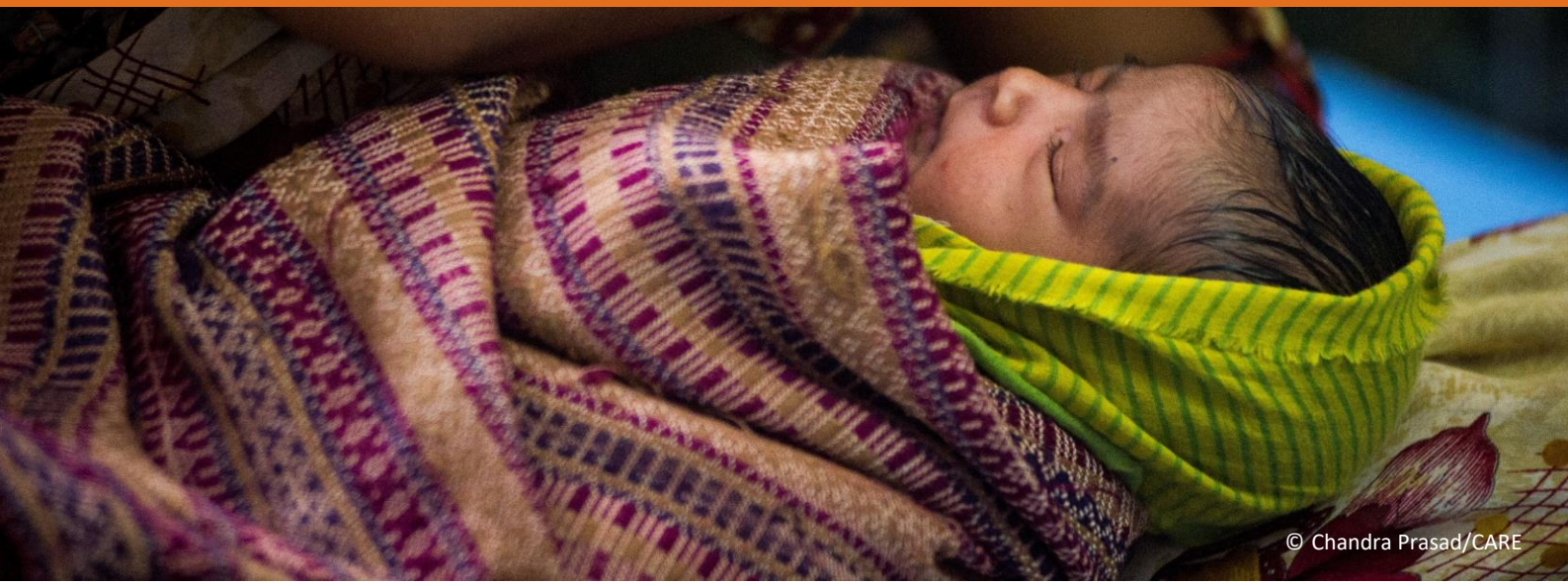
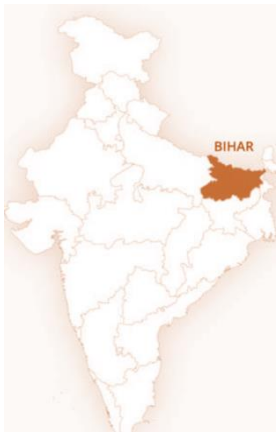


Weak Newborn Tracking

The Challenge and Context

Half of neonatal deaths[1] occur in the first 24 hours of life. Babies born at a weight of less than two kilograms (classified as very low birth weight) are at increased risk of neonatal death, stunting, and cognitive defects.[2]

In Bihar, India, one-third of all neonatal deaths occur among very low birth weight babies.[3] Bihar is the third most populous state in India, with an estimated 104 million people. In addition to high poverty (with 39% of the population below the poverty line) and high illiteracy (63% among females),[4] Bihar has one of the highest neonatal mortality rates in India.[5]



In this context, CARE has been supporting the Health and Social Welfare Departments of Government of Bihar for systems strengthening across reproductive, maternal, neonatal and child health, adolescent health, and nutrition interventions since 2011.[6] CARE operates as a Technical Support Unit to the government of Bihar across all 38 districts of Bihar under financial patronage of the Bill & Melinda Gates Foundation.

[1] A neonatal death is defined as a death occurring in the first 28 days of life (https://www.healthynewbornnetwork.org/hnn-content/uploads/Epidemiology_Lawn.pdf)
[2] https://data.unicef.org/topic/nutrition/low-birth weight/
[3] http://bihar.care.org/wp-content/uploads/2020/03/Bihar_5_REV_PL.pdf
[4] http://rchiips.org/nfhs/NFHS-5_FCTS/FactSheet_BR.pdf
[5] Sankar MJ, Neogi SB, Sharma J, Chauhan M, Srivastava R, Prabhakar PK, Khera A, Kumar R, Zodpey S, Paul VK. State of newborn health in India. J Perinatol. 2016 Dec;36(s3):S3-S8. doi: 10.1038/jp.2016.183. PMID: 27924104; PMCID: PMC5144119. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5144119/
[6] http://www.jogh.org/documents/issue202002/jogh-10-021001.htm

The Model

To help reduce neonatal mortality in Bihar, in 2015 CARE began supporting government health facilities and frontline health workers in **weak newborn tracking**. *Weak newborn tracking involves identification, tracking, and follow up of very low birth weight newborns by health facility staff, frontline health workers, and caregivers.* Over the course of the intervention, neonatal mortality among very low birth weight babies declined from 22% in 2015 to 12% in 2017.[3]

Objectives of Weak Newborn Tracking

- Proper identification of very low birth weight or preterm[1] newborns
- Provision of immediate post-natal care for identified very low birth weight or preterm newborns
- Demonstration to caregivers on essential newborn care practices
- Home visits to support caregivers
- Identification of symptoms among very low birth weight newborns and corresponding referral

Target Population

- Weak newborn tracking primarily targets very low birth weight newborns
- Secondary target populations include mothers and care takers of very low birth weight newborns
- Health care workers, including facility-based workers as well as frontline health outreach workers

Cadres of Frontline Health Workers within India's Public Health System

Within Bihar's public health system, **frontline health workers** (FLWs) include Accredited Social Health Activists (ASHAs), Auxiliary Nurse Midwives (ANMs) and Anganwadi workers (AWWs). These outreach workers provide basic health messaging and outreach visits for mothers and newborns. Prior research revealed that visits from community health workers can be effective in reduction of neonatal mortality and improved essential newborn care practices in India.[7]

However, assessments in 2015 revealed that frontline health workers lacked the skills to be able to manage and track home visits and essential newborn practices for very low birth weight newborns. Through training, establishment of documentation and follow up formats, mechanisms for support and follow up, and understanding of newborn care practices, frontline health workers were able to conduct home-based weak newborn tracking.

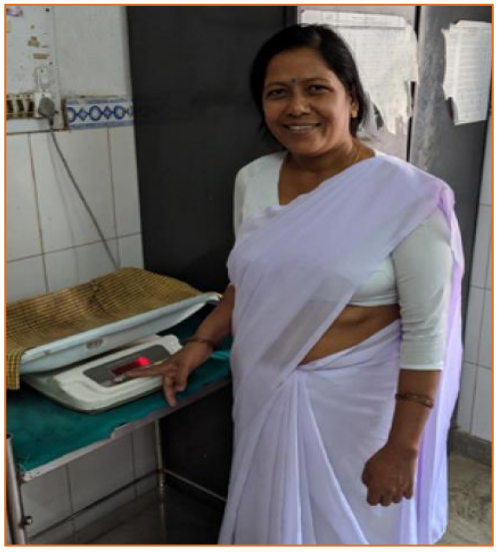
[7] Bang et al. (1999). Effect of home-based neonatal care and management of sepsis on neonatal mortality: field trial in rural India. Lancet Dec 4;354(9194):1955-61.

Description of the Model

Weak newborn tracking consists of two major components:
1) identification of very low birth weight newborns at health facilities
2) tracking of very low birth weight newborns at home with follow up

Summary of Interventions for Weak Newborn Tracking

- Use of a simple and affordable **tool** - **a digital scale to increase the ANM's accuracy in measuring the weight of new-borns** immediately after birth
- These accurate weights help FLWs to give low birth weight babies the **special care they need during the first critical weeks** of their lives
- **Continued tracking upon discharge** - On the **first, fifth, and seventh day after a new-born is discharged, an FLW visits the mother and child at home** and refers them to the facility for care if she notices any danger signs
- **Additional telephonic follow up** with mother and FLW from facility
- The FLW continues to follow up with weekly visits until the fourth week after delivery, with one final visit at six weeks postpartum



Interventions at the facility level include:

- Regular trainings for labor room staff on assessment of birth weight, gestational age, initiation of breastfeeding, management of complications as well as documentation
- Cross-checking of recorded birth weights and gestational age of mothers by labor room staff at regular intervals
- Regular communication with mothers and caretakers regarding the status of newborns, breastfeeding, and demonstration of supportive care (e.g., kangaroo mother care for extra warmth)
- Establishment of a dedicated documentation register to track details of very low birth weight newborns
- Establishment of a form called "Weak Newborn Passport," consisting of three sections:
  - Details on very low birth weight newborns for health facilities to attach to case sheet
  - Details on household outreach visits and follow up visits for very low birth weight newborns completed by frontline health workers
  - Details on the very low birth weight newborns for caretakers and families with vital information and contact numbers for health staff

Outreach interventions at the community level include:

- On the 1st, 3rd, 5th and 7th days after birth, facility-based staff make telephone calls to frontline health outreach workers (ASHAs/AWWs) responsible for home visit follow up. These calls help ensure that frontline outreach workers conduct home visits on each of these days for very low birth weight newborns.

- During these home visits, frontline health workers provide information on home-based essential newborn care, kangaroo mother care, maintenance of exclusive breast-feeding, hygiene, cord care, and monitoring of growth.
- After completion of home visits, frontline health workers submit a follow up card to health facility staff to document follow up
- On the 2nd, 4th and 6th days after birth, facility-based staff make telephone calls to the mothers and caretakers of low-birth-weight newborns to provide counselling for extra breast feeding, extra warmth and hygiene.
- Facility-based staff conduct home visits for very low birth weight newborns in the 2nd week after birth for counseling on essential care practices
- Facility-based staff make final telephone follow-up call on 28th day of birth to inquire about the condition of the very low birth weight newborn
- Frontline health workers document outreach visits and submit reporting forms submitted at block and district levels

During outreach and follow up, frontline health workers refer very low birth weight newborns with any of the following symptoms [8] to the nearest health facility with a special newborn care unit: fever; decreased interest in breastfeeding; increased respiration, lethargy.

Monitoring and Evaluation

Weak newborn tracking requires rigorous documentation and monitoring in addition to evaluation. Recommended components for documentation include:

- Establishment of a dedicated documentation register to track details of very low birth weight newborns (e.g., birth weight, gestational age, initiation of breastfeeding)
- Details on very low birth weight newborns for health facilities to attach to case sheets
- Submission of a follow up card by frontline health workers upon completion of home visits to encourage follow up
- Details on the very low birth weight newborn for caretakers and families including vital information and contact numbers for health staff
- Documentation of outreach visits by frontline health workers with reporting forms

For evaluation of weak newborn tracking in Bihar, CARE conducted baseline and endline assessments. The baseline assessment was conducted in February through April 2015. Very low birth weight or preterm newborns were identified from labor room registers of randomly selected health facilities. Fifty percent of very low birth weight or preterm newborns identified in each health facility were traced (N = 1445).

Top evaluation results from weak newborn tracking:

01

Serious illness among very low birth weight babies during the first month in life decreased from 57% in 2015 to 39% in 2017

02

Among the lowest birth weight categories (new-borns weighing less than 1,500 kg/ ~3lbs), mortality reduced from 63% in 2015 to 30% in 2017

03

Most strikingly, mortality among very low birth weight babies declined from 22% in 2015 to 12% in 2017

[8] In accordance with global guidance (Lawn JE et al Lancet 2005)

Two rounds of endline assessment were conducted in 2017, with the first round occurring six months after intervention (n = 1705) and the second round 12 months after intervention (n = 1398). Intervention results showed:

- **Neonatal mortality** among very low birth weight babies **declined from 22% in 2015 to 12% in 2017**
- **Serious illness** among very low birth weight babies during the first month in life **decreased from 57% in 2015 to 39% in 2017**
- In the lowest birth weight category (newborns weighing less than 1,500 kg/~3lbs, **mortality reduced** from 63% in 2015 to 30% in 2017.
- **Accurate weighing of all newborns increased** across public facilities, along with increased identification of very low weight newborns
- Follow up through phone and home visits increased
- **Recommended newborn care practices** including delayed bathing, exclusive and frequent breast feeding, proper cord care and hygiene **increased**

Recommended indicators to monitor weak newborn tracking include:

- Home visit by frontline health workers within 24 hours of birth/returning from hospital
- Minimum 3 home visits by frontline health workers within 1st week of birth
- Whether mother or caretaker was informed about the status of her newborn at facility
- Whether mother or caretaker advised on exclusive and frequent breastfeeding, hygiene, and extra warmth
- Whether mother or caretaker practice exclusive and frequent breastfeeding, hygiene, and extra warmth
- Delay bathing at least for one week
- Practicing kangaroo mother care

Families and caretakers of very low birth weight newborns can be interviewed through a structured questionnaire to further understand newborn care practices.

Continue assessment: As the intervention is scaled, continue regular assessments on outcomes of weak newborn tracking and documentation.

Considerations for Scale and Replicability

Weak newborn tracking was implemented as part of the technical support provided by CARE to the Government of Bihar. As part of this partnership, CARE collaborated closely with government counterparts and government health facility staff and frontline health outreach workers to implement the weak newborn tracking pilot. Non-governmental organization staff supported government through training, mentoring, and capacity building of government health facility and outreach staff and supported the establishment of rigorous documentation formats as described previously.

Upon successful demonstration of the impact of this intervention on neonatal mortality and outcomes, the Government of Bihar scaled up the weak newborn tracking approach across the state's health facilities and frontline health outreach workers. Weak newborn tracking significantly reduced newborn mortality in a setting with some of the worst health indicators in South Asia.[9] Weak newborn tracking could be an effective health systems approach for other contexts with a high proportion of very low birth weight newborns and a high burden of neonatal mortality.

Staff capacity: Consider approaches to integrate training of government labor room staff and frontline health workers for identification, follow-up, and documentation of very low birth weight and preterm newborns into ongoing trainings and quality improvement initiatives.

The facility-level and outreach interventions described above help to ensure that required components for weak newborn tracking are met, as shown below:

Requirements for implementation of weak newborn tracking

- Proper weighing and documentation of all live births
- Proper calculation and documentation of gestational age
- Identification and documentation of weak breastfeeding at birth
- Informing the mothers and relatives regarding the status of the newborn (as a weak newborn), support during breastfeeding, extra hygiene, and demonstration of supportive care (KMC, for extra warmth)
- Periodic, regular follow-up of all identified weak newborns and ensuring referral whenever needed.
- Formats/registers for documenting the identified weak newborn and their follow-up

Existing Resources

- Weak Newborn Tracking: Bihar Innovation Brief: http://bihar.care.org/wp-content/uploads/2020/03/Bihar_5_REV_PL.pdf
- Creanga et al (2021). Using a mobile nurse mentoring and training program to address a health workforce capacity crisis in Bihar, India: Impact on essential intrapartum and newborn care practices. http://www.jogh.org/documents/issue202002/jogh-10-021009.htm
- Journal of Global Health Collection (2021): Learning from Ananya Programme Piloting and Scale-up in Bihar, India. http://www.jogh.org/col-ananya.htm

[9] http://www.jogh.org/documents/issue202002/jogh-10-021009.htm

Contact:
Sunil Babu, Chief of Party, Bihar Technical Support Program, CARE India
sunilb@care.org

Annexure 1: Weak Newborn tracking form/case record

1-c. WEAK NEWBORN CASE RECORD					
Name :			**Phone Number of mother/ guardian:**		
Basis of diagnosis (Tick relevant option)	**Weight </= 2000 gms/:** **Gestation age:** **(Source: Labour room register)** **Weak Breast feeding:** **(Source: ANM duty on the day of delivery of the weak new-born)**		**Immediate Outcome (Yes/No)**	**Died:** **Referred:** **Discharged:**	
Date of referral			**Date of discharge**		
Follow up through Phone call					
Day 1 - ASHA/AWW **(Follow up on Counselling & practices)**	**Date of Phone call** **Alive (yes/No)** **Dead (yes/No)** **a) Warmth (yes/No)** **b) Cord Care (yes/no)** **d) Cleanliness (yes/No)** **e) Delayed Bathing** **f) Breast feeding (yes/No)** **g) When did you visit last time**			**Notes:**	
Day 2 - Mother and Family **(Follow up on Counselling & practices)**	**Date of Phone call** **Alive (yes/No)** **Dead (yes/No)** **a) Warmth (yes/No)** **b) Cord Care (yes/no)** **d) Cleanliness (yes/No)** **e) Delayed Bathing (yes/No)** **f) Breast feeding (yes/No)** **g) Did ASHA/AWW Visit you in the last 24 hours? (Yes/No)**			**Notes:**	
Day 3 - ASHA/AWW **(Follow up on Counselling & practices)**	**Date of Phone call** **Alive (yes/No)** **Dead (yes/No)** **a) Warmth (yes/No)** **b) Cord Care (yes/no)** **d) Cleanliness (yes/No)** **e) Delayed Bathing (yes/No)** **f) Breast feeding (yes/No)** **g) When did you visit last time**			**Notes:**	
Day 4 - Mother and Family **(Follow up on Counselling & practices)**	**Date of Phone call** **Alive (yes/No)** **Dead (yes/No)** **a) Warmth (yes/No)** **b) Cord Care (yes/no)** **d) Cleanliness (yes/No)** **e) Delayed Bathing (yes/No)** **f) Breast feeding (yes/No)**			**Notes:**	

	g) Did ASHA/AWW Visit you in the last 24 hours? (Yes/No)		
Day 5 - ASHA/AWW (Follow up on Counselling & practices)	Date of Phone call		Notes:
	Alive (yes/No)		
	Dead (yes/No)		
	a) Warmth (yes/No)		
	b) Cord Care (yes/no)		
	d) Cleanliness (yes/No)		
	e) Delayed Bathing (yes/No)		
	f) Breast feeding (yes/No)		
	g) When did you visit last time		