening the existing systems will help address gaps, improve monitoring, and facilitate better decision-making and optimal utilisation of resources available specifically for adolescents.




**Strengthen implementation and scale-up of adolescent friendly health services**

Information on contraceptives and messages relating to adolescents' SRH well-being, nutritional requirements and service availability are extremely important to create awareness and generate demand for adolescent friendly health services. Best practices from social and behaviour change communication initiatives and convergence models at the state and district level need to be customised, piloted, evaluated and scaled up to enhance use of these services. Private sector engagement is a critical initiative that needs to be explored by the government for providing adolescent-specific health services in areas where the reach of the public sector is limited.




**Adopt a multi-faceted, innovative approach to reach out to adolescents**

Scaling up adolescent-specific SRH services requires a multi-sectoral approach in order to expand its reach and coverage across the state. While services for adolescents have taken a backseat as a result of COVID-19, there is a need to identify innovative solutions-driven approaches that will reach adolescents with the right kind of messages on sexual and reproductive health and the availability of counselling and clinical services close to their doorsteps. Deeper community engagement, partnerships with different providers and sensitisation of providers as well as communities can help facilitate adolescents' access to SRH services in these challenging times.



**Ensure quality of care and standards in provision of SRH services**

Adolescent-specific health interventions in the state need to be sensitive to adolescents' SRH requirements. The services provided should be of high quality, non-discriminatory, age-appropriate and free from provider stigma and bias. This will enable adolescents to overcome their fear and insecurity in approaching healthcare providers and facilities, and thereby result in an increased uptake of services.



**Strengthen and scale-up nutrition supplementation programmes**

The Supplementary Nutrition Programme under the Mission Poshan 2.0 and the Mid-Day Meal Scheme in schools needs to be strengthened through intensified strategies to improve nutritional outcomes in adolescents. There is a need to improve the identification, measurement and understanding of anaemia among adolescents and to scale-up coverage for prevention and treatment activities. Community mobilisation, especially through adolescent-specific platforms and social marketing, can be helpful in raising awareness among adolescents and can encourage them to access the IFA supplements. This will help strengthen nutritional content, delivery, outreach and outcomes.

# Annexure 1

## Estimation of annual unsafe abortions by 15–19 year old women in Rajasthan

| COMMENTS / SOURCE   |           |   |
|---|-----------|---|
| a) Annual likely abortion cases (15–49 years)                           | 4,41,000  | PMA2020 Abortion Survey Results, 2018   |
| b) Annual incidence among 15–19 years (per 1,000)                       | 13        | PMA2020 Abortion Survey Results, 2018   |
| c) Adolescent girls (15–19) population in 2020                          | 36,56,000 | Projected Population by GoI   |
| d) Estimated annual abortions by 15–19 year girls                       | 47,528    | c × b   |
| e) % of them adopting 'safe' method & provider                          | 40.0%     | Bell, S O et al (2019), PLoS ONE 14(11)   |
| f) Estimated 'safe' abortions   | 19,011    | d × e   |
| g) Estimated annual 'likely unsafe' abortion by 15–19 year girls (2020) | 28,517    | d-f   |
| h) Average assumed annual increase in CAC users until 2025 (5 years)    | 15,000    | Assumed that roughly 50% of the 'likely unsafe' abortions will be covered by CAC services |

Data Source: PMA 2020

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20. Banswara, Barmer, Bundi, Dholpur, Dungarpur, Jaisalmer, Jalore, Karauli, Rajsamand, Udaipur.
21. Each member of the target groups receives free elemental Iron and Folic Acid once in a week, 52 weeks a year, through an institutional mechanism (i.e., through schools and anganwadi centres). This is supplemented with a biannual de-worming (by Albendazole), information and counselling and screening of target groups for moderate/severe anaemia and referral.
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