



Women Lead:
**Ten years of health system
change in Bihar, India**





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WHAT A DIFFERENCE A DECADE MAKES

More than 10 years ago, CARE formed a groundbreaking partnership with the government of one of India’s most resource-challenged states to help turn around its public health system. Bihar, with a socioeconomic profile not unlike those of the poorest African nations, lags in most development and health indicators, including those pertaining to maternal, neonatal and child health. To address these critical issues, the Bill & Melinda Gates Foundation (BMGF) supported CARE in forging a collaboration, under state leadership and eventually encompassing more than 100 partners, bringing a wide array of skills and ideas.

Today the state has achieved historic milestones – transforming health systems and outcomes, reducing maternal and child mortality to the lowest among India’s large northern states, and registering the country’s steepest declines in childhood stunting and fertility rates. Visceral leishmaniasis stands almost eliminated as a public health problem, and efforts toward elimination of tuberculosis and lymphatic filariasis have gained momentum. The state was one of the least damaged by the COVID-19 pandemic, with among the highest vaccine coverage. All these achievements were accompanied by economic growth, improved infrastructure and

communications, and rising levels of women’s education and empowerment – reflecting the CARE-Bihar partnership’s central strategy of working with women for the benefit of women and children.

Impact at a Glance Improvements in key indicators during the CARE-Bihar partnership

Indicator	2010	2013	2020
Maternal Mortality ¹	261	208	118
Infant Mortality ²	48	42	28
Neonatal Mortality ³	31	28	21
Under-5 Mortality ⁴	64	54	30
Total Fertility Rate ⁵	3.7	3.4	3.0

¹Per 100,000 live births SRS Special Bulletins on Maternal Mortality (2007-09, 2011-13 and 2018-20); ²0-1 year, per 1,000 live births; ³0-28 days, per 1,000 live births; ⁴Per 1,000 live births; Source: Sample Registration System (SRS); ⁵Per woman

The power of partnership

Throughout these remarkable years, CARE, the government of Bihar, and the consortium of national and international partners have worked together toward ambitious goals in reproductive, maternal, newborn and child health and nutrition (RMNCHN) services, while improving immunization rates statewide. With BMGF’s support and guidance, CARE has played a leadership role in the partnership’s steadily accumulating achievements across a series of programs: Ananya (statewide RMNCHN program); Integrated Family Health Initiative (IFHI), Technical Support Unit (TSU) and Techno-Managerial Support (TMS).

CARE’s role was not included direct service provision. Rather, CARE collaborated to strengthen and leverage Bihar’s existing state healthcare administration structures, which were extremely fragile at the outset. CARE led partners’ efforts to focus on addressing gaps in training, learning, management and accountability – consequently enhancing public trust that had kept women away from public facilities. Government agencies have progressively taken full ownership of partnership-led interventions, laying the groundwork for sustainability.

CARE’S CONTRIBUTION:

The partnership’s achievements in Bihar fall into three main areas:

1. Equipping, training and motivating more than 200,000 women frontline healthcare workers (FLHWs), including accredited social health activists (ASHAs) and anganwadi (childcare center) workers. FLHWs play a critical role in delivering preventive health and nutrition interventions to nearly 130 million people in rural Bihar, and form a trusted link to public health services, especially for pregnant women and new mothers.
2. Bolstering the quality of clinical care in 600+ public hospitals that deliver about 55% of the 3.2 million babies born in Bihar each year. Innovations including on-site mentoring and training for labor room nurses have helped transform primary health centers into hubs of quality healthcare for mothers and their children.
3. Strengthening underlying support systems – such as budgeting, procurement and supply chain management, human resource management, patient transport and digital information systems.

The program has been instrumental in building up previously deficient health services. Today, Bihar enjoys a more responsive, stable and confident system. Infrastructure, supplies, staffing and services are vastly improved. Declines in infant and maternal mortality come in the context of massive reductions in harmful obstetric practices and widespread implementation of simple but effective improvements in managing pregnancy, childbirth and care of low-birthweight, weak and sick newborns.

Empowerment of women at the frontline, coupled with system strengthening efforts, played key roles across multiple focus areas. In the pages that follow we detail a few examples.



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A POCKETFUL OF POWER FOR WOMEN AT THE FRONTLINE

Frontline healthcare workers (FLHWs) are more effective and motivated than ever - thanks to technological innovations that reinforce their skills and minimize paperwork.

One of CARE’s simplest interventions is among the most revolutionary: a special mobile phone application that enables women FLHWs to provide evidence-based care. The app includes tools to reach and track mothers and newborns, improving services from antenatal care to vaccine scheduling. Simply owning a phone improves morale and boosts the status of FLHWs in the community.

Based on CARE’s successful pilot in Bihar, the app was later rolled out nationwide.

Institutional Delivery

BETTER QUALITY OF CARE MAKES FACILITIES MORE ATTRACTIVE

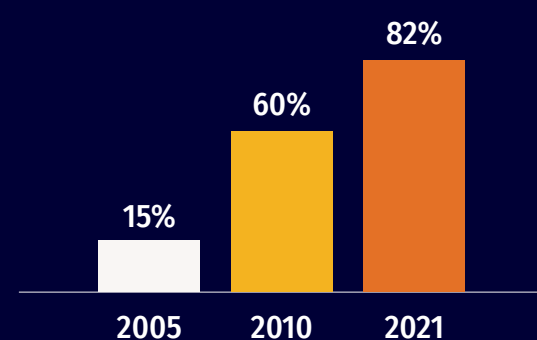
The CARE partnership confronted obstacles to institutional delivery – factors keeping women from choosing to give birth at healthcare facilities, where all potential complications could be quickly addressed. While national financial incentive programs contributed to higher rates of institutional delivery, such improvements quickly plateaued due to poor quality of care and lack of transportation, among other issues.

CARE's strategy to improve uptake included on-the-job nurse mentoring; strengthening of basic and comprehensive emergency obstetric and newborn care through evidence-based advocacy with the state health department; support for a streamlined quality improvement system, including gap assessments for essential equipment and supplies; and increased access to ambulance services through a public-private partnership model. Since 2016, demand-side efforts and resources have focused on 66 blocks (sub-districts) characterized by a persistently high proportion of home deliveries (more than 50%), addressing context-specific barriers.

The results showed significant improvements in the quality of care – as measured by the percentage of cases in which good practices are followed. Improving ambulance availability and use have contributed to more women choosing institutional delivery, with ambulance coverage now close to the World Health Organization norm of one ambulance per 50,000 population.

Trust in Bihar's state health system has improved significantly, with average monthly patient visits per public health facility increasing from about **39 in 2005** to about **10,000 in 2018**.

Percent of births in rural Bihar taking place in formal health facilities:



Ambulance availability and use	2017	2021
Number of ambulances for the population of Bihar	855	1,027
Facilities with 24x7 ambulance availability	93%	99%
Public facilities with at least one on-road ambulance	82%	97%
Percentage of ambulances out of service	32%	12%

THE IMPACT: Examples of improvements in care before and after the interventions*

Good intrapartum practices	Baseline	Endline
Fetal heartrate examination done on arrival	11%	70%
Abdominal examination	1%	15%
Delivery conductors wash hands with soap and water	76%	92%
Active management of third stage of labor	4%	47%
Negative practices	Baseline	Endline
Fundal pressure applied during labor	39%	16%
Pre-delivery administration of uterotonics	10%	1%

*At basic emergency obstetric and newborn care (BEmONC) facilities

Nurse Mentoring

ON-THE-JOB SKILLS BUILDING FOR WOMEN WHO SAVE LIVES

In Bihar's public health facilities, nurses and auxiliary nurse midwives (ANMs) are the frontline health workers who are central to delivery and newborn care. They face heavy caseloads – at times managing several women in labor simultaneously, some with potentially life-threatening complications – but often have lacked competence and confidence in their skills.

As a key strategy toward reducing maternal, neonatal and infant mortality, CARE and the government of Bihar introduced a Mobile Nurse Mentoring and Training (MNMT) program in 2012-2014 in 80 facilities. CARE-appointed mentors provided weeklong on-the-job training on delivery protocols – one round per month, with six rounds per facility. After the initial success of MNMT, the ongoing nurse mentoring program:

- Reached some 400 facilities and trained more than 3,500 nurses and ANMs.
- Improved the rational use of uterotonics (an important method for reducing the incidence of hemorrhage).
- Enhanced screening of women in labor for complications on admission.
- Improved management of neonatal asphyxia.
- Increased timely initiation of breastfeeding, use of Kangaroo Mother Care (skin-to-skin contact) immediately after birth, and clean cord care.

Since 2018, MNMT has been institutionalized within the government system, with government-appointed nurses serving as mentors.

Weak Newborn Tracking

SKILLED RESPONSE WHEN EVERY MINUTE COUNTS

A major priority for the partnership in Bihar is improving outcomes for “weak” newborns. Infants with a birthweight of 2 kg. (4 lb. 7 oz.) or less, who are born pre-term, or who cannot feed on their own are prone to higher rates of neonatal mortality, stunting and cognitive defects. It is critically important for caregivers to respond effectively to all needs of the newborn immediately after birth.

Simple, low-cost interventions help save vulnerable young lives. In 2015, CARE began supporting weak newborn tracking – a system through which facility staff, FLHWs and caregivers identify, track, and follow up on very low birthweight newborns.

Within two years of the inception of the intervention, neonatal mortality among newborns declined from 22% to 12%.²

Key areas of focus are as follows:

- Correctly identifying cases, including proper weighing and documentation, as well as observation of breastfeeding. Digital scales are made available in public facility labor rooms, along with training and supportive supervision of delivery conductors, including ANMs.
- Informing and counseling families that their babies are weak and need extra care. Prior to discharge, mothers are informed about measures such as initiation of breastfeeding, Kangaroo Mother Care, delayed bathing, recognition of danger signs and maintenance of hygiene.
- Tracking and supporting newborn care through regular home visits and daily phone follow-ups.
- Referral of babies weighing less than 1.8 kg. (3 lb. 15 oz.) and not sucking well to special newborn care units.

The effectiveness of these measures is well documented – and contributed to a drop of almost one-fifth in Bihar’s overall neonatal mortality rate in less than 10 years.²

1. BTSP Innovation Brief No. 5. https://bihar.care.org/wp-content/uploads/2020/03/Bihar_5_REV_PL.pdf; 2. 2010-2019. Source: Sample Registration System (SRS)

THE PANDEMIC PIVOT: Mentorship to build critically needed emergency skills

In response to COVID-19, CARE mounted the largest humanitarian action in our 75-year history. As part of this global mobilization, CARE India deployed more than 1,500 staff to Bihar to assist the government in its COVID-19 response, working at policy, facility and community levels to ensure that humanitarian aid reached the last mile.

To meet the urgent need for more skilled frontline emergency department (ED) nurses and doctors, CARE and the state government launched an innovative collaboration with Harvard-affiliated Boston Children’s Hospital and Brigham and Women’s Hospital. Seasoned professionals from those hospitals, as well as experienced doctors from southern India, help provide Bihar doctors and nurses with intensive on-the-job training in ED skills needed during the pandemic and beyond. This highly effective collaboration builds on the successes of the nurse mentorship program, as well as CARE’s emergency health experience in other countries – and is being scaled in Bihar and beyond.

Simple actions, lifesaving results

Intervention	Reduction in the odds of neonatal death*
Counseling on delayed bathing at public facilities	54%
Counseling on Kangaroo Mother Care at public facilities	52%
Follow-ups by phone	47%
Three or more home visits in first week	58%

*Death within 28 days. Based on adjusted estimates from Weak Newborn Tracking assessment survey, 2022.

Nutrition

FRONTLINE WORKERS REACH THE UNREACHED

The prevalence of undernutrition among children under five in Bihar has long been one of the highest in India, contributing to mortality and morbidity. Multiple causes include poor infant and young child feeding practices, lack of timely initiation of breastfeeding and complementary feeding, and high rates of anemia among women.

The partnership’s strategy focuses on improving overall nutrition-related practices (complementary feeding, dietary diversity and growth monitoring) by strengthening existing systems like the Indian government’s nutrition and anti-anemia programs, and building the capacity of state functionaries, healthcare staff and outreach workers. Interventions include local outreach – such as community events to initiate complementary feeding – as well as provision of care and counseling both in healthcare facilities and through home-based visits. A key element of these simple, low-cost interventions is service rendered through frontline healthcare workers (FLHWs), who are reaching previously unreached women to support and reinforce appropriate nutrition practices.

Broad solutions promoted through the CARE Bihar partnership include:

- Capacity building of more than 30,000 trainers and counselors to promote recommended infant and young child feeding and breastfeeding practices.
- Modular training for FLHWs and ASHAs.
- Supporting state-level home-based young childcare.
- Coordination and advocacy with the government’s nutrition program, Poshan Abhiyaan, in Bihar.
- Supporting the distribution of supplements for women (iron folic acid, calcium and albendazole).

3. National Family Health Survey (NFHS)-3 (2005-06), NFHS-5 (2019-20).

4. The anemia rate decreased to 60% as of 2015-16 (NFHS-4) before rebounding to 64%.



LITTLE LIVES ON THE BRINK

When 20-year-old Durga Kumari of Ranidih village gave birth to twins at the local sub-district hospital, both were categorized as very low birth weight: a boy, 1.65 kg. (3 lb. 10 oz.) and a girl, 1.39 kg. (3 lb. 1 oz.). The auxiliary nurse midwife and general nurse midwife who delivered the babies reacted quickly, counseling the family on proper care.

On a home visit the next day, community health workers found the infants unable to breastfeed. After lengthy conversations, they persuaded the parents to take their son and daughter to a special newborn care unit and were able to secure ambulance service. The babies were treated in the hospital until their eighth day.

The team continued to make regular home visits and found the babies well and feeding properly. By their 30th day, the boy weighed 2.2 kg. (4 lb. 14 oz.) and the girl 1.9 kg. (4 lb. 3 oz.). Both were well on their way to healthy lives, thanks to the prompt intervention of trained and attentive frontline healthcare staff.

Outcomes include the following improvements over five years³

Stunting decreased from 56% to 43%
 Wasting decreased from 27% to 23%
 Anemia among women of reproductive age decreased from 67% to 64%⁴

Family Planning

INCREASING COVERAGE AND QUALITY IN FACILITIES AND THE COMMUNITY

When the CARE-Bihar partnership began, the state had India's highest total fertility rate, with low family planning (FP) uptake among married women owing to a lack of awareness, intention, access and use of FP methods. Overall unmet need for family planning was the third highest in the country.⁵ Together with the state government, CARE is focusing on improvement of coverage and quality of FP services, both in facilities and through community outreach. Intervention components are as follows:

- Strengthening of health facilities, including 695 newly created Family Planning Corners to promote client privacy and confidentiality.
- Increased availability of FP commodities at facilities and via FLHWs.
- Capacity building of facility and outreach-based healthcare/service providers.
- Communication campaigns in the community, including leveraging digital mediums.
- Demand generation through Mission Parivar Vikas, the government's FP program.

The availability and quality of FP services have increased dramatically in five years, contributing to the ongoing decline in total fertility in Bihar.

Looking Ahead

CARE's transformational partnership with the government of Bihar has contributed to saving and improving thousands of lives of mothers and children. Today, CARE and the partnership believe the public healthcare system is ready for the next generation with a three-horizon vision:

1. Continue current activities to sustain and improve community health indicators.
2. Prepare for the medium term, supporting state- and district-level leaders to take over program design, implementation and monitoring.
3. Experiment for radical shifts, driving transformative frontline behavior changes.

5. NFHS-4, 2015-16.

The 'black fever' meets its match

Bihar and neighboring areas of Jharkhand state have been among the last strongholds of visceral leishmaniasis, known for afflicting the poorest families and causing an almost certain painful death if left untreated. In 2012, CARE joined state governments in intensified preventive and treatment efforts. Thanks to newly robust surveillance, treatment and outreach to find unreached cases, today a dreaded disease that affected the most vulnerable has been almost eliminated.

Achievements in Family Planning	2015-16	2019-20
Overall unmet need for FP	21.2%	13.6%
Demand satisfied by modern methods	51.4%	64%
Total fertility rate (per woman)	3.4	3

(Source: NFHS)



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As the partnership continues into a new era, CARE and the government of Bihar are proud of the state's progress in maternal, newborn and child healthcare. A bleak situation has given way to a more robust public healthcare system, where improvements in infrastructure, equipment, personnel and ambulance services have contributed to sharp declines in mortality and a reduction in harmful obstetric practices. CARE's evidence-based interventions, documented in numerous academic articles, have not only made a difference in Bihar, but they also are yielding important learnings that CARE is sharing with community, government and academic partners across India and worldwide.

CARE remains committed to putting women at the center as we work to strengthen the public health system, particularly leveraging one of India's most important healthcare resources: more than a million women FLHWs serving in rural communities. Key interventions carried out through the CARE-government partnership, from nurse mentoring to weak newborn tracking, are transitioning to greater government ownership, advancing the partnership's goal of ensuring sustainability of interventions.

CARE believes that the gains achieved over the past decade will continue and grow long after our direct involvement in this project ends, helping to ensure a healthier, more prosperous future for Bihar's youngest citizens and their mothers.



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