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Original Research Article

Impact paper on maternal, child health and nutrition in Madhya Pradesh

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ABSTRACT

Background: Improving maternal, newborn, child health and nutrition (MNCHN) outcomes has been a sustained priority for the Government of Madhya Pradesh, particularly in high-burden districts, and the state has implemented various flagship schemes and programmes to strengthen public health systems and service delivery. As part of this effort, the Government launched the Akshita Programme with The Antara Foundation in 2019 to strengthen service delivery across nine districts. This study assessed the Programme's contribution to select MNCHN outcomes.
Methods: This longitudinal descriptive analysis compared trends across 38 intervention and 25 comparison blocks using Health Management Information System (HMIS) and programme data, analysed through a program-year (PY) framework (PY-1 to PY+4). Provider competency was assessed in 818 sub-health centres (Auxiliary Nurse Midwives and Community Health Officers) and 111 health facilities (staff nurses).
Results: Intervention areas demonstrated greater reductions in stillbirth, very early neonatal mortality and late neonatal mortality than comparison areas. Early antenatal registration rose from 65% to 90%, four antenatal care check-ups from 73% to 101%, intrapartum complication identification from 23% to 53% and home-based postnatal care coverage from 41% to 90%. Sub-health centres with strong technical knowledge scores increased from 2% to 25% while 97% of assessed facilities showed gains in staff nurse knowledge and skills. Low birthweight prevalence showed no meaningful improvement.
Conclusions: Strengthening frontline health systems through worker coordination, capacity building and nurse mentoring was associated with improved maternal and newborn outcomes. Persistent low birthweight underscores the need for targeted maternal nutrition interventions and stronger health–nutrition convergence.

Keywords: Maternal health, Newborn health, Health systems strengthening, Nurse mentoring, Government health programmes, Madhya Pradesh

INTRODUCTION

Improving maternal, newborn, child health and nutrition (MNCHN) remains a key public health priority for the Government of Madhya Pradesh. Over the past two decades, the state has made substantial progress in improving maternal and child health outcomes. The maternal mortality ratio (MMR) declined from 335 to 135 per 100,000 live births, while the infant mortality rate reduced from 67 to 35 per 1,000 live births.[1-4] However,

progress has been slower than the national trend in Madhya Pradesh, and MMR remains higher than the national average (135 vs. 87).[2] Persistent challenges include inadequate antenatal care (ANC), limited emergency obstetric and caesarean care capacity, shortages of specialist health personnel and marked rural-urban and intra-state disparities, with the poorest outcomes concentrated in predominantly tribal districts.

In response, the Government of Madhya Pradesh has implemented a range of interventions to strengthen MNCHN across the continuum of care. System-level initiatives include digital platforms such as the Suman Sakhi Chatbot, e-Shishu and Auxiliary Nurse Midwife Online (ANMOL) 2.0 and universal antenatal registration and check-ups under the Sanjeevan Mission Roadmap. Facility-based care has been strengthened through Sick Newborn Care Units, Newborn Stabilization Units, Kangaroo Mother Care Units and Comprehensive Emergency Obstetric and Newborn Care services. Community-based service delivery has also been strengthened through Home-Based Postnatal Care (HBPNC) and Home-Based Care for Young Children (HBYC), enabling early identification, counselling and referral of high-risk mothers and children by Accredited Social Health Activists (ASHAs), with continuity of care supported through digital tracking using ANMOL.

Nutrition and child health are further supported through the Mothers' Absolute Affection programme, POSHAN Abhiyaan, Anaemia Mukt Bharat, Rashtriya Bal Swasthya Karyakram and Nutrition Rehabilitation Centres. Implementation is monitored through the HMIS, maternal and child death review processes, Village Health, Sanitation and Nutrition Day (VHSND) monitoring, and HBPNC/HBYC checklists. Routine service delivery is further complemented by statewide campaigns including DASTAK Abhiyaan, Social Awareness and Action to Neutralise Pneumonia Successfully (SAANS) Abhiyaan, National Newborn Week and World Breastfeeding Week, which strengthen community outreach, early identification, health promotion and referral for mothers and children across the state.

Despite these investments, ensuring consistent, high-quality implementation of government programmes remains a challenge, particularly in geographically remote and resource-constrained settings. To strengthen implementation of these efforts, the Government of Madhya Pradesh, through the National Health Mission, launched the Akshita Programme in partnership with The Antara Foundation in 2019. Implemented jointly by the Public Health and Medical Education Department and the Department of Women and Child Development, the programme aimed to strengthen the capacity of frontline workers, supervisory cadres and labour room staff to improve the identification and management of high-risk mothers and children during the first 1,000 days of life. The programme was implemented across 38 blocks in nine districts, covering approximately 5,700 villages and 112 public health facilities.

While Madhya Pradesh has implemented a wide range of MNCHN initiatives, there is limited published evidence on how implementation support partnerships contribute to strengthening government health systems at scale. This study examined the contribution of the Akshita Programme to strengthening government health systems in Madhya Pradesh. Using routinely collected government programme and health system data, it assessed changes in service readiness, supportive supervision and workforce capacity, while documenting implementation lessons for strengthening and scaling government-led MNCHN programmes in Madhya Pradesh and comparable settings.

METHODS

Study design

This study assessed the contribution of the Akshita Programme to improving MNCHN outcomes through health system strengthening in Madhya Pradesh, India by examining temporal trends in health system and MNCHN indicators across intervention and comparison blocks. As the intervention areas were purposively selected and programme allocation was not randomised, the study was not designed to establish causal attribution; findings should instead be interpreted as evidence of programme contribution based on plausible associations between programme implementation and observed changes in outcomes.

Study setting and intervention

The study was conducted within the public health system of Madhya Pradesh. In 2019, the Government of Madhya Pradesh, through the National Health Mission, launched the Akshita Programme in partnership with The Antara Foundation, under a tripartite Memorandum of Understanding involving the Public Health and Medical Education Department and the Department of Women and Child Development. The programme was designed to strengthen implementation of existing government MNCHN programmes during the first 1,000 days of life, defined as the period from conception through the child's second year of life.

The programme included the following intervention components. First, coordination among ASHAs, Anganwadi Workers (AWWs) and Auxiliary Nurse Midwives (ANMs) was strengthened through the AAA Platform, a monthly mechanism for joint planning, risk identification, service delivery and follow-up of maternal and child health cases. Second, continuous capacity building was provided for frontline workers and supervisory cadres- including ANMs, Community Health Officers (CHOs), ASHAs, AWWs, ASHA supervisors and Lady Supervisors-through classroom training,

cascading training models, operational handholding and regular competency assessment across 14 MNCHN themes. Third, Nurse Mentoring and Facility Enhancement (NMFE) interventions strengthened labour room practices through clinical mentoring, simulation-based learning and facility quality improvement. Fourth, VHSNDs and HBPNC visits were strengthened through structured observation, supportive supervision and follow-up support to improve counselling, screening and referral of high-risk mothers and children. These intervention components were implemented within existing government service delivery platforms and complemented ongoing state initiatives, including HBPNC, HBYC, ANMOL, the DASTAK Abhiyaan and the SAANS Abhiyaan.

The programme was implemented across 38 blocks in nine districts (Barwani, Betul, Chhindwara, Damoh, Gwalior, Khargone, Morena, Pandhurna, and Seoni), covering approximately 5,700 villages and 112 public health facilities, including community health centres, primary health centres as well as the sub-health centres (SHCs).

Selection of intervention and comparison areas

Intervention districts were identified using MNCHN indicators from HMIS and National Family Health Survey (NFHS).[5] Intervention blocks were subsequently selected using HMIS performance data, together with recommendations from district administration and key district stakeholders. Selection criteria included historical underperformance on MNCHN indicators, operational feasibility, programme readiness, low vacancy levels among frontline workers, a focus on rural and tribal geographies, and the capacity of selected blocks to collectively cover a substantial proportion of the district population.

The analysis included 38 intervention blocks and 25 comparison blocks within the same nine districts. Comparison blocks were selected for demographic and geographic similarity to intervention blocks, based on population size, rural–urban composition, and baseline health indicators. However, matching was not statistically controlled and allocation was not randomised.

Data sources

The analysis covered fiscal years 2020-2024 (April 2020 to March 2024). The primary data source was the Government of India's HMIS, which provided routinely reported maternal, newborn and child health indicators across intervention and comparison geographies. NFHS data informed selection of intervention districts.

NFHS-4 was used for the selection of the three mature intervention districts, namely Chhindwara, Seoni and Barwani, while NFHS-5 data were used for the selection of the remaining intervention districts.

HMIS data were supplemented with programme monitoring datasets jointly developed by the Government of Madhya Pradesh and the Akshita Programme to assess implementation quality, service quality and intermediate programme outcomes. These included knowledge assessments of ANMs and CHOs across 818 SHCs, competency assessments of staff nurses across 111 health facilities, labour room register data collected through the NMFE intervention and other routine programme monitoring tools. Programme monitoring datasets were mapped to HMIS indicators wherever feasible to ensure consistency across data sources and standardised data cleaning and validation procedures were applied in accordance with programme quality assurance protocols before analysis.

As programme implementation was phased across districts, analyses were aligned using a programme year (PY) framework. PY-1 represented the baseline period prior to implementation and PY+1 through PY+4 represented successive implementation years, enabling comparison by programme maturity rather than calendar year.

Outcome measures

Impact outcomes comprised stillbirth rate, very early neonatal mortality rate (VENMR), late neonatal mortality rate (LNMR), and low birthweight prevalence. VENMR was defined as deaths occurring within 24 hours of birth and was reported per 10,000 live births because of the low frequency of events recorded in HMIS. Both the VENMR and the absolute number of very early neonatal deaths were examined. LNMR was defined as deaths occurring between 24 hours and 28 days after birth and was calculated per 1,000 live births by subtracting deaths within the first 24 hours from total neonatal deaths reported in HMIS. Records yielding negative LNMR values because of data inconsistencies (0.98% of observations) were excluded from the analysis. Low birthweight was defined as a birth weight below 2,500 g and expressed as a proportion of total live births.

Study outcomes comprised impact outcomes and health system outcomes, mapped to the antepartum, intrapartum, and postpartum phases of the maternal and newborn continuum of care (Table 1). Antepartum outcomes included first-trimester registration, coverage of at least four ANC visits, and technical knowledge of frontline health workers. Knowledge was assessed through structured tests administered to ANMs and CHOs across 818 SHCs. Facility-level scores were calculated by averaging ANM and CHO scores within each SHC and categorised into four performance bands (<25%, 25-50%, 50-75%, and 75-100%). Intrapartum outcomes included identification and management of obstetric complications and staff nurse competency. Competency was assessed using composite scores derived from equally weighted knowledge and practical skill assessments across 111 health facilities. Postpartum outcomes included coverage

of six home-based postnatal care (HBPNC) visits following institutional delivery.

Statistical analysis

Descriptive analyses examined temporal trends in impact and health system indicators across intervention and comparison geographies, summarised using proportions, rates and other descriptive measures. HMIS data were used to assess impact outcomes and service coverage; programme monitoring datasets were used to assess changes in the provider knowledge, competency as well as the management of the maternal complications over time.

Given this, no statistical methods for causal inference were applied; findings are presented as descriptive evidence of programme contribution.

Data were analysed using MS excel for descriptive and trend analysis. Findings were summarized using descriptive statistics and comparisons of observed trends across study groups and time points. As analysis was not designed as a randomized or quasi-experimental study, no statistical methods for causal inference were applied. Findings are therefore presented as descriptive evidence of programme contribution rather than as estimates of causal programme effects.

Ethical considerations

The study analysed routinely collected government programme and administrative data, obtained with permission from the Government of Madhya Pradesh. As the analysis used anonymised, aggregate data with no personally identifiable information, separate institutional ethics committee approval was not sought.

Table 1: Interventions and study outcomes mapped to the phase of maternal and newborn care.

Interventions	Antepartum (pregnancy)	Intrapartum (labour and delivery)	Postpartum (after birth)
	Capacity building; AAA Platform; HBPNC visits	**Nurse mentoring and facility enhancement**	**Capacity building; AAA Platform; HBPNC visits**
Impact outcomes	-	Stillbirth rate; VENMR	LNMR; low birthweight prevalence
Health system outcomes	First-trimester registration; at least four ANC visits; knowledge scores of health professionals	Identification and management of intrapartum complications; knowledge and skills of staff nurses	Coverage of six home-based postnatal care visits

*Abbreviations: AAA, ASHA–ANM–AWW coordination platform (ASHA, Accredited Social Health Activist; ANM, Auxiliary Nurse Midwife; AWW, Anganwadi Worker); ANC, antenatal care; HBPNC: Home-Based Postnatal Care; LNMR, late neonatal mortality rate; VENMR, very early neonatal mortality rate.

RESULTS

Overview

The analysis compared trends in maternal, newborn, and health system indicators between intervention and comparison geographies across programme year (PY)-1 to PY+4. Results are presented under two domains: (i) impact outcomes and (ii) health system outcomes across the antepartum, intrapartum, and postpartum continuum of care.

Impact outcomes

Stillbirth rate

At baseline (PY-1), the stillbirth rate was 13.3 per 1,000 reported live births in intervention facilities and 11.0 in comparison facilities. By PY+4, the rate had declined to 10.4 in intervention facilities and 8.8 in comparison facilities, representing reductions of 2.9 and 2.1 per 1,000 reported live births, respectively (Figure 1A).

Very early neonatal mortality

VENMR at baseline (PY-1) was 9.6 per 10,000 reported live births in intervention facilities and 4.0 in comparison facilities. By PY+4, VENMR had declined to 2.2 in intervention facilities, while increasing to 5.0 in comparison facilities. This represents a reduction of 7.4 per 10,000 reported live births in intervention facilities compared with an increase of 1.0 per 10,000 in comparison facilities (Figure 1B).

Given the low number of very early neonatal deaths, absolute deaths were also examined alongside the mortality rate.

Absolute deaths in intervention facilities declined from 52 at PY-1to 3 at PY+4, while deaths in comparison facilities declined from 11 to 6 (Figure 1C). Across the full study period, only 159 very early neonatal deaths were recorded across all facilities combined. This relatively small number limits the strength of conclusions that can be drawn from these trends.

Late neonatal mortality

At baseline (PY-1), the late neonatal mortality rate (LNMR) was 8.7 per 1,000 reported live births in intervention geographies and 6.7 in comparison geographies. By PY+4, LNMR had declined to 7.5 in intervention geographies, representing a reduction of 1.2 per 1,000 reported live births. In comparison geographies, LNMR increased to 9.9, representing an increase of 3.2 per 1,000 reported live births (Figure 1D). The reduction in intervention geographies corresponds to a 14% decline in LNMR over the study period.

Low birthweight prevalence

In intervention geographies, low birthweight (LBW) prevalence increased from PY-1 through PY+3, followed by a decline in PY+4. In comparison geographies, LBW prevalence showed an overall increase over the same period.

Thus, while intervention geographies recorded a decline in LBW prevalence in PY+4, the overall trend does not indicate a sustained reduction in LBW prevalence (Figure 2).

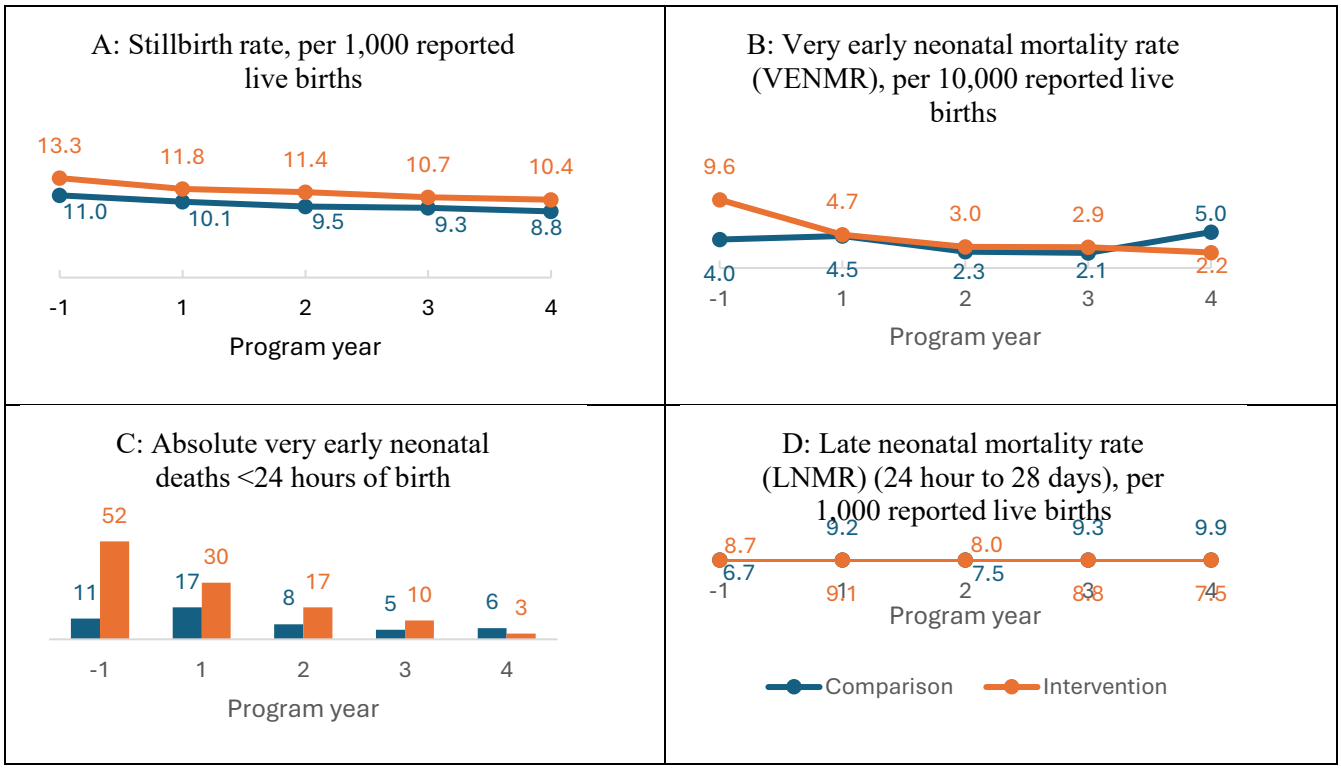


Figure 1 (A-D): Mortality outcomes in intervention and comparison areas, PY-1 to PY+4. (A) Stillbirth rate per 1,000 live births. (B) Very early neonatal mortality rate (deaths within 24 hours of birth) per 10,000 live births. (C) Absolute number of very early neonatal deaths (within 24 hours of birth). (D) Late neonatal mortality rate (deaths between 24 hours and 28 days) per 1,000 live births.

*Source: HMIS, Government of India.

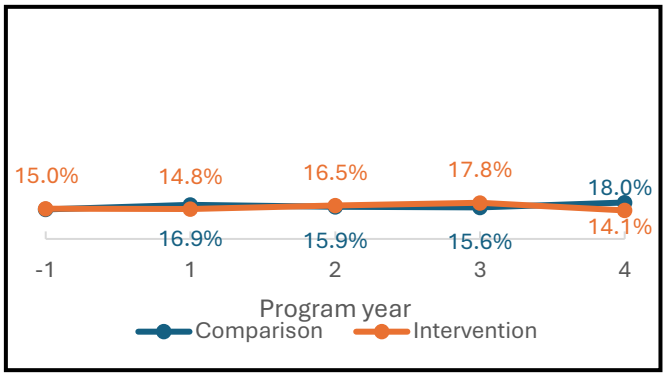


Figure 2: Prevalence of low birthweight (below 2,500 g) among live births in intervention and comparison geographies, PY-1 to PY+4. The y-axis is scaled to 0-10% to highlight small variations.

*Note: Y-axis is zoomed to 0-10% to highlight small variations. Source: HMIS, Government of India.

Health system outcomes

Antepartum: Coverage of antenatal services

The proportion of pregnant women registered during the first trimester increased from 65% to 90% in intervention geographies between PY-1 and PY+4, representing an increase of 25 percentage points. In comparison geographies, the proportion increased from 80% to 88%, an increase of 8 percentage points (Figure 3).

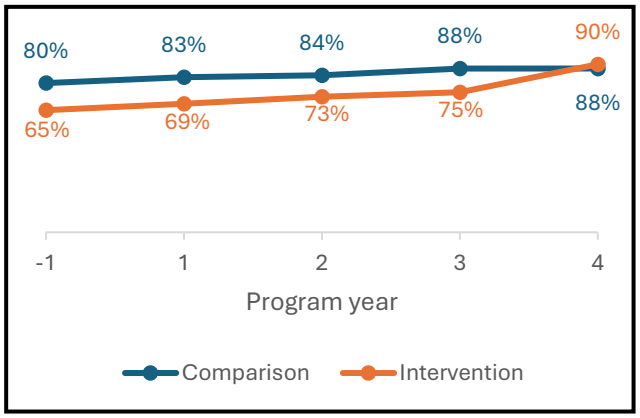


Figure 3: Percentage of pregnant women registered within the first trimester in intervention and comparison geographies, PY-1 to PY+4.
*Source: HMIS, Government of India.

Similarly, the proportion of women completing at least four ANC visits increased from 73% to 101% in intervention geographies, an increase of 28 percentage points. In comparison geographies, the proportion increased from 85% to 89%, an increase of 4 percentage points over the same period (Figure 4).

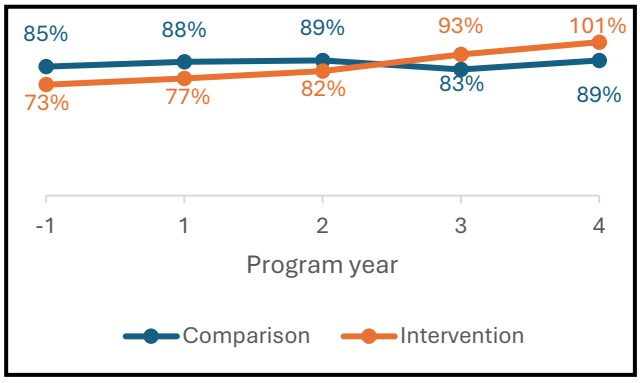


Figure 4: Percentage of pregnant women receiving at least four antenatal care visits in intervention and comparison geographies, PY-1 to PY+4.
*Source: HMIS, Government of India.

Antepartum: Knowledge of frontline health professionals

Among 818 sub-health centres, the distribution of technical knowledge scores improved between baseline and endline (Figure 5). The proportion of facilities scoring below 25% declined from 3% at baseline to 0% at endline, while the proportion scoring 75-100% increased from 2% to 25%. The proportion scoring 25-50% declined from 37% to 8%, while the proportion scoring 50-75% increased from 59% to 66%.

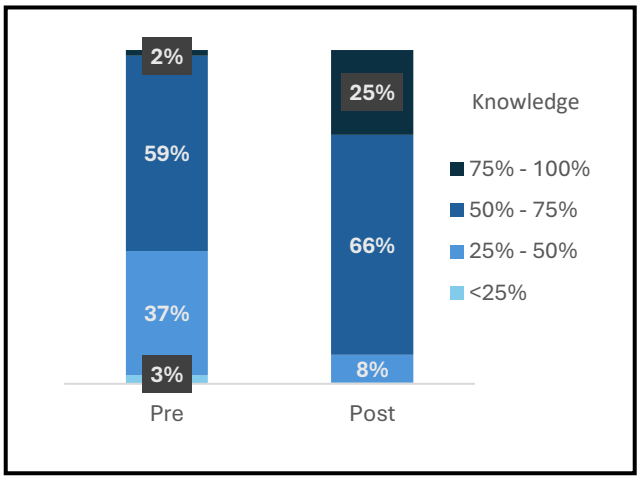


Figure 5: Distribution of sub-health centres across technical knowledge score bands (below 25%, 25-50%, 50-75% and 75-100%) at baseline and endline (n=818).
*Source: Akshita Programme Internal Monitoring Data.

Intrapartum: Identification of intrapartum complications

The proportion of institutional deliveries in which intrapartum complications were identified increased from 23% to 53% in intervention facilities between PY-1 and PY+4, representing an increase of 30 percentage points. In comparison facilities, the proportion increased from 31% to 37%, an increase of 6 percentage points over the same period (Figure 6).

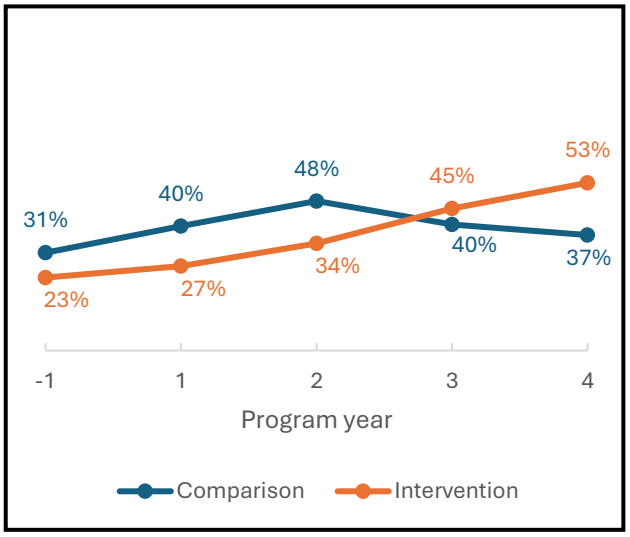


Figure 6: Intrapartum complications identified as a share of institutional deliveries in intervention and comparison facilities, PY-1 to PY+4.
*Source: HMIS, Government of India.

Intrapartum: Identification and management of maternal complications

Routine monitoring data from facilities implementing the NMFE intervention showed increases in both identification and management across most maternal complication types between PY+1 and PY+4 (Table 2). Identification increased for most complication types, including postpartum haemorrhage, pregnancy-induced hypertension, prolonged labour, antepartum haemorrhage, abortion, and other complications. Management also increased for most complication types, with the largest increases observed for malpresentation of lie, abortion, and other complications.

Table 2: Identification and management of maternal complications.

Maternal complication	% Identified		% Managed	
	PY-1	PY-4	PY-1	PY-4
Postpartum haemorrhage	1.0%	1.5%	99%	98%
Pregnancy-induced hypertension	2.5%	3.1%	90%	98%
Prolonged labour	2.0%	3.0%	75%	78%
Antepartum haemorrhage	0.6%	0.7%	86%	91%
Malpresentation of lie	1.6%	1.5%	69%	87%
Abortion	0.6%	0.8%	81%	98%
Other complications	9.7%	14.1%	65%	79%

*Source: Akshita Programme Internal Monitoring Data

Intrapartum: Knowledge and skills of staff nurses

Composite competency assessments conducted across 111 facilities showed that 97% of facilities recorded higher post-intervention scores than baseline (Figure 7).

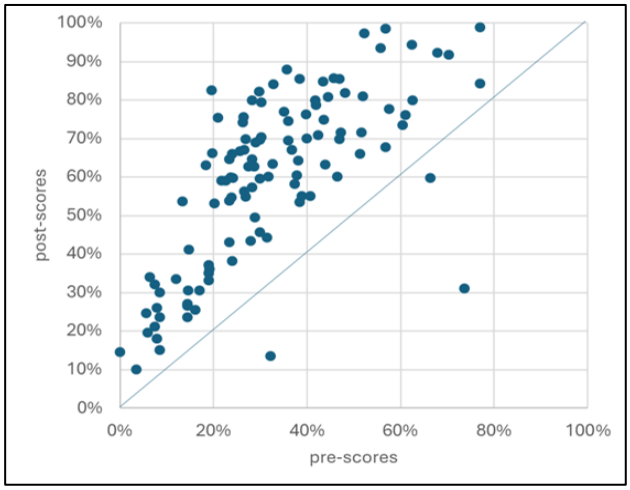


Figure 7: Distribution of pre- and post-intervention composite competency scores of staff nurses across 111 facilities. Points above the diagonal indicate facilities with post-intervention gains.

*Source: Akshita programme internal monitoring data.

Postpartum: Coverage of home-based postnatal care

Coverage of six HBPNC visits following institutional delivery increased from 41% to 90% in intervention geographies between PY-1 and PY+, representing an increase of 49 percentage points. In comparison geographies, coverage increased from 48% to 50%, an increase of 2 percentage points over the same period (Figure 8).

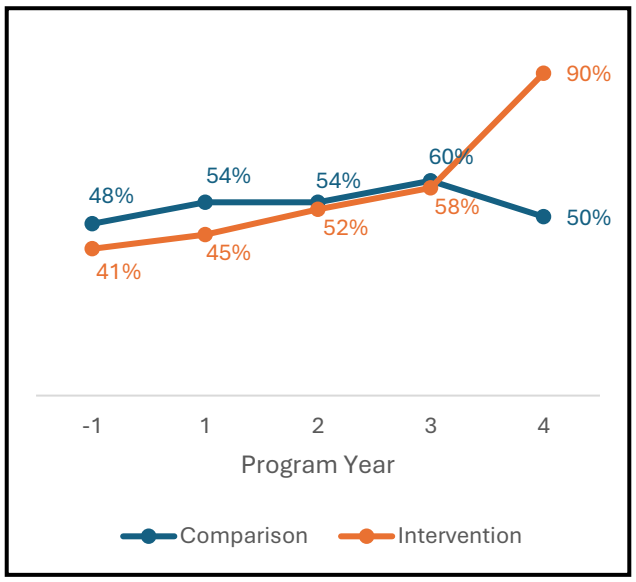


Figure 8: Coverage of six home-based postnatal care visits after institutional delivery in intervention and comparison geographies, PY-1 to PY+4.

*Source: HMIS, Government of India.

DISCUSSION

This study examined the contribution of the Akshita Programme to maternal and newborn health outcomes across intervention areas in Madhya Pradesh. The findings indicate improvements across several points of the continuum of care, alongside strengthening of provider capacity and service delivery.

Stillbirth declined more in intervention geographies than comparison geographies, consistent with evidence from other facility-based interventions in India that have reported improvements in stillbirth outcomes.[6] Very early

neonatal mortality also showed a notable decline. This is relevant given that a substantial proportion of neonatal deaths occur around the time of birth, with birth asphyxia and prematurity (or low birthweight) contributing to many deaths during the first week.[7] The concurrent improvements shown by the Akshita programme on provider competency and identification and management of intrapartum complications are consistent with the importance of timely care around birth to reduce preventable neonatal deaths. Although the relatively small number of very early neonatal deaths and the descriptive design do not allow a causal relationship to be established.

The decline in late neonatal mortality, in contrast to the increase in comparison geographies, further highlights the importance of care in the days following delivery. Existing evidence from India has shown similar results through structured home-based newborn care delivered through community workers.[8] In the Akshita Programme, improved coverage of home-based postnatal care and better training and handholding of AHSA workers may have strengthened opportunities for continued assessment, identification of danger signs and timely referral after discharge.

The study did not find improvements in low birthweight. Although prevalence declined in the final programme year, there was no sustained reduction over the study period. Evidence from other programmes in India has shown that interventions combining routine services with additional components focused on maternal nutrition, pregnancy weight gain and social and behaviour change can improve birthweight outcomes.[9] This suggests that routine MNCHN strengthening alone may not be sufficient to address low birthweight; more targeted nutrition interventions and stronger convergence between Health and Women and Child Development services, and a lifecycle approach to nutrition especially focused on adolescent girls may be additionally important for improvements in birthweight.[10]

Improvements in early antenatal registration and reported coverage of four or more ANC visits indicate strengthening of routine antenatal care over the programme period. These findings are consistent with evidence from India showing that strong engagement of community health workers with families is associated with greater utilisation of antenatal services.[11,12]

Within the Akshita Programme, the AAA Platform provided a mechanism for ASHAs, AWWs and ANMs to review data, identify high-risk women, coordinate follow-up and plan activities across the 1,000-day continuum. The experience suggests that sustained frontline coordination and accountability can support implementation of routine services through existing government platforms. At scale, this may require continued support for supervisory cadres, regular participation in AAA meetings, streamlined data collection during Village Health Sanitation and Nutrition Days (VHSNDs) and stronger linkages between frontline and facility-based staff, including CHOs.

The improvement in technical knowledge among ANMs and CHOs, together with improved identification and management of intrapartum complications, further highlights the importance of practical and sustained capacity building. Similar improvements have been reported in Indian programmes using nurse mentoring, simulation and repeated training to strengthen intrapartum and newborn care.[13] In particular, a nurse-mentoring and simulation-based quality improvement initiative was associated with improved diagnosis of postpartum haemorrhage and intrapartum asphyxia.[13] In the Akshita Programme, these changes occurred alongside improvements in staff nurse competency, with 97% of assessed facilities showing an increase in composite competency scores following the intervention. The findings suggest that capacity building may be strengthened through repeated, context-specific training combined with on-site mentoring, practical demonstrations, simulation and competency assessment, rather than training alone. Continued mentoring and peer learning, including at higher-level facilities, may further support adherence to protocols, referral practices and clinical quality.

The substantial improvement in coverage of six HBPNC visits extends this continuum beyond institutional delivery.[14] Home visits provide opportunities for continued assessment and counselling of mothers and newborns, identification of danger signs and timely referral, consistent with findings from other public health programmes in India.[14,15] However, continuity of care also depends on effective information flow and coordination across levels. Identifying a risk during pregnancy or labour is of limited value if it is not communicated to the provider responsible for subsequent care. Strengthening linkages between frontline workers, CHOs and facility-based teams, supported by digital systems such as ANMOL 2.0, may improve beneficiary-level tracking, follow-up and information sharing. Coordination with facilities, outreach staff, ambulance networks and services such as the Surakshit Matritva Aashwasan (SUMAN) helpdesk can further support continuity of care.

Taken together, the findings suggest that improvements in mortality, service coverage and provider competency occurred alongside a broader package of system-strengthening interventions. Akshita worked through existing government platforms and service delivery structures, strengthening frontline coordination through the AAA Platform, provider capacity through training and mentoring, facility-based clinical quality through nurse mentoring, and continuity of care through HBPNC. This reinforces the importance of strengthening the continuity and quality of care across the health system rather than addressing individual service points in isolation.[16]

The findings should be interpreted in light of several limitations. Intervention areas were purposively selected and were not randomly assigned, and the analysis relied primarily on routinely reported HMIS and programme data. Differences in baseline levels between intervention and comparison geographies and potential variation in reporting may also influence observed trends. Most importantly, the analysis was descriptive and was not designed to establish causal effects. The observed changes therefore provide programme-level evidence of improvement and contribution but cannot be attributed to individual Akshita Programme interventions in isolation.

The findings provide important implementation lessons for strengthening MNCHN services within existing government systems. Sustained support for frontline coordination, provider capacity, clinical mentoring, follow-up, and information and referral linkages may help strengthen delivery across the 1,000-day continuum. The experience also highlights the need for greater attention to maternal nutrition and community engagement and underscores the importance of including complementary behaviour change and nutrition-specific interventions alongside broader health-system strengthening.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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