RMNCHN in Bihar

What did we learn? Summary of approaches and lessons across ten years

OUTLINE

- Focus of the intervention
- Domain Specific lessons
- Choices in the implementation strategy
- Directional Scenarios

Partners

- DFID
- NIPI
- UNICEF
- UNFPA
- Saving New Born Lives
- Emory University
- AMDD
- ABT Associates
- BBC Media Action
- Engender Health
- Janani
- Pronto
- IHI
- Engender Health

Focus of the intervention

DOMAIN FOCUS

- *Kicked off the intervention with focus on Neo natal Mortality Rate (NMR), Maternal Mortality Rate (MMR), Stunting, Contraceptive use*
- *Anaemia during pregnancy and PNMR were later added to the intervention*

STRATEGIC FOCUS

- *Interventions with known efficacy were utilized*
- *Attempted to find and use strategies to ensure implementation with reasonable fidelity and within contextual realities*
- *Deep consultations with PSTs and technical partner to design and finalize "technical and strategic package"*
- *Implementation strategies were chosen to get to the impact using a combination of published and tacit know-how of effective operational approaches*

Technical Intervention package – core and innovations

Maternal

1. **Counsel (families)** for **birth and emergency preparedness** (mother and newborn)
2. **Quality management** of routine **deliveries at PHCs**
3. **PHC-driven facilitative process** to build **BEmOC capabilities**
4. **Post-partum evaluation of the mother and newborn**, stabilization/ referral for complications
5. **Referral package** - tailored for (a) **PHCs,** and (b) **Home deliveries or problems identified at post partum evaluation**[1]

Newborn

1. **Essential package of newborn care,** including STSC, for all births (institutional and home)
2. **Extra care for small baby** including consistent STSC/KMC
3. Application of **chlorhexidine on cord for prevention of neonatal sepsis**
4. **Community-based identification, referral and management of neonatal infections**

Nutrition

1. **Breastfeeding** – a) **early initiation**; b) **exclusive in first 6 months**; c) **breastfeeding for 24 months**
2. **Appropriate complementary feeding**
3. **IFA: Uptake and use during pregnancy**
4. **MMP:** Introduction and promotion **for children**

Immunization

1. **Fully immunized child** by ensuring no left-outs and reducing drop-outs
   - BCG, DPT3, OPV3, MCV1, MCV2

Family planning

1. **Community-based counselling**: Integrate postpartum and post abortion FP counselling and referral
2. **Facility-based counselling and services**: Promote FP use in public sector through Family Planning corners
3. Expand access to **quality services** for family planning with focus on **female sterilization and IUDs**
4. Leverage private sector pharmacies and providers to drive use of **injectables**
5. Improved uptake of **birth spacing** methods - test use of incentives
6. **Introduce and scale up new contraceptive technologies** – longer term priority

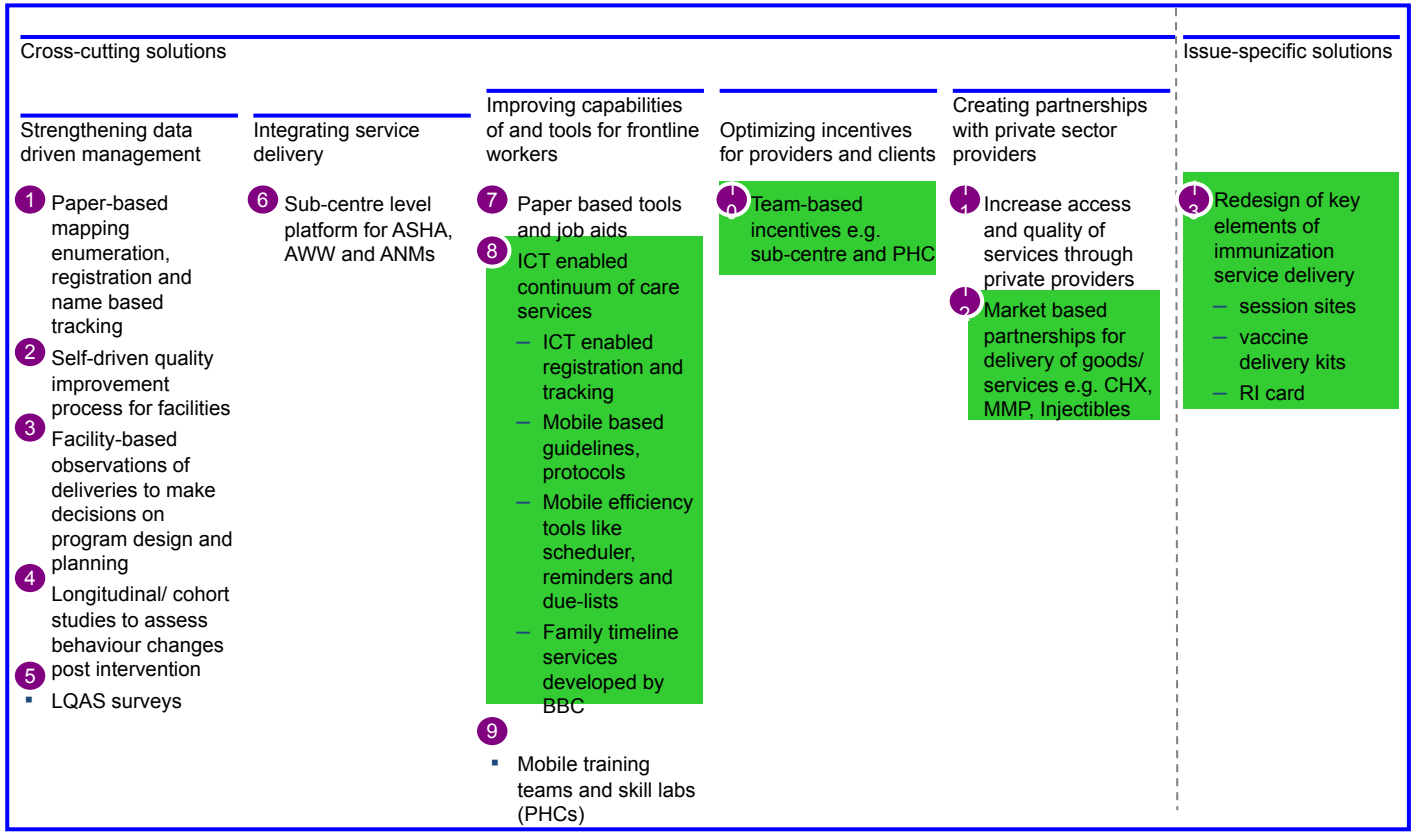
~75% of the interventions are community based
~ 40% of the interventions represent innovations

innovations

1: Referral package is to be used by the ANMs and doctors at PHC to refer up to district hospitals; and for home deliveries to refer up to PHCs

Core solutions and innovations

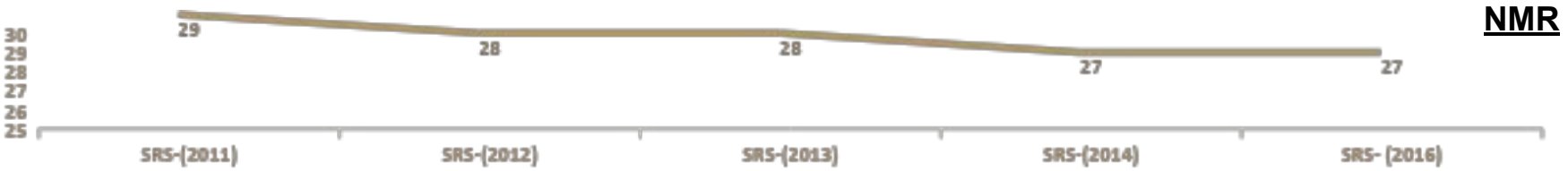
Proposed innovations



Note: Solution #12 has been detailed out when we describe the relevant technical interventions and so will not be described separately in this section

DOMAIN SPECIFIC LESSONS

Newborn and Child Health



2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
IFHI			*TSU Phase - I*				*TSU Phase - II*			

- ENBC
- Weak New-born care through Community-based identification, referral and management
- Asphyxia management through nurse mentoring

- Weak New-born care through facility-based interventions
- Neo-natal sepsis – pilot
- CHX pilot (not implemented)
- Asphyxia management
- Focus on iatrogenic asphyxia
- Support the strengthening of SNCUs
- Pneumonia - Diarrhoea pilot – treatment of childhood illness
- Estimated Neo-natal Mortality Rates and Post Neo-Natal Mortality Rates and their causes

- Weak New-born care through facility-based interventions
- Neo-natal sepsis – pilot
- Asphyxia management
- Focus on iatrogenic asphyxia
- Support the strengthening of SNCUs
- Weak New Born tracking through digital interventions
- Incorporated SNCU support in nurse mentoring

DOMAIN SPECIFIC LESSONS

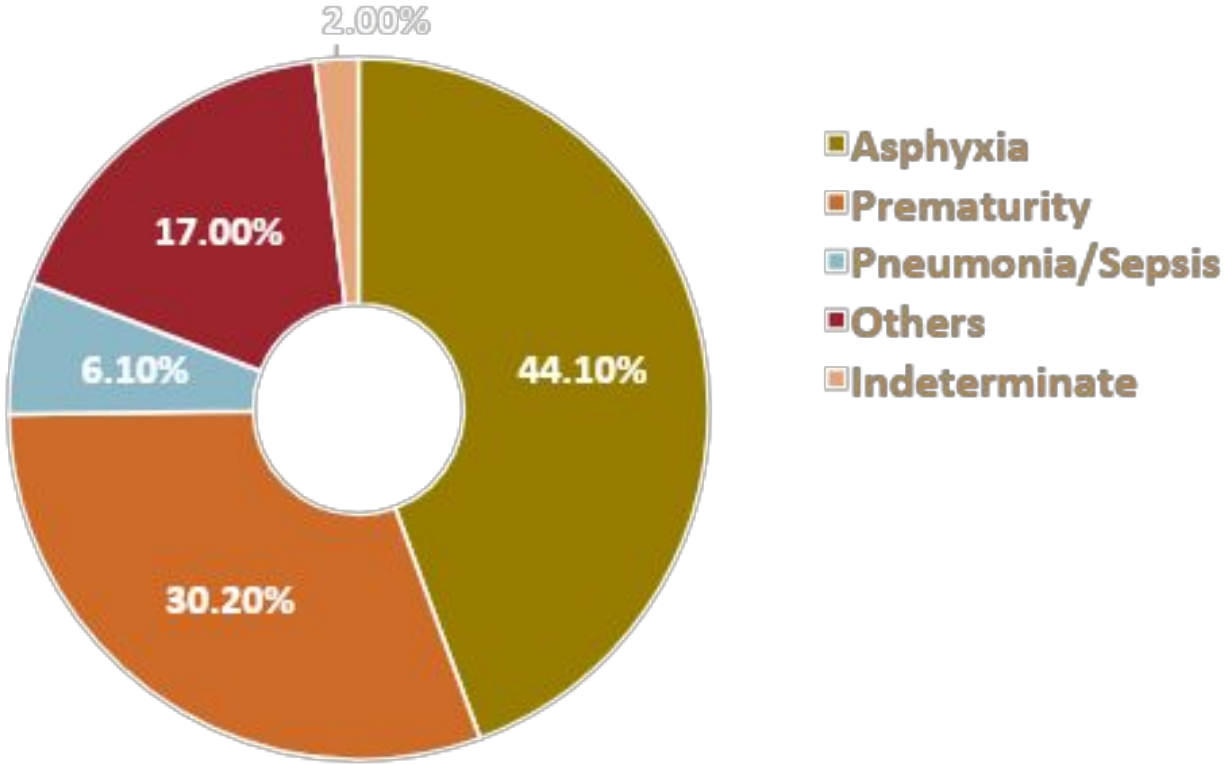
Neonatal & Child Mortality

- Bihar stands lowest among EAG states, close to national average
- Neonatal sepsis (< 6%), diarrhoea (<5%), pneumonia (<5%) are no longer dominant cause of death in rural Bihar
- Morbidity remains significant(55% children aged <5y had one episode of illness in the previous 3m*), care-seeking is very high (93% sick children underwent treatment*) , effective treatments are available from private sector.
- Asphyxia (44%) and complications of preterm birth (30%) persists as main cause of death among neonatal whereas SIDS and complicated illnesses for post neonatal
- Strong emphasis in GoI policies, but need much sharpening to produce impact

* Vulnerability Study CARE-BTSP-CML 2014-20

** Annual Household Survey CARE-BTSP-CML 2014-20

CAUSES OF NEONATAL MORTALITY (N=340)



* Neonatal Mortality Study CARE-BTSP-CML 2016

Supportive Care Saves Newborn Lives….

Saving lives of very low birth weigt babies by strengthening newborn care services: *Learnings from Bihar for potential scale-up*

Context-Neonatal Mortality

India

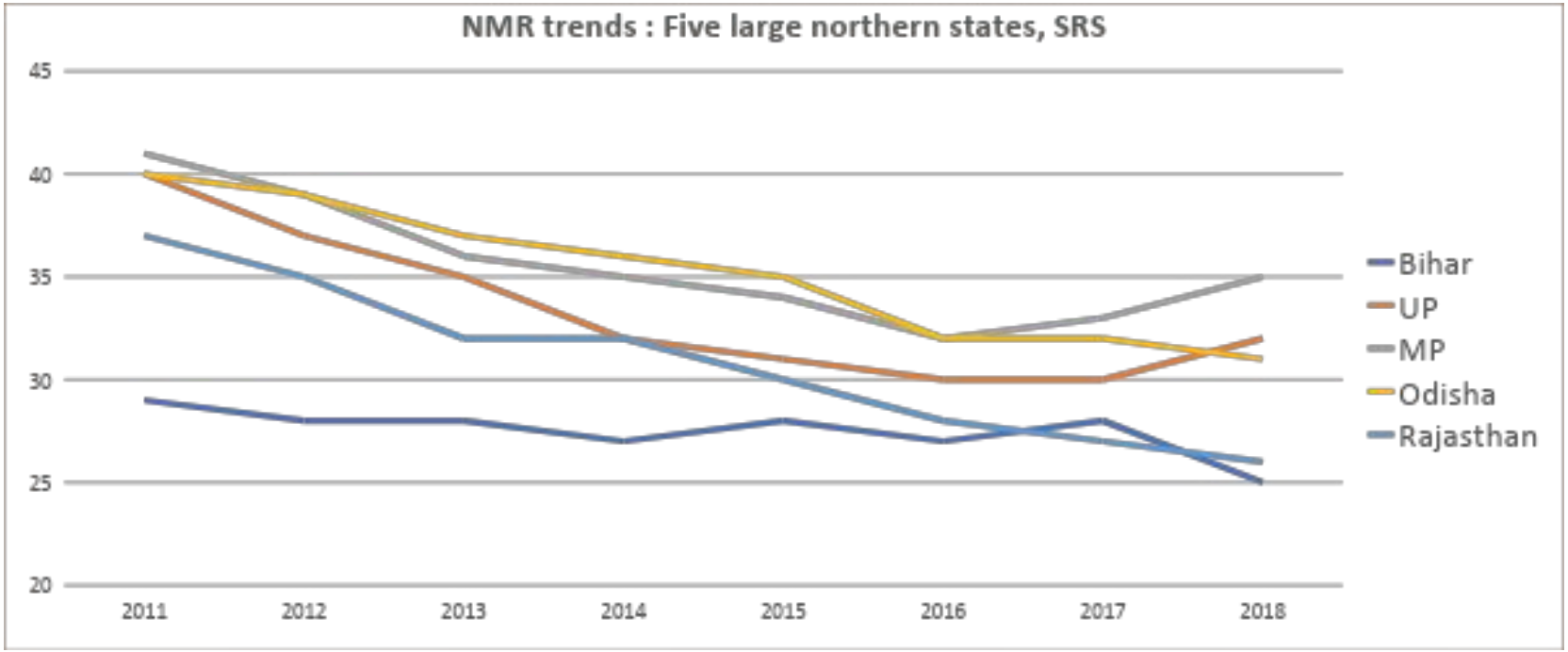
- Contributes >1/4th of global neonatal deaths
- ~0.75 million neonatal deaths annually in India, the highest in the world.

States

Contribution of 4 states-Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan

- ~55% of total neonatal deaths in India
- ~15% of annual global neonatal deaths.
- Despite progress, pace of decline in Bihar was apparently quite slow in the decade between the last two NFHS rounds.
- However, according to SRS data, Bihar has had the lowest NMR among the large EAG states since 2011.

These are the SRS trends in NMR over time, showing Bihar NMR has been low since a long time, and signs of a late dip at the last measurement.



Rationale and Evidence: Focus on preterm and very low birth weight babies

- In India, and in Bihar, around a third of all neonatal deaths are from complications of prematurity. In addition, low birth weight and premature birth underlie deaths due to asphyxia, sepsis and other causes as well.
- In the SEARCH studies
  - **67.5% of all neonatal deaths** at the baseline came from the babies with birthweight < 2000 gm.
  - The interventions reduced NMR by 70%. *The total reduction in neonatal mortality during intervention (1996 to 2003) ascribed to sepsis management, was 36%;* ***reduction ascribed to supportive care of low birth weight (LBW) neonates, 34%.***
  - **In the subgroup preterm-LBW, the mortality impact was the greatest (82%). For this group, supportive care was deemed responsible for 75% of the mortality impact, not antibiotics.**

Current Newborn Care Programmes

Main programs that emphasize preterm-LBW interventions:

- Facility Based Newborn Care (FBNC)
- Home-Based Newborn Care (HBNC)
- ASHA (Module 7)

Known Gaps:

- ✔ Last mile implementation coverage and quality
- ✔ Oversight and support from supervisors
- ✔ Outcomes based monitoring

Challenge: how to achieve sufficient intensity to get impact at scale under Bihar conditions?

Current Protocols

- ASHA module 7 identifies two kinds of ‘high-risk’ neonates:
  1. Preterm/LBW (≤ 2000 g, < 37 weeks, not feeding from Day 1)
  2. PSBI/Neonatal sepsis (lost interest in feeding, reduced activity / limp, cold to touch)
- Both are generally referred to as ‘high-risk’, but the two types require completely different approaches to prevent death:
  1. **Preterm/vLBW (but not sick):** Supportive care for at least the first week after birth (sepsis prevention, warmth, exclusive breastfeeding)
  2. **Sick (PSBI) neonates (whether or not preterm/vLBW):** Clinical management, including parenteral antibiotics

  These are detailed in the ASHA module as well as HBNC guidelines.

Adaptations in Bihar

- To make it operationally simpler and clearer to differentiate, describe and initiate the right action, two discrete terms have been used:
  1. Preterm/vLBW: ***'Weak' newborn*** कमज़ोर शिशु
  2. PSBI/Sepsis: ***'Sick' newborn*** बीमार शिशु
- Given the circumstances, the same criteria for identification of preterm / vLBW as used for HBNC are applied for use by labor room ANM/GNM (≤ 2000 g, < 37 weeks, not feeding from Day 1) for identifying and initiating action and using adequacy of breastfeeding as an indicator for referral decisions.
- However, it is recognized that determination of gestational age is not easy to ensure in all facilities, and **birthweight using digital scales is a good proxy**.

✔ Immediate assessment emphasized for babies delivering in public institutions considering around 60% of all rural deliveries are in government hospitals currently.

✔ Strong insistence on ensuring first day home visits in all deliveries at home or in private institutions for identification of WNB.

Weak Newborn Care Programme (WNBC): content

Launched in 2015 as a joint initiative of Government of Bihar and the TSU/CARE, WNBC program addresses mortality in the highest risk group of neonates (***birth-weight < 2000 gm, gestational age at birth < 37 completed weeks, or not feeding well from the day of birth***) termed Weak New-Born (WNB). Formal state guidelines were issued in 2016, covering babies born in public facilities as well as those born elsewhere. The main interventions for babies born in **public facilities** are:

1. Identification of weak newborn babies born in public health facilities:

- Digital weighing scales for birthweight
- Digital application / printed calendar for estimation of gestational age
- Observation of breast feeding

2. Informing the family that the baby is weak and requires extra care:

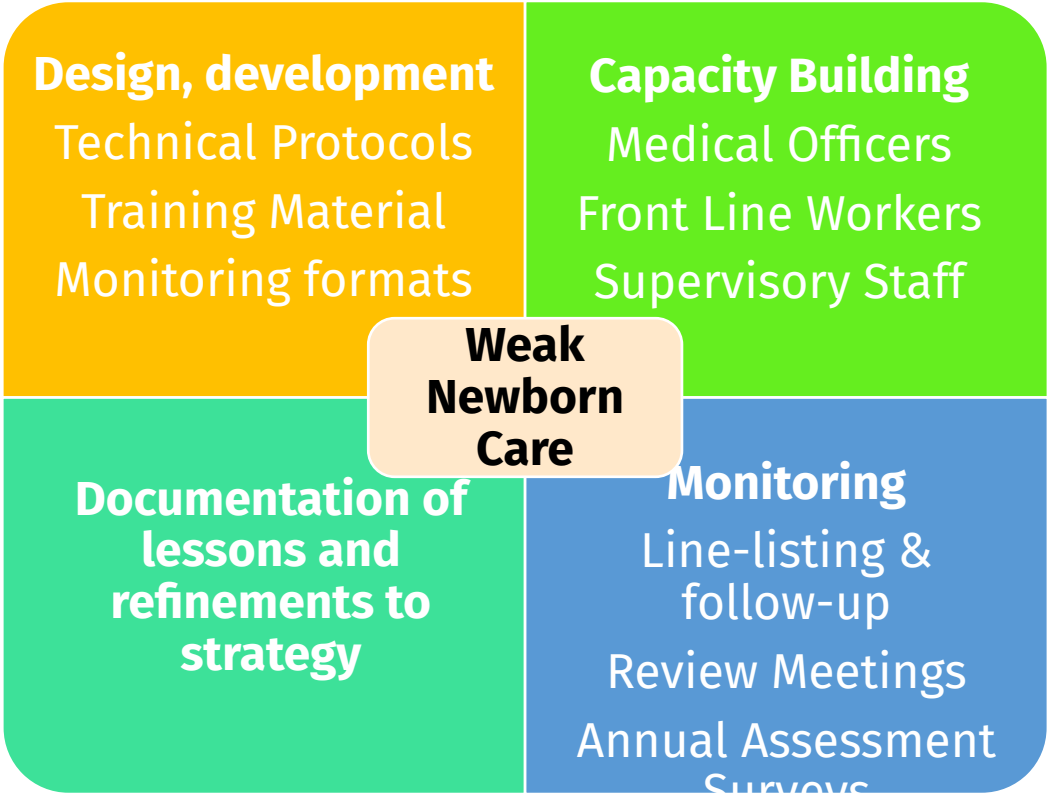
- Initiation of breastfeeding, dry cord care and Kangaroo Mother Care (KMC) in the facility
- Pre-discharge counselling of mothers and families for:
  - KMC at home
  - delayed bathing x 1 wk
  - Frequent breastfeeding
  - Handwashing, dry cord care
  - Danger signs and referral
- Issuing a 'Passport' to the baby for extra care at home and follow-up & with counterfoil passed on to ANM for follow up.

3. Tracking and supporting newborn care:

- Daily telephonic follow-up with family and ASHA during first week by PHC staff.
- Daily home visit by ASHA for first week.
- Referral of babies ≤1800 gm and not sucking well to SNCUs.
- Confirmation of status of baby at 1 month

The content for home or private sector delivered babies is similar, starts with first day home visit to screen and identify

Role of TSU/CARE



Independent Assessments by CML Unit of TSU

Scope:

- 'Weak' babies born in non-teaching government facilities of Bihar

Objectives:

- Assess survival of WNB at the end of the neonatal period
- Assess the coverage of services provided to WNB families during this period

Sampling for each round until 2019:

- 171 hospitals randomly selected (same facilities repeatedly assessed) – a third of all facilities
- All WNB listed during previous two months in the selected facility (based on birthweight and other criteria) followed up at home for in-depth interview of parents

Additional assessment in 2019:

- All 552 non-teaching government hospitals in the state included
- All WNB listed during previous one month in the selected facility (based on birthweight and other

Facilities	Round	Assessment timing		vLBW Babies born during	N
N=171	R-1	Pre-intervention		Feb-Apr 2015	1445
	R-2	Interval between Intervention and assessment (in months)	6	Sep-Oct 2015	1705
	R-3		18	Sep-Oct 2016	1398
	R-4		30	Sep-Oct 2017	2722
	R-5		42	Sep-Oct 2018	2755
	R-6		54	Sep-Oct 2019	2767
N=552	Bihar		55	Nov 2019	4136

ASSESSMENT FINDINGS

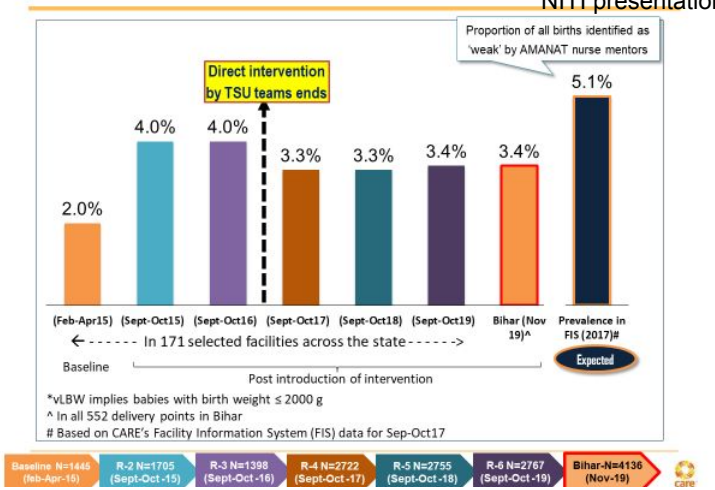
Pathways of Risk Reduction

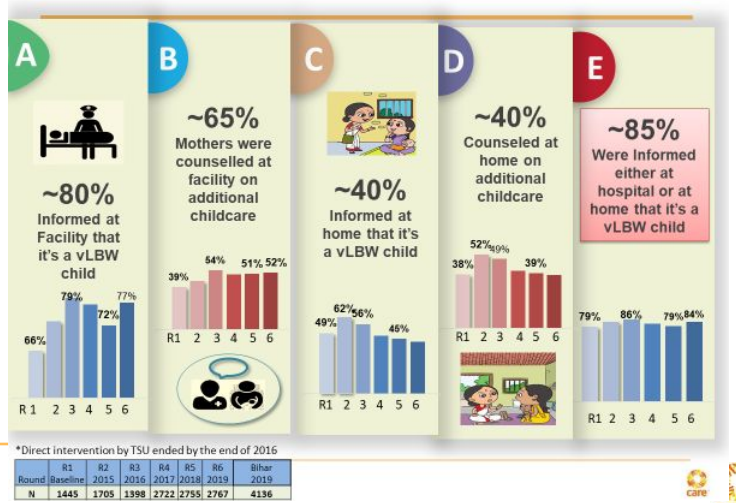
Identification of Weak Newborns:

- Proportion identified as weak: 2.1% to 3.4% – (Expected @ ≤ 2000 g: 5.1%)
- Rounding errors in birthweight: 69% to 24%
- HMIS reporting of LBW has about doubled

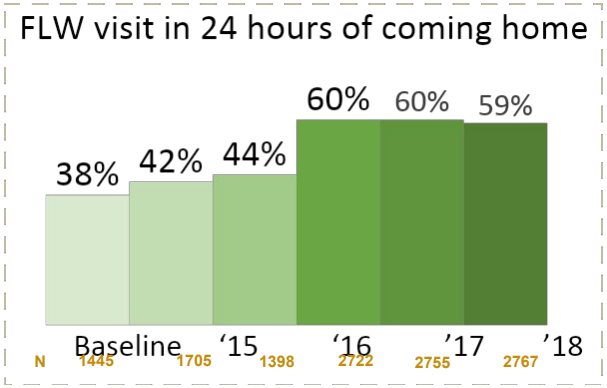
Reach of intervention:

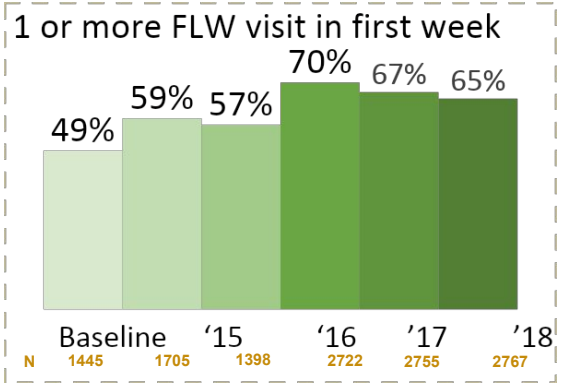
- Informed in facility that weak at birth: 66% to 77%
- Counselled (facility) on additional care: 39% to 52%
- Weighed at least once after facility birth: 22%
- One or more 1st wk FLW home visit: 49% to 65%

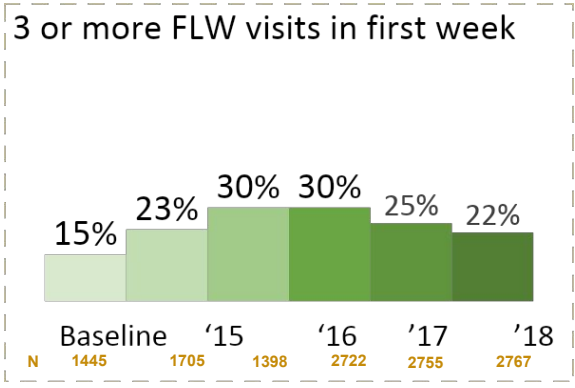


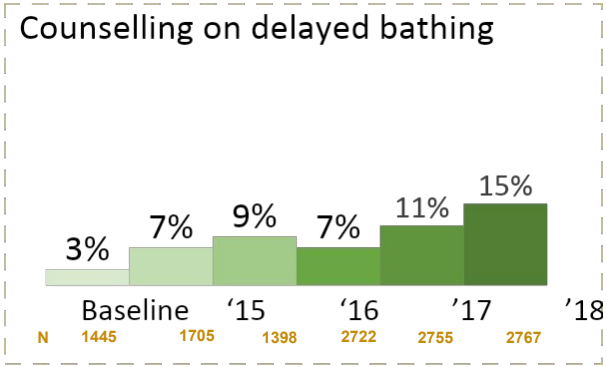


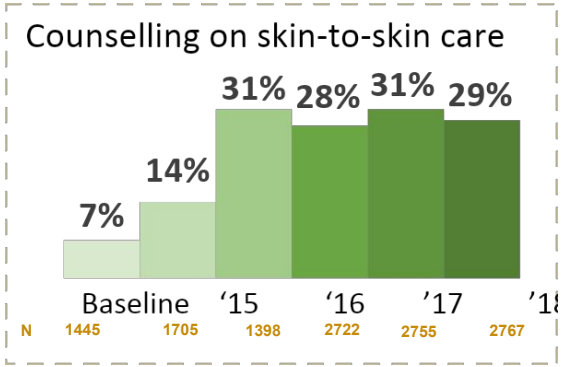
Coverage of home visits and counselling increased substantially

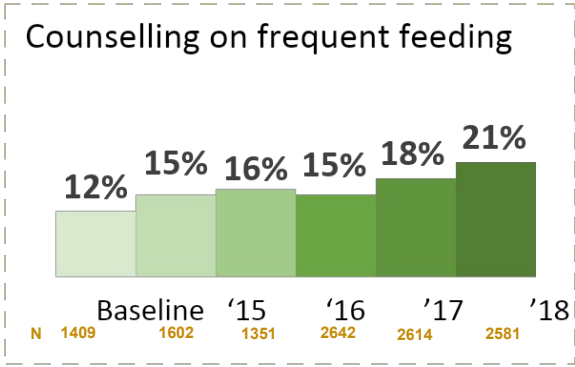








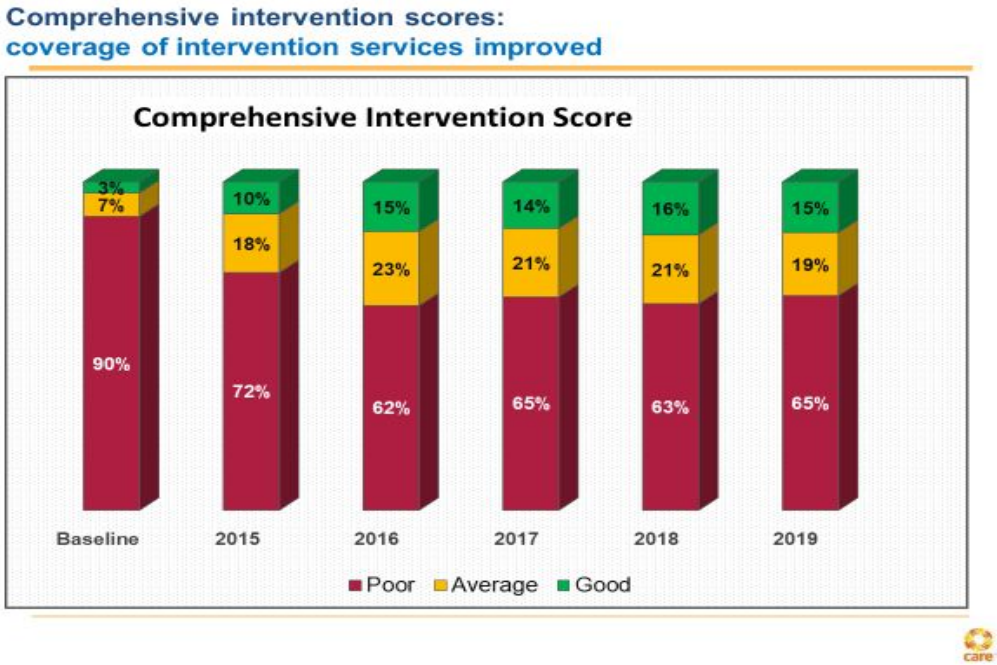




Pathways of Risk Reduction (Cont.)

Comprehensive Intervention Score (CIS):

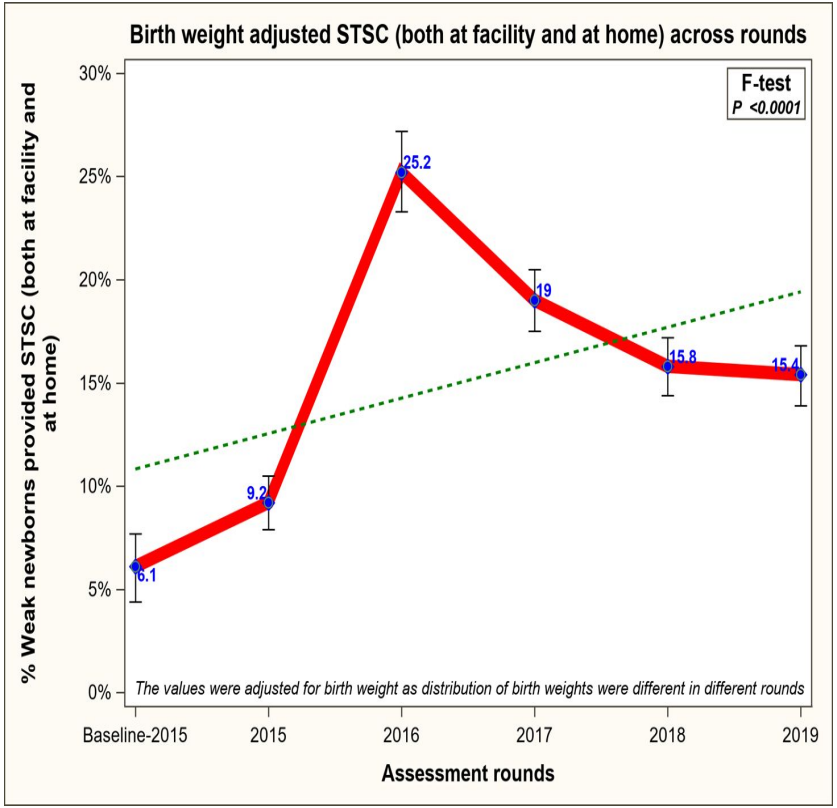
- *Comprising* (as reported by mother):
  - Informed that baby was weak
  - Thermal care
  - Breastfeeding
  - Cord care
  - 3 or more visits at home



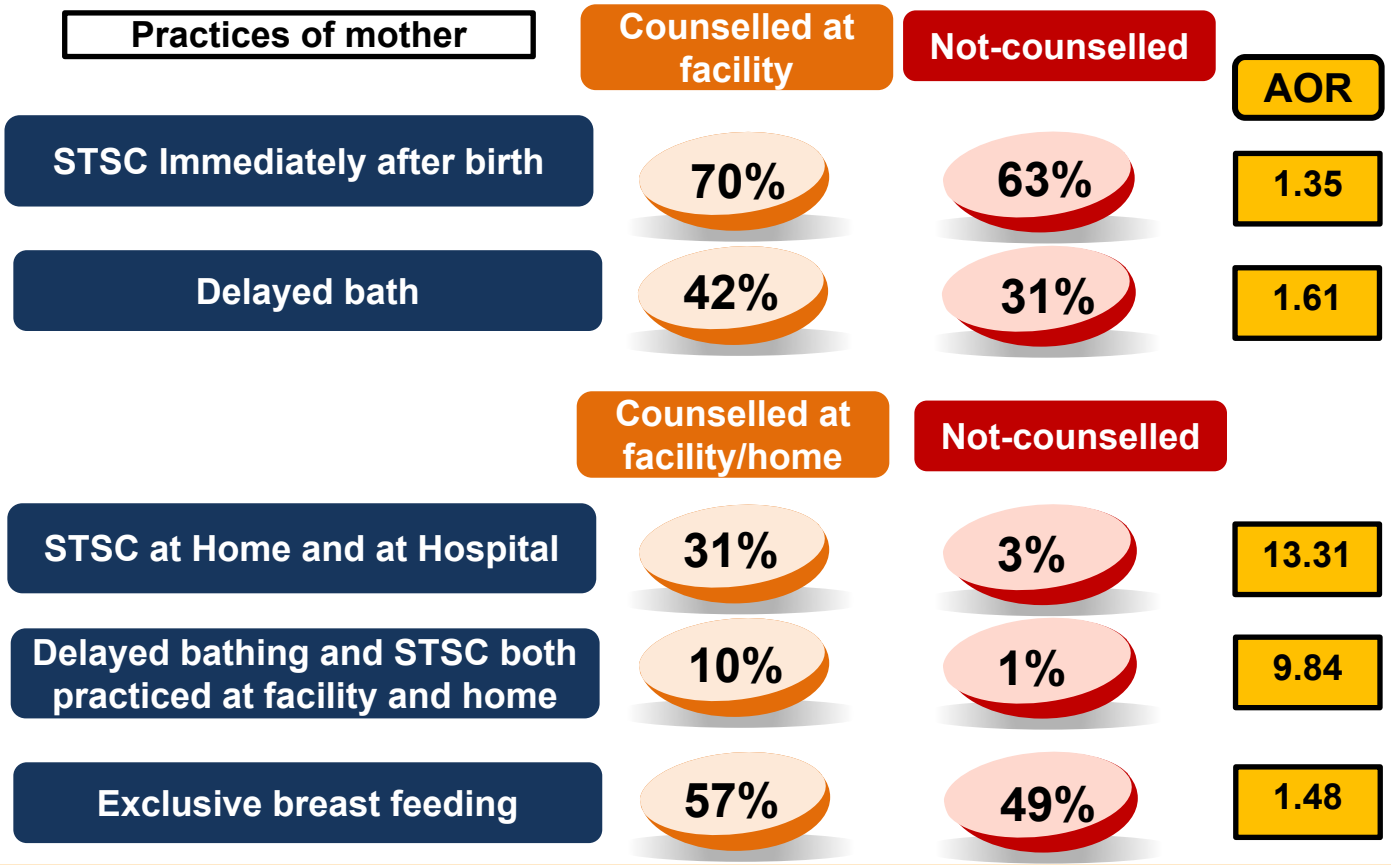
'Good' score: 5x improvement
'Average' score: 3x imporvement

Practices improved

- Skin-to-skin care:
  - At facility before discharge: 15% to 27%
  - At home after discharge: 10% to 23%
- Delayed bathing
  - 48 hours or more: 48% to 63%
  - 7 days or more: 10% to 27%
- Timely initiation of BF: 65% to 80%



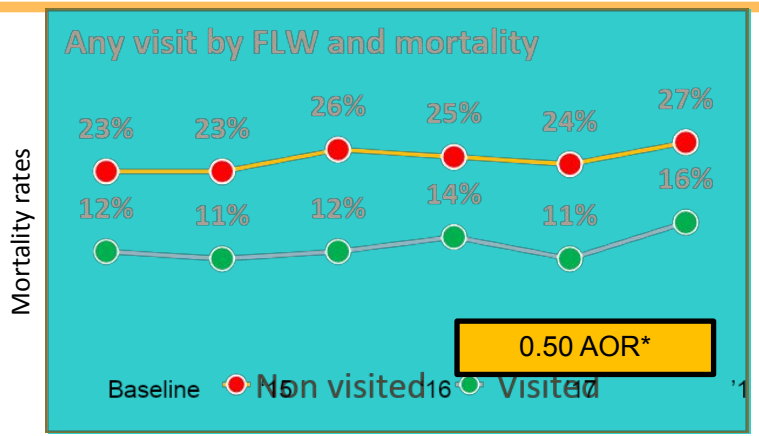
Families counselled in hospital more likely to practice additional care
Families counselled in hospital or home or both were even more likely to practice

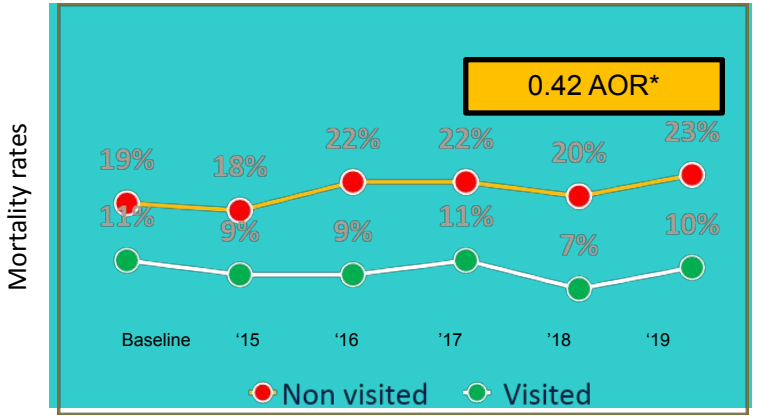


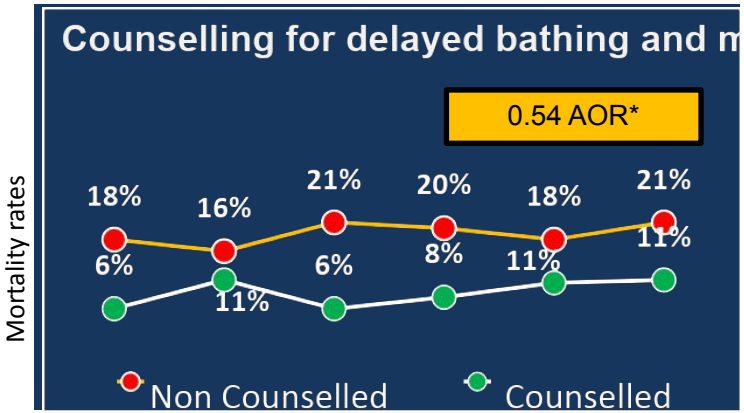
*Adjusted for gender, religion, caste, mother age, mother's education, father occupation and wealth index P< 0.05

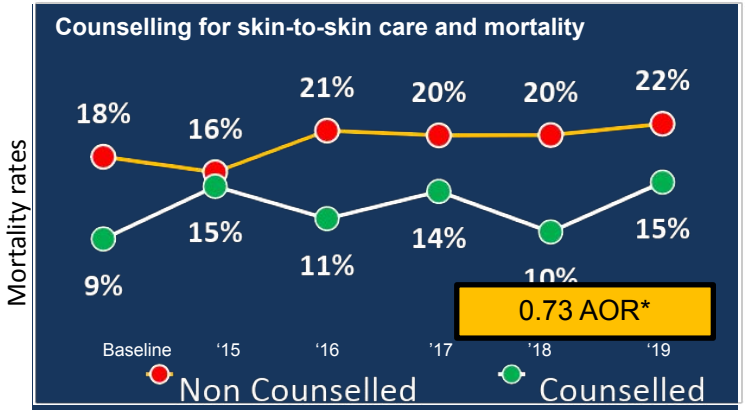
COVERAGE AND OUTCOMES OF INTERVENTION COMPONENTS

Home visits and counselling strongly associated with better survival



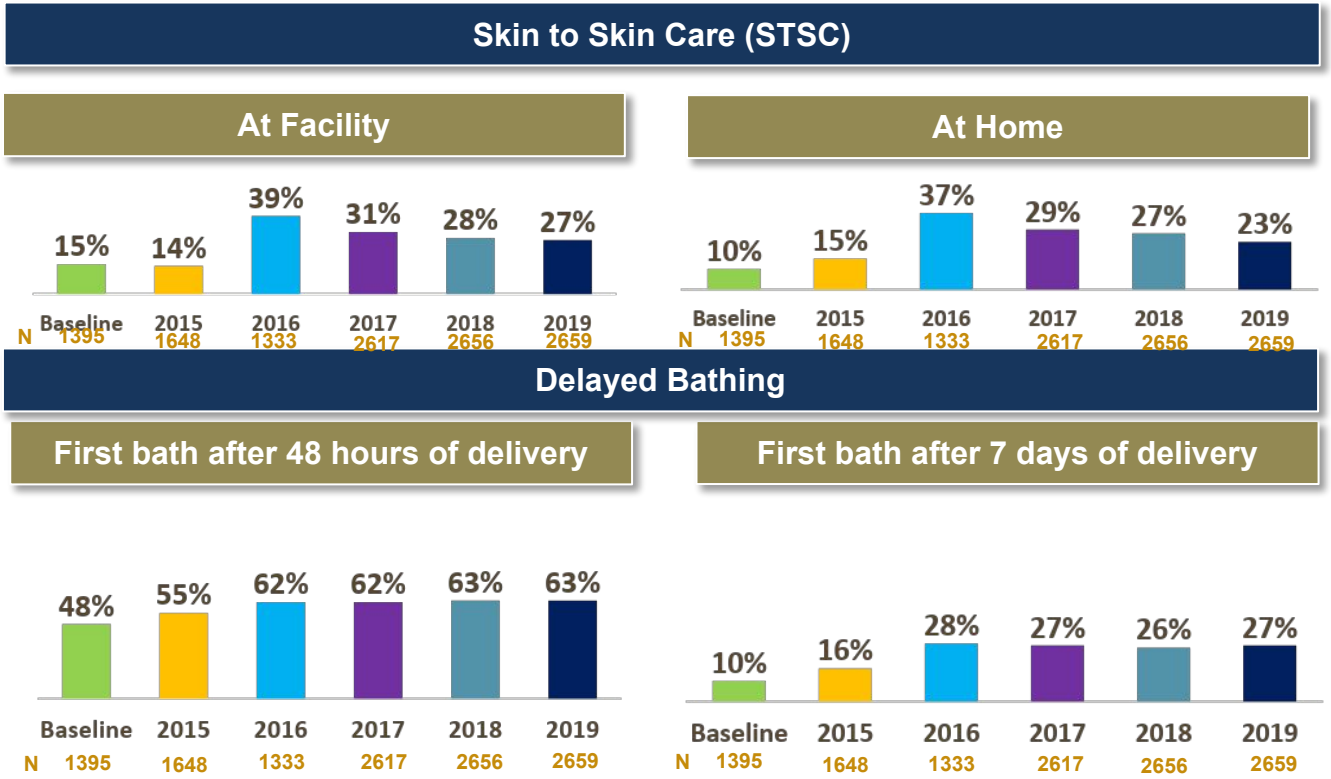




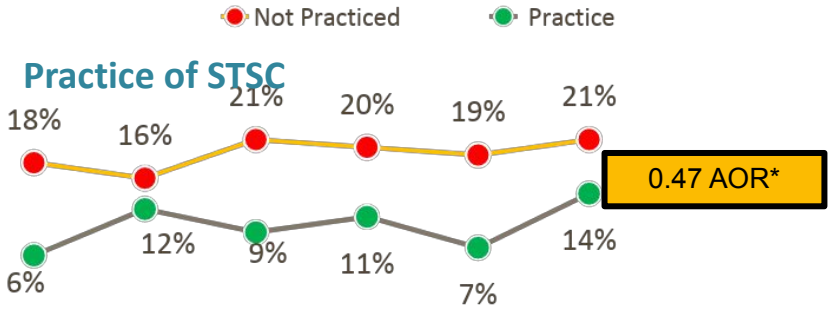


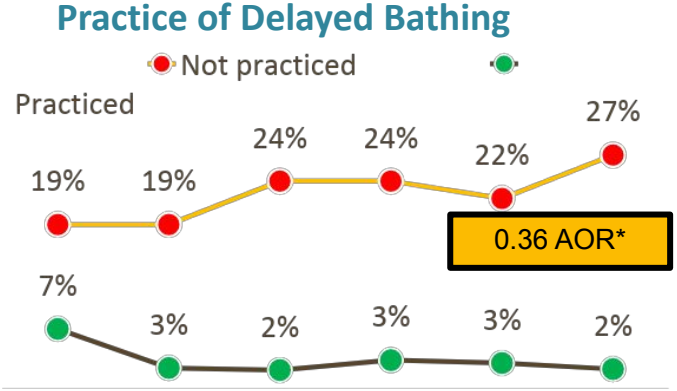
*Adjusted for gender, religion, caste, mother age, mother's education, father occupation and wealth index P< 0.05, Bihar 2019

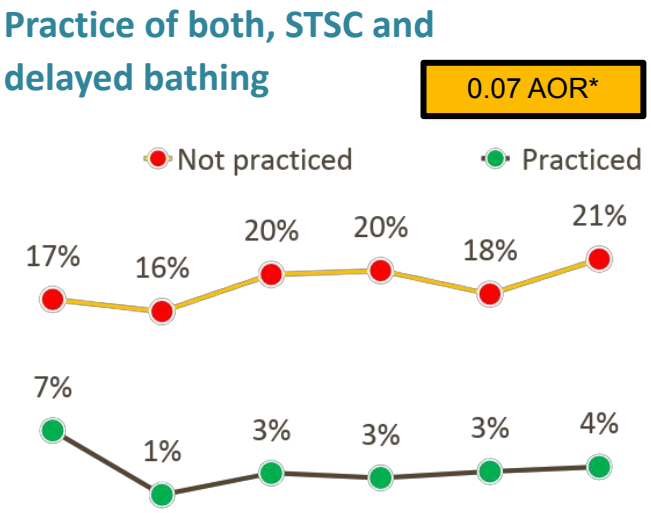
Coverage of caring practices increased substantially from the baseline



Caring practices are strongly associated with better survival





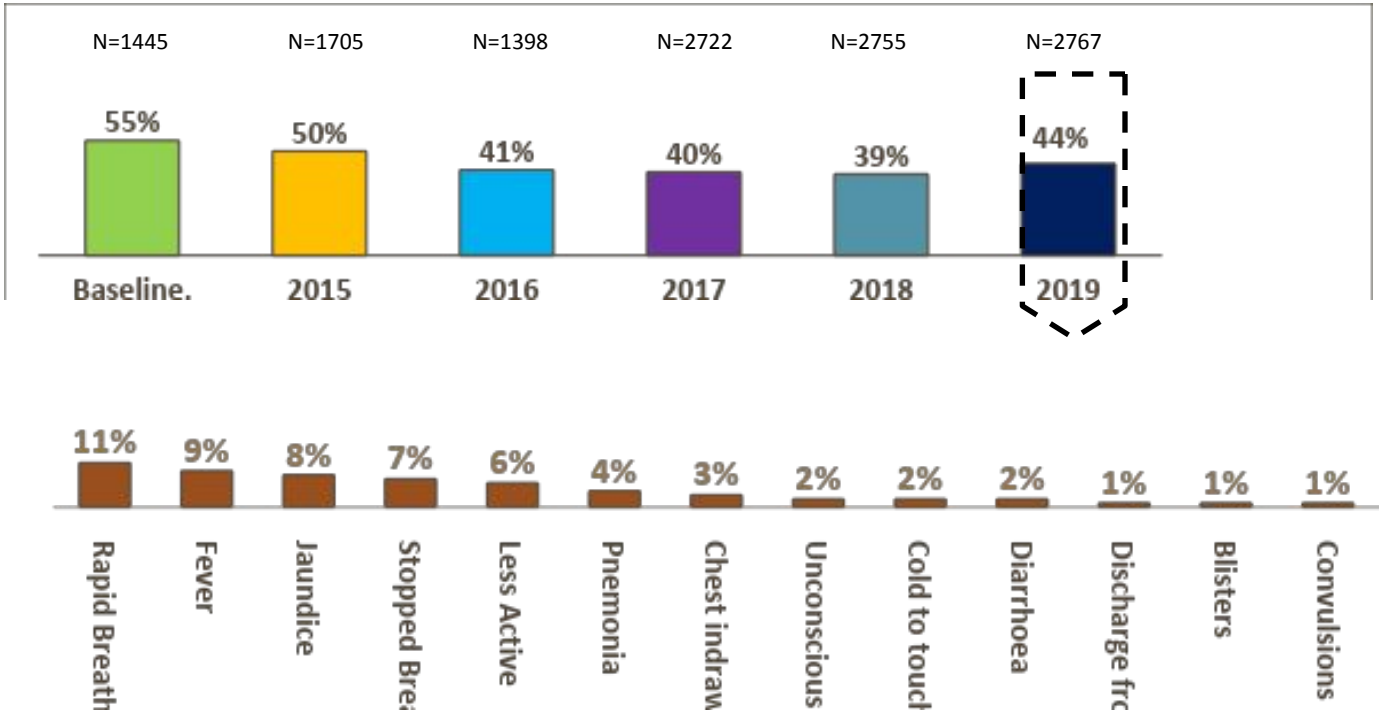


Impact of Early Initiation of Breastfeeding: A cautionary note

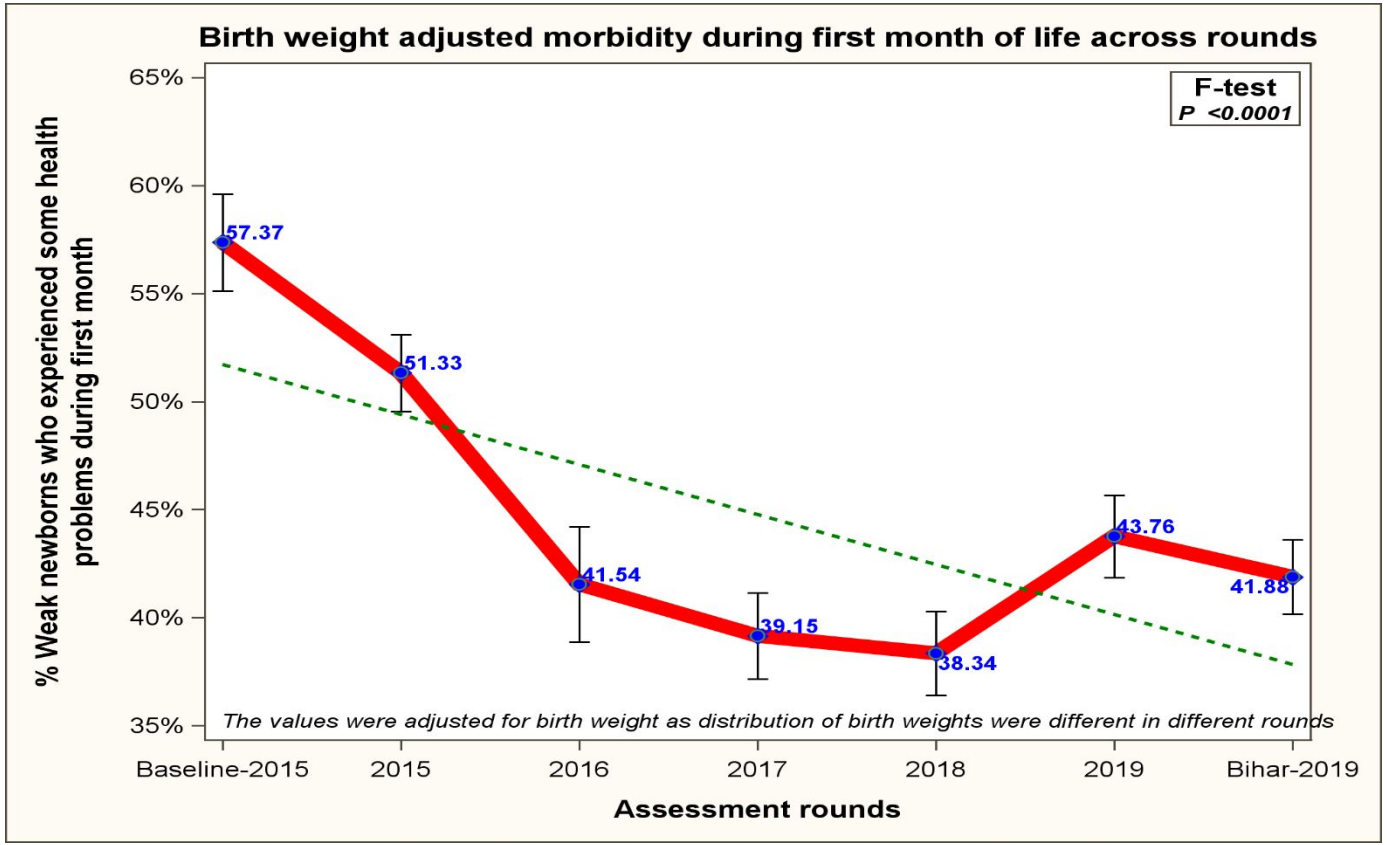
- **What these assessments found:**
  - ***Early breastfeeding (first breastfed within an hour after birth) is significantly associated with higher mortality in this group (≤ 2000 g)***
  - The lesser the birthweight, the greater the mortality difference between those breastfed or not breastfed early.
  - This effect is limited to the 0-2 d period.
- **Implications:**
  - This negative impact is most likely due to enthusiastic attempts to feed very small babies who are unable to suck and swallow well.
  - While reliable gestational age data is not available in these assessments, it is likely that the babies most at risk are those born prematurely, at less than 34 weeks.
  - Since sucking and swallowing reflexes are poorly developed in these babies, feeding them without adequate care is probably leading to death by choking and aspiration.
  - Such babies die within the first few days, which explains why the increased death is limited to 0-2 days. Babies surviving beyond this age probably have well-developed sucking and swallowing reflexes are able to feed adequately.
  - Programmatically, it ***re-emphasizes the need to observe the first few feeds carefully among WNB, and avoid feeding further if the baby is not taking feeds well. Such babies need to be referred to the SNCU or equivalent hospitals***. This is already mentioned in the state guidelines and must be carefully followed.

CHANGES IN OVERALL OUTCOMES (MORBIDITY AND MORTALITY)

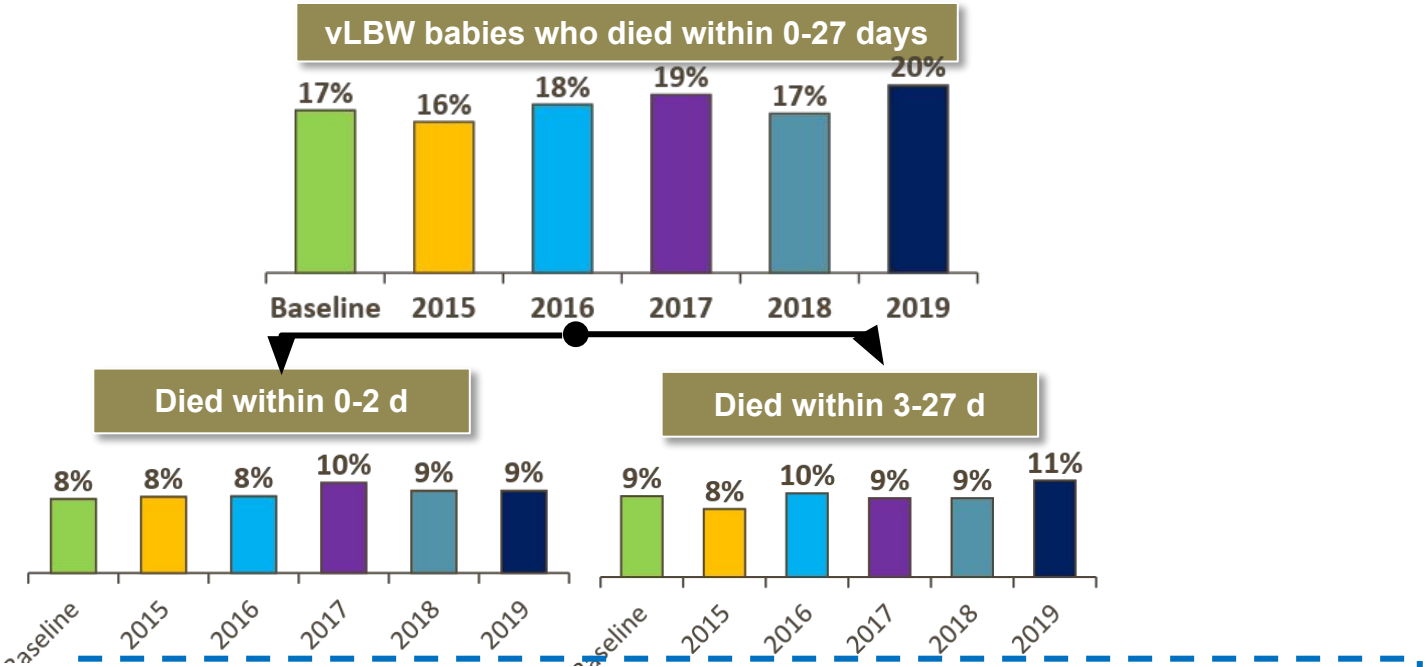
Incidence of mother-reported illnesses, including PSBI, reduced substantially, but increased again during last year



Birthweight adjusted morbidity reduced over time



Unadjusted mortality rates have remained constant



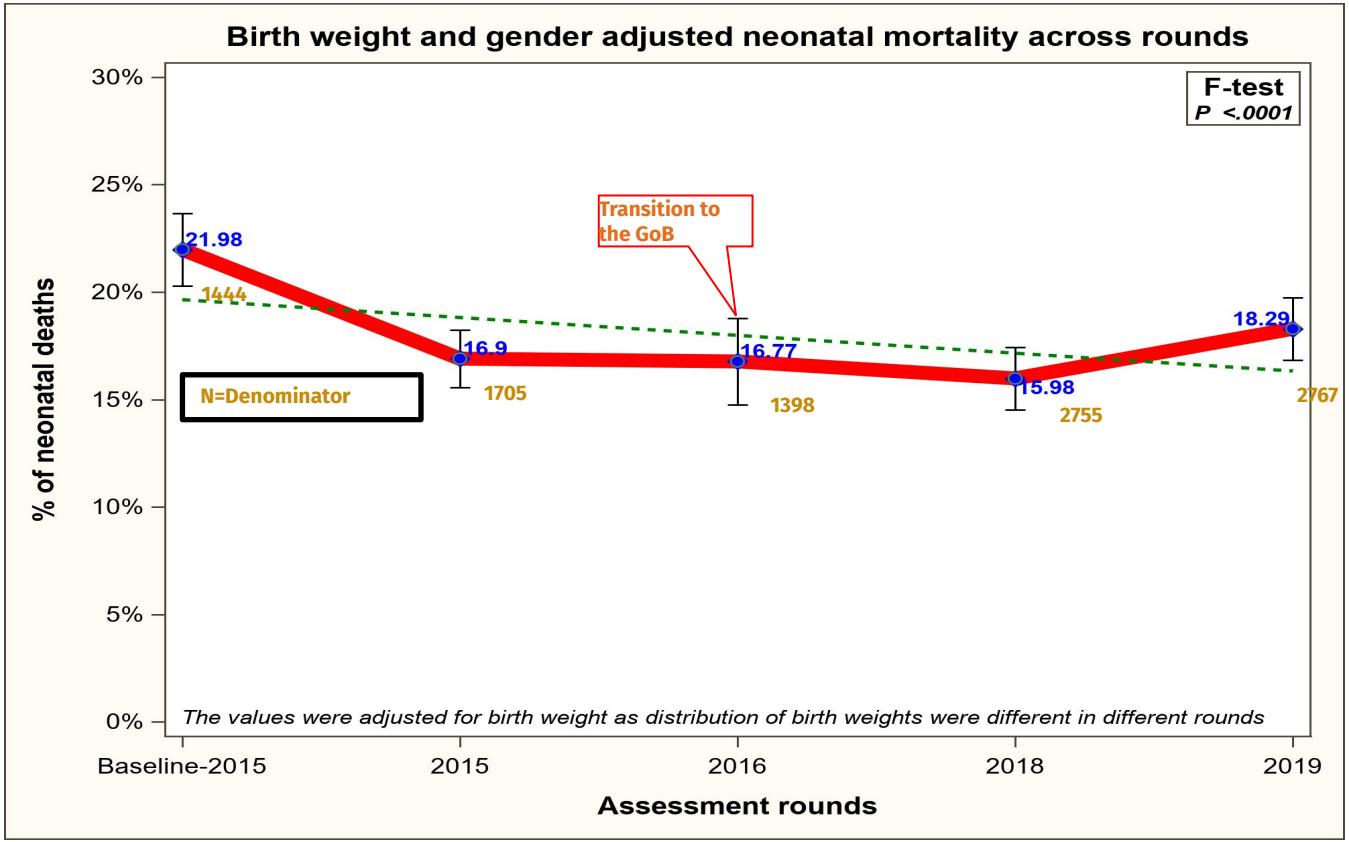
Neonatal mortality varies widely by gender and birth weight, and birth weights were differently distributed in different rounds. Thus, in order to get a reliable estimate of mortality, variation in birth weight across rounds needs to be adjusted for.

Round	R1 Baseline	R2 2015	R3 2016	R4 2017	R5 2018	R6 2019
N	1445	1705	1398	2722	2755	2767

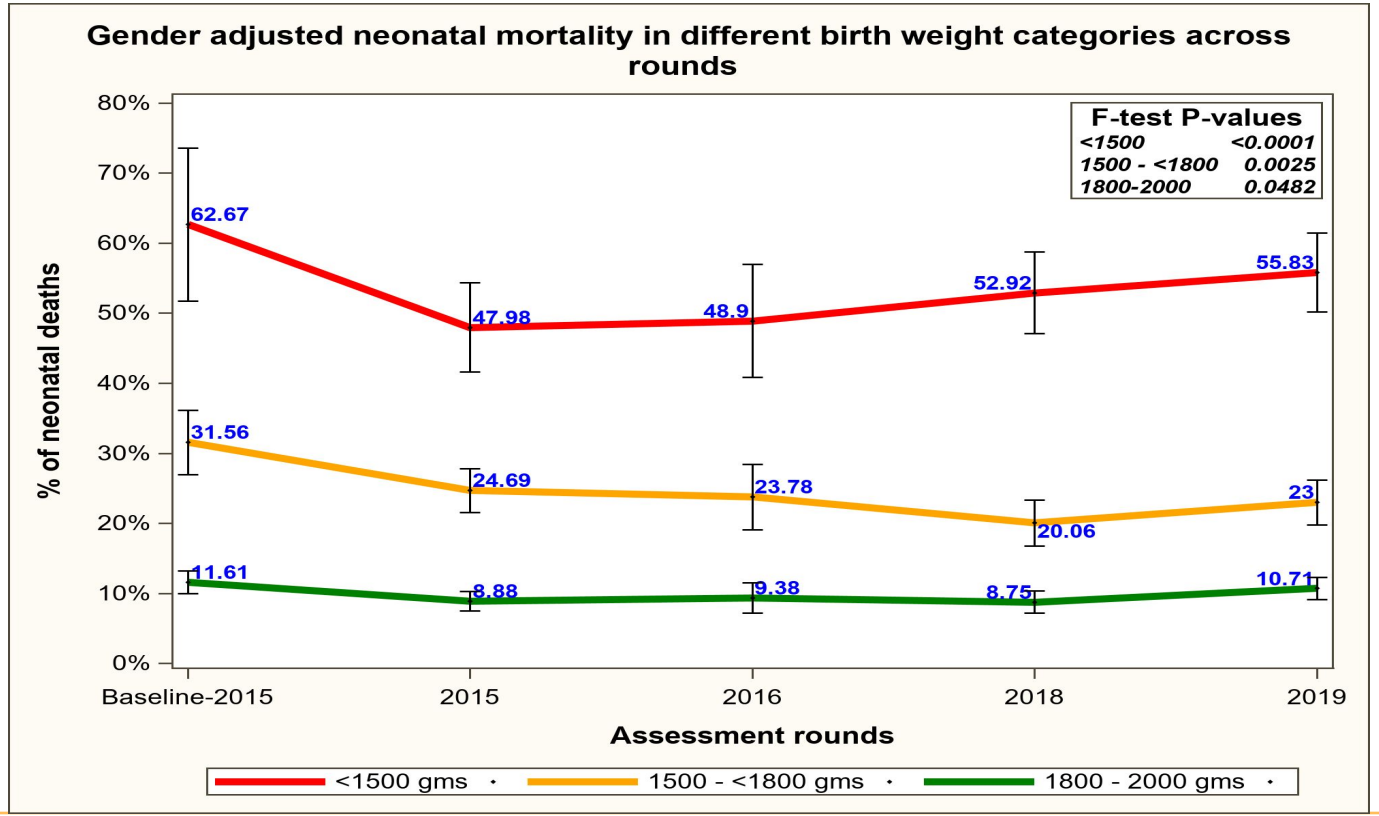
1 - vLBW implies babies with birth weight <= 2000 gms
Caveat: Data not collected over 12 months, hence seasonal trends not identifiable

Birthweight and gender adjusted mortality has declined since baseline

The crude mortality estimates cannot be compared across rounds as the distribution of birth weight and gender composition of LBW newborns varied across rounds. Thus, using generalized linear regression, the crude mortality estimates were adjusted based on combined birth weight distribution. The adjusted estimates presented are Least Squared Means'. The downwards and statistically significant slope of the regression line suggests an overall declining tend in neonatal mortality across rounds, despite an increase noted in last year.

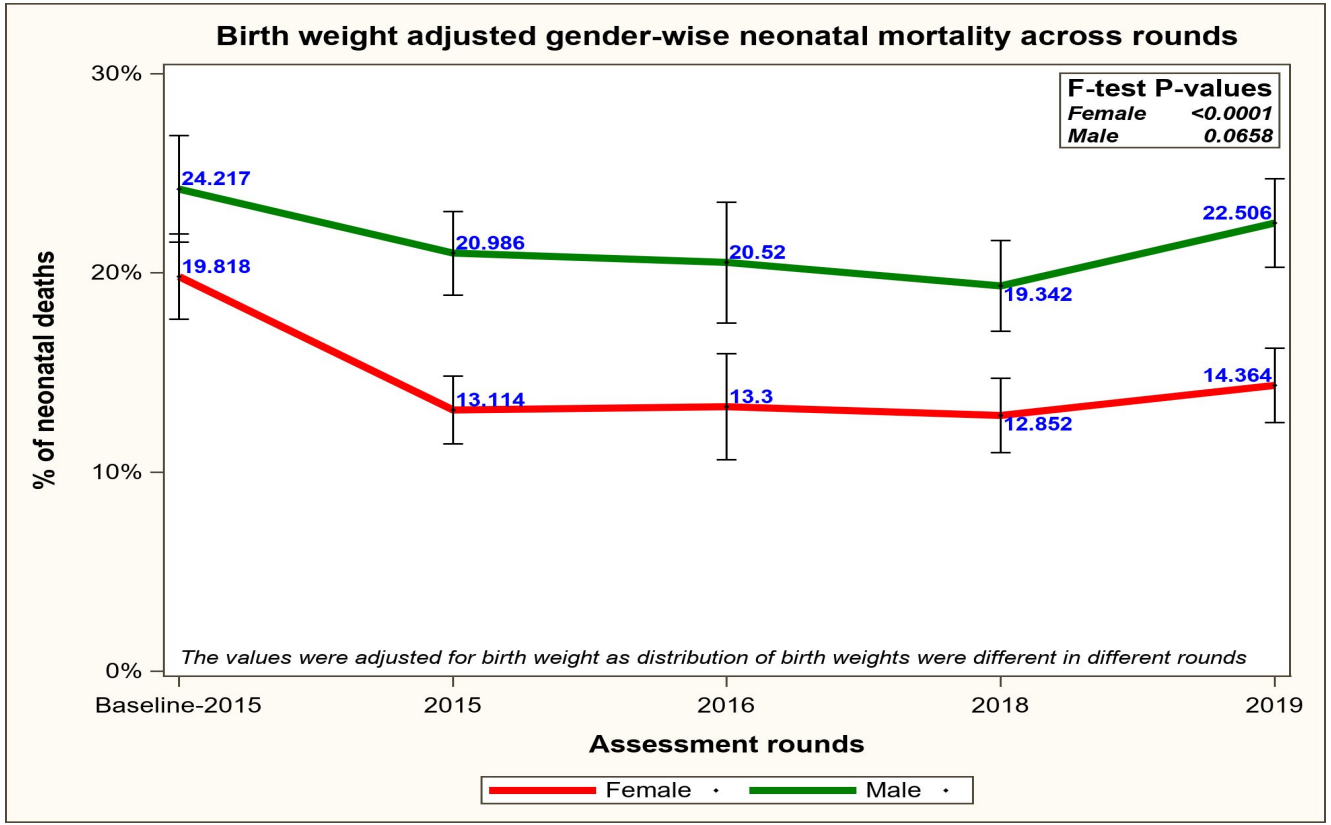


The biggest mortality gains are in the middle birthweight group (1500-1800 gm): This is similar to what was observed in SEARCH studies



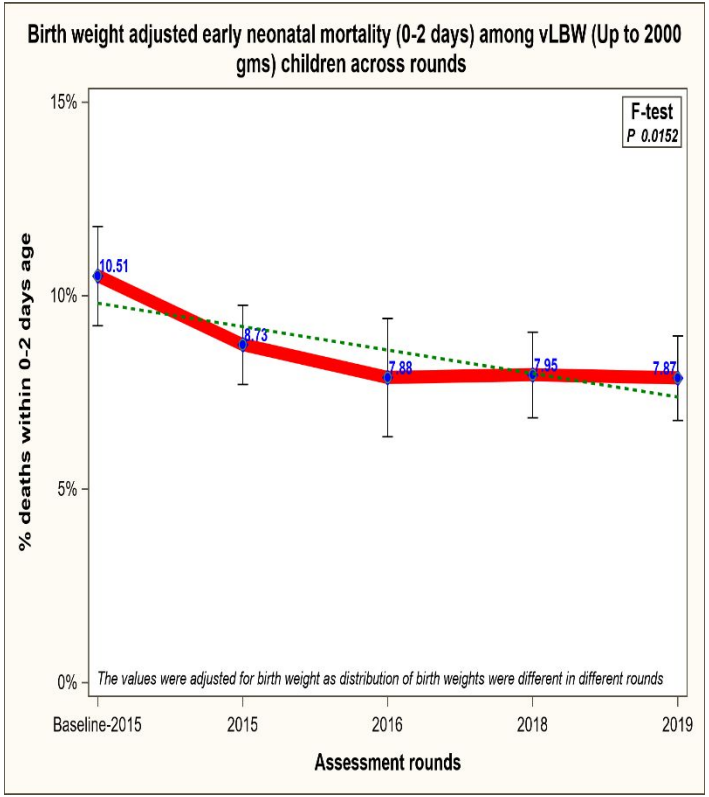
In 2019, a WNB girl is around 50% more likely to survive than a WNB boy. The main mortality gains are also among WNB girls

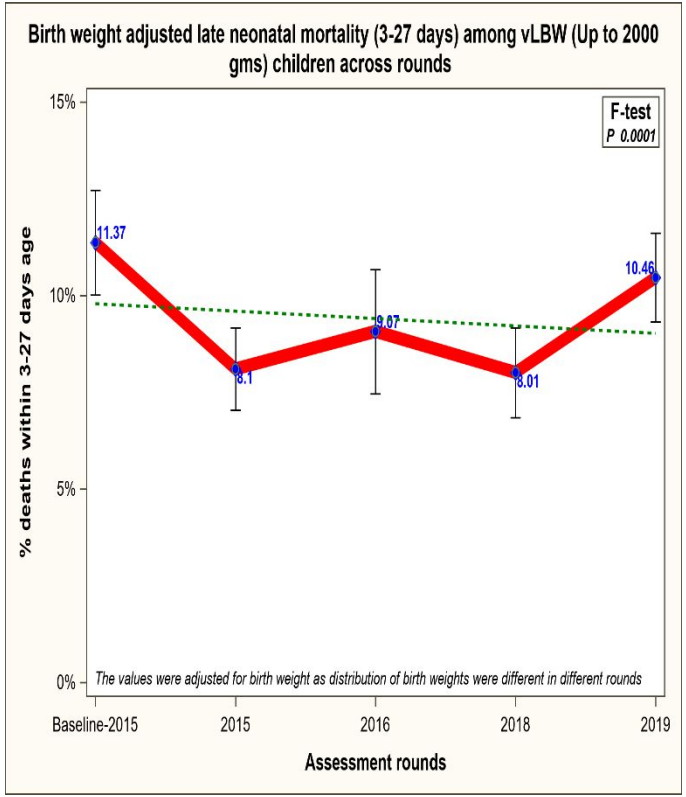
The distribution of gender varied across rounds. Thus, birth-weight adjusted mortality estimates were presented for each gender.



0-2 days mortality reduced more consistently than 3-27 days mortality

Both 0-2 days and 3-27 days neonatal mortality show a significantly declining trend across rounds. However, the declining trend in early neonatal mortality is more prominent as it has not increased substantially in the post-handover period. However, late neonatal mortality has gone into an upward spiral post-2017.





Summary : Improvements from baseline (2015) to 2019 and association of mortality with intervention components

IDENTIFICATION

- vLBW children identification increased from 2% to 4% after the initial phase of intervention and then has stabilised at around 3.4% - still an improvement of 70% over baseline
- Practice of rounding-up error in birth weight as 2000 gm declined from 69% to 24%

REACH OF INTERVENTION

- Informing the mothers of identified weak newborns (that the child was of low birth weight) increased from 79% at baseline to 84%
- Counselling on additional care also improved – mostly at facilities, not much at baseline
- The above gains were achieved despite significant increase in workload as the number of identified vLBW newborns went up

QUALITY OF COUNSELLING

- Advice on thermal care-advices on both delayed bathing (3% at baseline to 15% in 2019) and KMC (7% to 19%) before discharge from facility increased substantially
- Similar advices from outreach FLWs showed lesser improvement
- Counselling on EBF showed improvement at facilities but not much in the outreach

PRACTICES OF MOTHER

- Practice of STSC in 2019 (in facility as well as home) was higher than the baseline – 27% from 15% at facility and 23% from 10% after returning home
- Delayed bathing (after 7d) improved from baseline (10% to 27%)
- 78% mothers reported early initiation of breastfeeding as against 65% at baseline

CONTRIBUTION OF INTERVENTION COMPONENTS

- ✔ Among telephonically followed up, odds of death was **45%** lower
- ✔ At least 1 visit by FLW, reduced odds of neonatal death by **50%**

- ✔ Counselling for Thermal care, Early Breastfeeding and Cord care were impactful – reduced the odds of neonatal death by about **50%**

- ✔ Odds of neonatal death was **93%** lower among those who practiced Delayed bathing, STSC at birth & followed it at home

Birth-weight adjusted neonatal morbidity: Reduced by about 15% from the baseline (2015) to 2019.
Birth-weight adjusted neonatal mortality: Reduced by about 15% from the baseline (2015) to 2019.

Summary of the Intervention

- The WNB focus in Bihar derives from existing national guidelines for newborn care at home and in facilities.
- The guidelines for identification and care of ‘high-risk’ babies in ASHA Module 7 have been applied to the facility-to-home continuum in the state issued guidelines.
- Implementation on the ground has been much more intense for non-teaching government hospital births than for babies born elsewhere. Around 60% of all births in rural Bihar takes place in government facilities, most of them in non-teaching facilities. ***Around 1.8 million institutional deliveries are thus directly impacted by the interventions annually*.**
- Interventions consisted mainly of supportive care provided by the family, guided by counselling by hospital nurses and ASHAs, with oversight by ANMs.
- After initial intensive co-facilitation for about one year, the TSU withdrew to more distant facilitation roles, while implementation continued through staff in delivery points, ANMs and ASHAs.
- The equivalent interventions for babies delivered at home or in private facilities are not covered by these assessments.

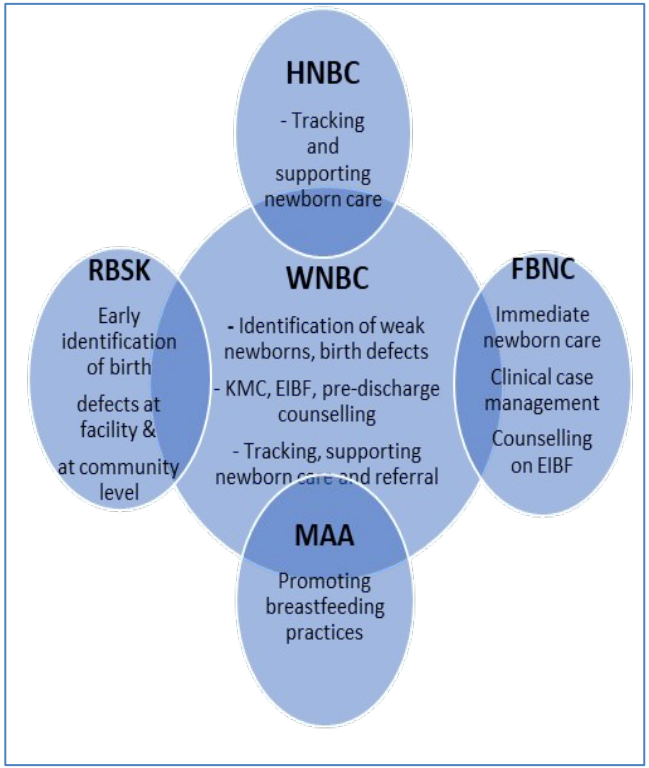
Summary of Implications

- In the SEARCH studies, 67.5% of all NMR at the baseline came from the babies with birthweight < 2000 gm, and a small additional portion from preterm babies with higher birthweight.
- The mortality impact in Bihar appears mainly in the 1500-1800 gm group of babies. This is very similar to what was observed in the SEARCH studies: most of the ~80% mortality reduction in a similar weight / gestational age group came from supportive care (similar to that implemented in Bihar), not from antibiotics.
- The major points of program interest in the presented assessments are the *strong and consistent positive associations* between several key components of the intervention (home visits, counselling about additional care) and caring practices by the family, and between practices and mortality.
- Overall *coverage (reach) of these interventions increased substantially* from the baseline, thus likely spreading mortality impact widely. However, coverage is *still much less than universal*. Increasing this coverage should therefore be expected to provide further substantial mortality gains.
- The *mortality impact as measured is all-cause reduction within this group*, not just in the 'complications of prematurity' component of neonatal mortality.

MAINSTREAMING

Mainstreaming Weak Newborn Care

- **Integration:** WNBC protocols have the potential to be integrated with newborn care interventions- HBNC, FBNC, MAA and RBSK
- **Institutionalization:** WNBC can easily be institutionalised within the system and implemented through FLWs without upsetting the current operating structures and systems.
- **Strengthening:** By virtue of positioning of its components within the existing newborn care programmes, WNBC model strengthens and accelerates these programmes.
- **Addressing** systemic challenges that are barriers to the implementation of community-based newborn programmes:
  - lack of skilled personnel,
  - issues of logistics
  - weak supervision and monitoring systems



Costing

- The annual cost for printing various registers and formats is estimated around Rs. 23 lakhs for the entire state of Bihar.
- **No separate expenses** were incurred for training staff nurses and FLWs; they were trained during their routine meetings. Incentives for home visits by ASHAs were met through existing HBNC provisions.
- By utilising the existing resources efficiently, the WNBC model proves to be highly cost-effective, does not entail extra costs for the government, makes it **easy to replicate and sustained**.
- Detailed formats for line listing of weak newborns, counselling formats for ASHAs and reporting formats for health facilities developed can easily be integrated with the health MIS to **strengthen online monitoring and programmatic review** by the implementation agencies.
- Technical support costs could be met through existing or external agencies.

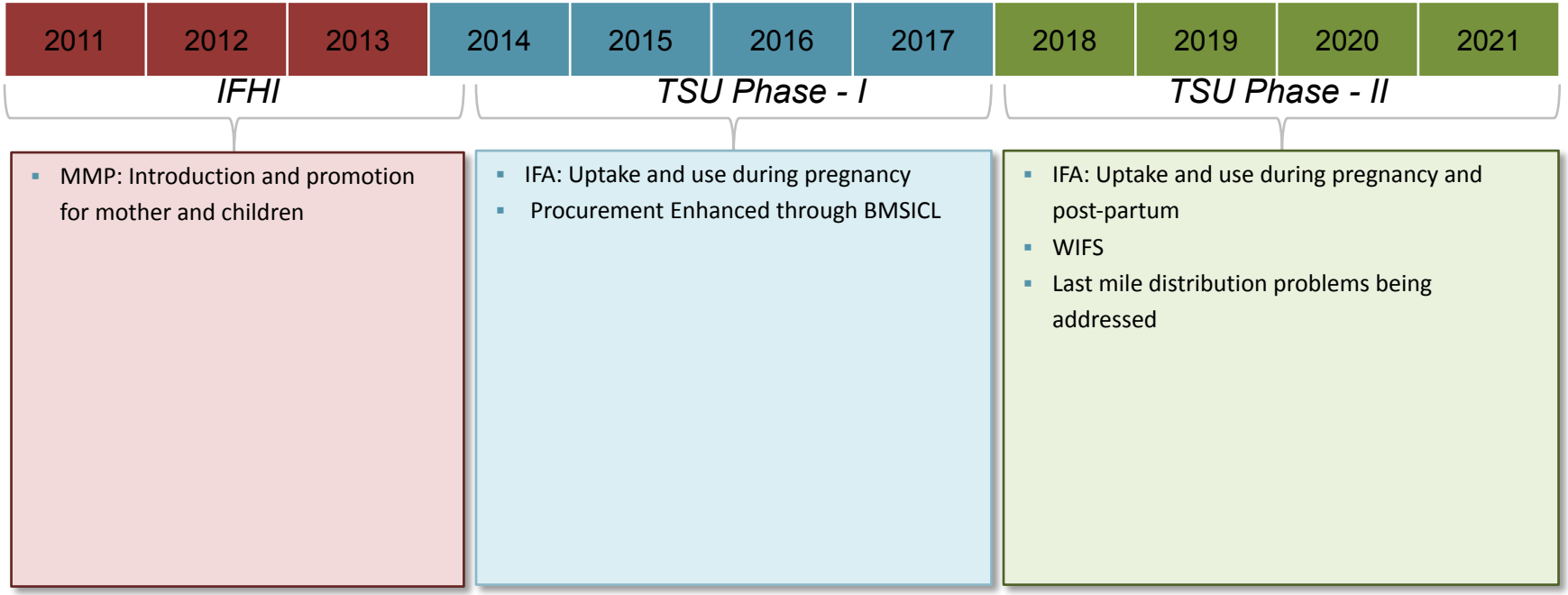
Lessons Learnt and Conclusions

- This collaborative effort has demonstrated a **simple and cost-effective intervention** that reduced neonatal deaths and morbidity by **strengthening capacities of FLWs (ASHAs in outreach and Staff Nurses/ANMs in labour rooms) to identify and aptly respond** to the immediate care needs of weak newborns.
- **Improved mechanisms** of reporting, mentoring and supportive supervision helped the FLWs to focus on delivering services and support equitably to all families through robust name-based tracking systems.
- WNBC is **highly amenable to scale-up** with **no extra cost through existing government programmes**.

Recommendations

- **Prioritize** preterm-lbw babies as they account for majority of all newborn deaths.
- **Adapt** evidence-based WNBC protocols for the care of preterm and or LBW babies born in facilities thus capitalizing on the rise in institutional deliveries**.**
- **Scale-up capacity building** to strengthen the counselling skills of FLWs as increased contact, improved counselling and message delivery by FLWs are likely to have contributed to changes in newborn care practices.
- **Support with MIS** appropriate to adapted protocol
- **Institutionalise the above** through focused technical assistance at district and sub-district levels.

Anemia


2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
IFHI
TSU Phase - I
TSU Phase - II
MMP: Introduction and promotion for mother and children
IFA: Uptake and use during pregnancy
Procurement Enhanced through BMSICL
IFA: Uptake and use during pregnancy and post-partum
WIFS
Last mile distribution problems being addressed

DOMAIN SPECIFIC LESSONS

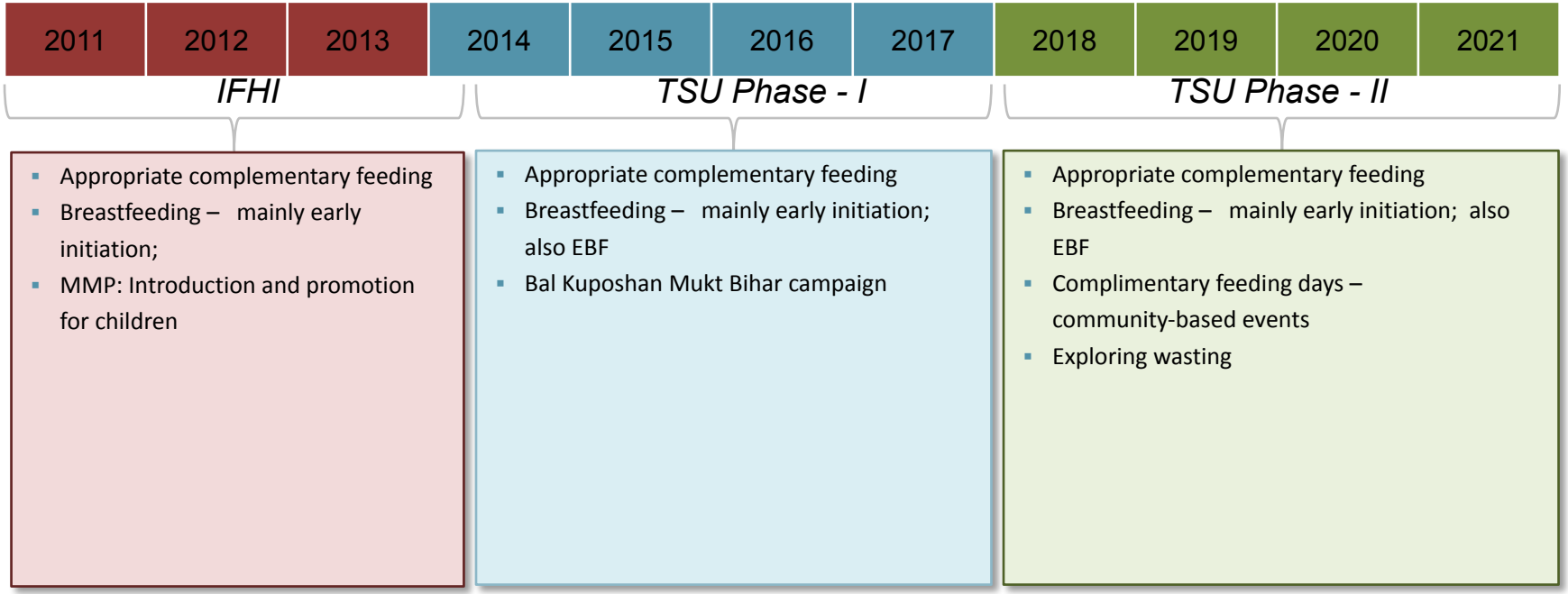
Anaemia

- Bihar has relatively lower level of anaemia in pregnancy (< 10% severe), but affects all groups, as elsewhere
- Life cycle approach in GoI guidelines for iron deficiency has enhanced efforts to tackle anaemia – especially WIFS, postpartum (24% consumed some IFA tab.**), in addition to antenatal supplementation
- Consumption of IFA in pregnancy has been close to 70% of tablets distributed (mean no. of IFA received during pregnancy increased from 41 tab. to 51 tab. and Consumption increased from 29 tab. to 37 tab. between 2015-20**)
- After long years of disruption in supplies, distribution of IFA has been increasing in last three years, with some disruption due to COVID

* Vulnerability Study CARE-BTSP-CML 2014-20

** Annual Household Survey CARE-BTSP-CML 2014-20

Nutrition


2011
2012
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2020
2021
IFHI
TSU Phase - I
TSU Phase - II
Appropriate complementary feeding
Breastfeeding – mainly early initiation;
MMP: Introduction and promotion for children
Appropriate complementary feeding
Breastfeeding – mainly early initiation; also EBF
Bal Kuposhan Mukt Bihar campaign
Appropriate complementary feeding
Breastfeeding – mainly early initiation; also EBF
Complimentary feeding days – community-based events
Exploring wasting

DOMAIN SPECIFIC LESSONS

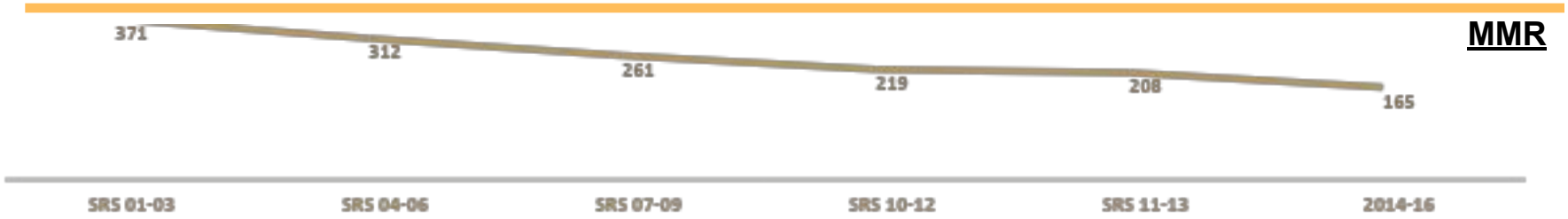
Stunting

- Major reduction could be seen from NFHS 4 to 5 (48.3% to 42.9%)
- Significant gains in sanitation (improved sanitation facility 21% to 46%#, and Handwashing has reached 60% in 2020*), but CF rates stay low (Timely Initiation of CF remained on an average at ~55% between 2018-20 and Dietary Diversity among 9-11m children remains ~ 19% between 2017-20*)
- Poshan Abhiyan made a promising start – will need stronger focus on a few interventions to get ICDS and Health programs to start accelerating
- Other GoI programs (HBYC, MAA, etc) have strong intent, but fall short on the 'how' part of it.

NFHS-4 & NFHS 5

** Annual Household Survey CARE-BTSP-CML 2014-20

Maternal Health



2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
IFHI			*TSU Phase - I*				*TSU Phase - II*			

- Quality management of routine deliveries at PHCs
- PHC-driven facilitative process to build BEmOC capabilities
- Referral package pilot - tailored for (a) PHCs, and (b) Home deliveries or problems identified at post partum evaluation

- Quality Management of deliveries
- Nurse Mentoring (AMANAT)
- Additional focus on PPH and C-sections

- Quality Management of deliveries
- Nurse Mentoring (AMANAT Jyoti)
- Additional focus on PPH and C-sections
- Additional focus on blood availability

DOMAIN SPECIFIC LESSONS

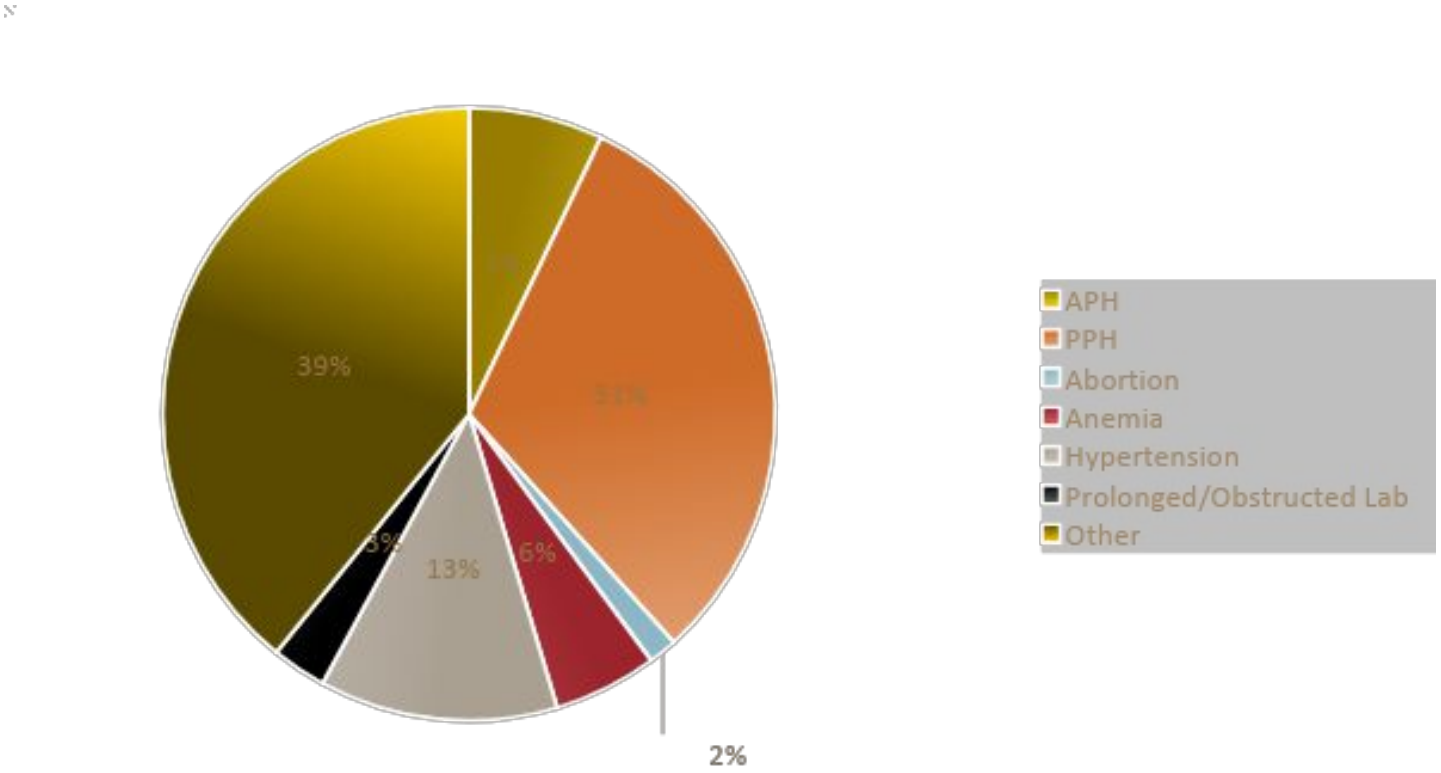
Maternal Mortality

- MMR is falling (<150) with probable significant contribution from AMANAT and private sector
- PPH is a dominant cause; mortality from puerperal sepsis is low and abortion yet an unknown. MDR is picking up but not uniform in capturing deaths.
- **Barriers**: Lack of CEmONC access is primary barrier (Unsupported doctors & nurses in CEmONC situation)
    - Lack of serious policy/program focus on all clinical emergencies
    - Lack of oversight on intrapartum care in labour rooms
- Delay in reaching the right hospital and getting definitive treatment are common
- Reforms in blood banking (27 DH & 10 Medical colleges have functional Blood banks covering all districts of Bihar*) and referral transportation have brought these services to the threshold of effectiveness (98% of L2 facilities & all L3 facilities have ambulances; 886 ambulances present at 552 delivery points#)
- LaQshya boosted formal attention to QI, needs thoughtful implementation to prevent mechanisation

*Blood bank Study CARE-BTSP-CML 2020
#Facility Assessment Study CARE-BTSP-CML 2019

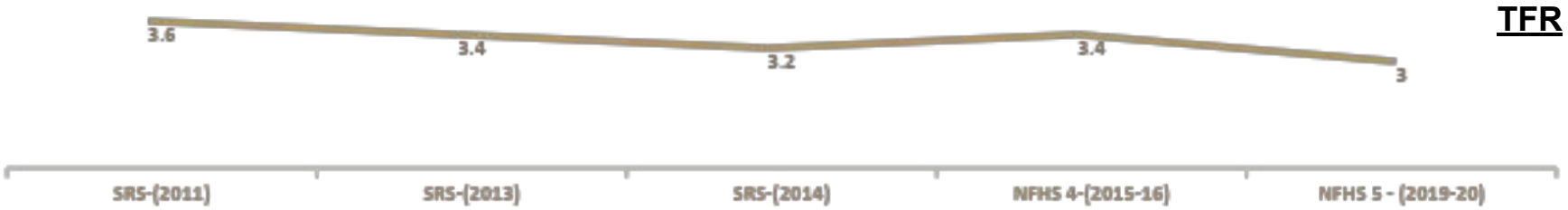
** Annual Household Survey CARE-BTSP-CML 2014-20

WHY DO PREGNANT WOMEN DIE IN BIHAR? (N=547)



* Maternal Mortality Study CARE-BTSP-CML 2018

Family Planning



2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
IFHI			*TSU Phase - I*				*TSU Phase - II*			

- Mobile IUCD Vans
- Leverage private sector pharmacies and providers to drive use of injectables
- Improved uptake of birth spacing methods - test use of incentives
- Introduce and scale up new contraceptive technologies – longer term priority

- Partner with Engender Health for the PMU
- Quality Improvement in TLs
- Improved Quality of Fixed Day services

- Improved Quality of Fixed Day services
- Focus on spacing methods – Pilot for 0-1 parity couples
- Injectable (Antara/Chayya rollout)
- Family Planning Logistics Management Information Systems (FPLMIS) rollout

DOMAIN SPECIFIC LESSONS

Family Planning

- Major reduction in TFR from NFHS 4 to 5 (3.4 to 3), accompanied by improvements in mCPR.

Ground Level

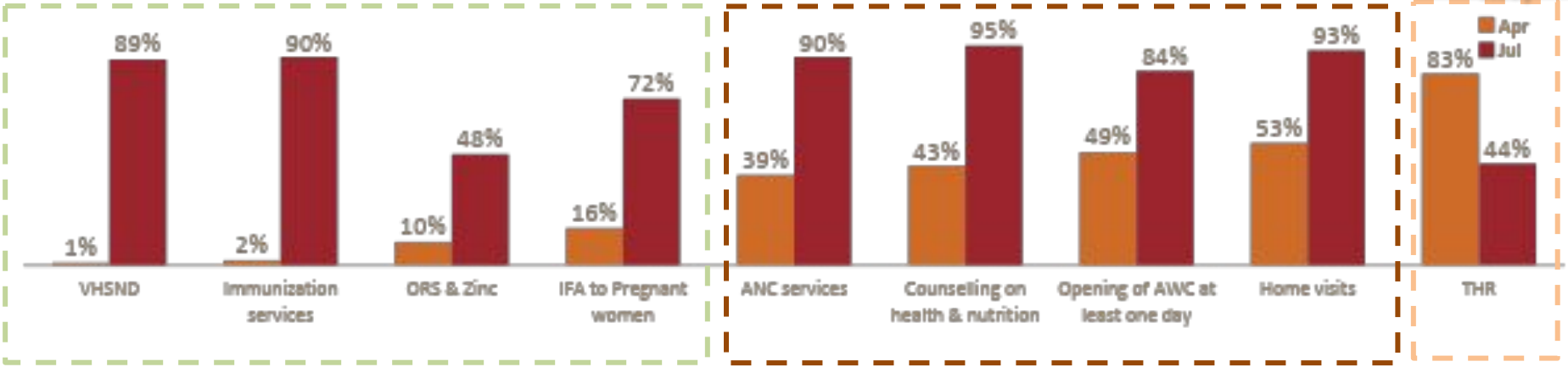
- There has been a steady focus on improving access to contraception (45 facilities had fixed day services, PPIUCD and lately Antara)
- Studies have shown:
  - Surprisingly significant spacing between consecutive births (24 months [median] in 2016 as well as 2018*)
  - Mistrust of modern contraceptives among young couples (most users prefer traditional methods- 60% of women aged 15-19 y *)
  - Reduced but persistent son preference (number of preferred male children reduced between 2016-18 from median 2 and mean 1.6 to median 1 and mean 1.5)
  - Dependence of permanent methods (Female Sterilization around 77% among users of any FP methods)
  - These appear to be largely deliberate, thought-out choices by young couples who take their own decisions, much less influenced by the older generation than generally presumed.

* Currently Married Women of Reproductive Age Survey CARE-BTSP-CML 2016,2018 , # FP fortnight Study Jan-June'20

Response to COVID-19

RMNCH Services affected during lockdown (Apr) and resumption in July*

Telephonic FLW study

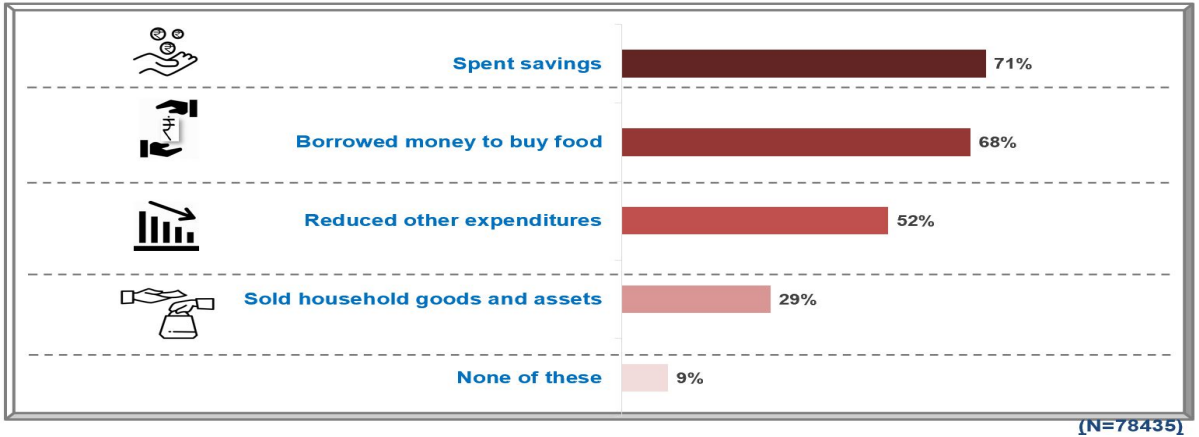


Services affected the most during April

Services marginally provided during April

High service coverage

Coping with COVID – Mode of coping by families for daily expenses during covid-19#



Telephonic FLW study

Immunization services

Disrupted in April (2%)& reached 87% in July'20

N = 66

- 34 (52%) **reminded** (home visit > phone call)
- 17 (26%) teamed with other FLW to help in **reaching venue**
- 14 (21%) Couldn't help much

Adaptations to conduct VHSND

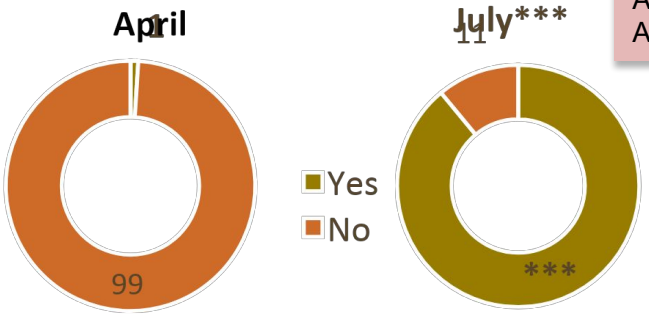
- By maintaining **physical distance** (76%)
- By ensuring **self protection** (56%)
- Organising
  - in separate groups/timings (8-10%)
  - As usual (21%)

N =2408

Engagement in VHSND

Among all (2673)

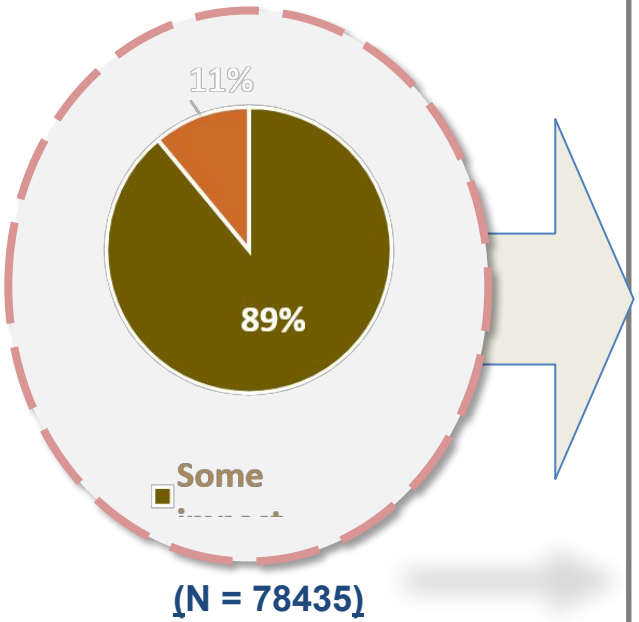
ANM ~95%
ASHA ~89%
AWW~86%



***Differences were statistically significant assuming α=0.05

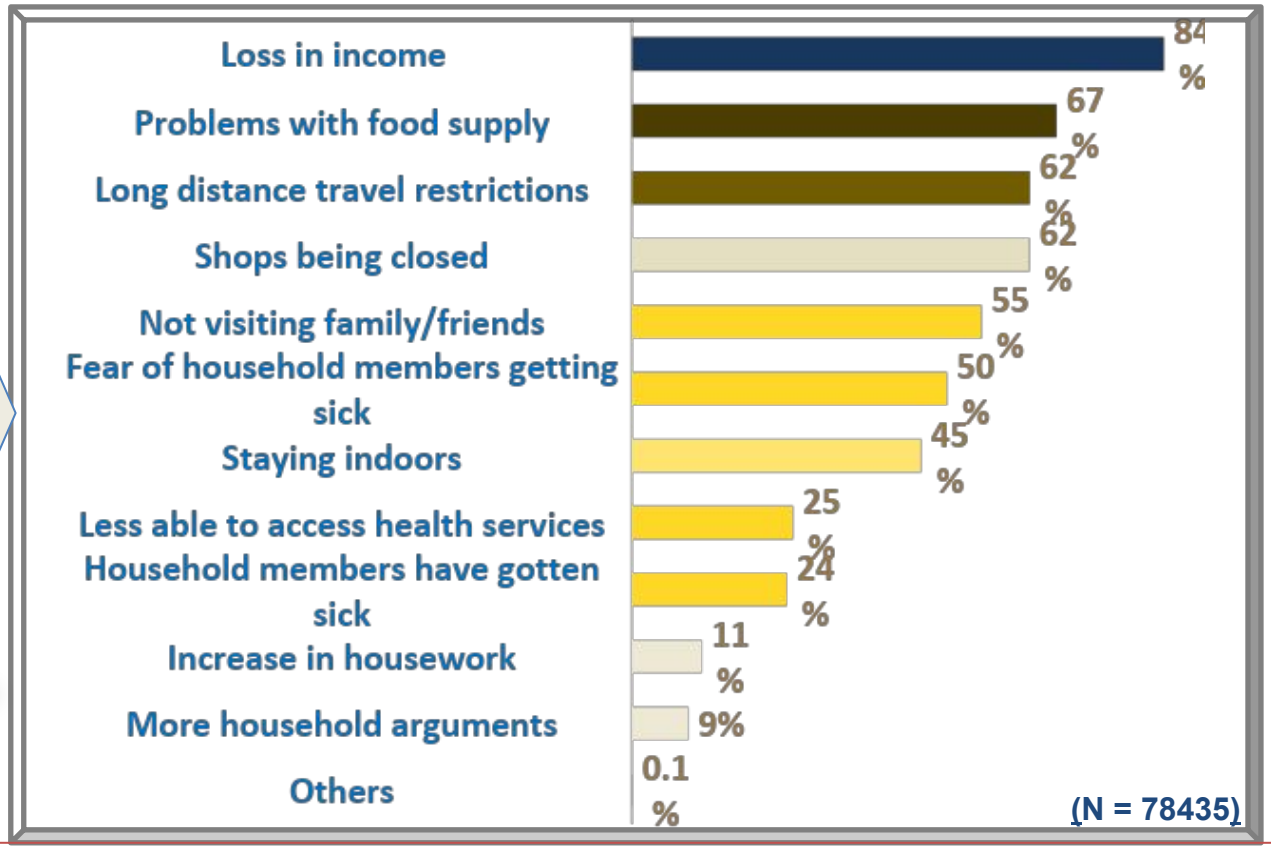
Impact of COVID

Household Survey



(N = 78435)

Impact of COVID-19

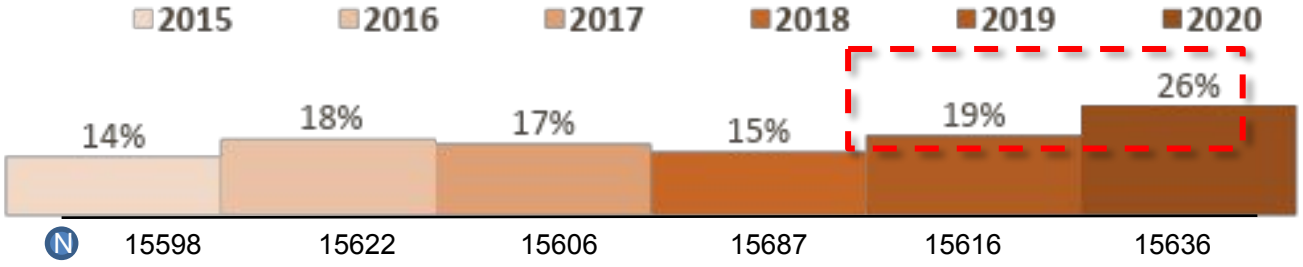


Food insecurity: Increased

Household Survey

Food insecurity* during the previous 12 months among families

9-11 m



Food Insecurity in the last one month

13 %

Due to lack of resources ate food which they didn't wanted to

- Rarely/Sometimes — 22%
- Often — 3%

Decreased meal frequency due to unavailability of food

- Rarely/Sometimes — 12%
- Often — 1%

Slept hungry due to lack of food

- Rarely/Sometimes — 8 %
- Often — <1 %

N = 15687

2020-R12-Sep-Nov'20

*Some family members had to cut the size of meal/skip meal because of lack of availability of food/money

Household Survey

Mothers in Households where any member suffered from COVID were

More likely to be…

Visited by FLWs

- ≥2 times During last trimester — 132% ↑ (AOR = 2.32)
- Anytime during last trimester — 36% ↑ (AOR = 1.36)
- Anytime during pregnancy — 31% ↑ (AOR = 1.31)
- Within 24hrs after delivery — 18% ↑ (AOR = 1.18)
- Within 3 months from delivery — 14% ↑ (AOR = 1.14)

Advised by FLWs

- To wear mask during breast-feeding– if having COVI — ~4 times ↑ (AOR = 5.06)
- Anytime during pregnancy — 46% ↑ (AOR = 1.46)

Practicing

- Initiation of complementary feeding (6 to 8m) — 49% ↑ (AOR = 1.49)
- Full immunization — 46% ↑ (AOR = 1.46)

Less likely to be…

Feeding babies with

- Exclusive breastfeeding — 60% ↓ (AOR = 0.40)
- Minimum dietary diversity — 43% ↓ (AOR = 0.57) (6 to 8m); 34% ↓ (AOR = 0.66) (9 to 11m)
- Minimum acceptable diet — 38% ↓ (AOR = 0.62) (6 to 8m); 34% ↓ (AOR = 0.66) (9 to 11m)

AOR = Adjusted (for socio-demographic factors) Odds Ratios statistically significant [p-value = ≤0.05]

CHOICES IN THE IMPLEMENTATION STRATEGY

LAST MILE EFFECTIVENESS STRATEGIES

STRATEGIES

- Direct ‘horizontal’ facilitation (IFHI) vs top-down ‘vertical’ (TSU)
- As per guidelines Vs Despite/Beyond guidelines – almost always went beyond, at times against
- First level hospitals Vs District Hospitals (DH) - – targeted CEmONC in DH
- Doctors vs ANMs vs MAMTAS - chose to work with ANMs
- Institutional birth vs quality of intrapartum care – focused on the latter until lately
- Tweak tools vs invent tools – mostly the latter
- Low focus on ANC, growth monitoring (~15-20% of children aged 3-23m were weighed*) , THR (10% of pregnant women received THR for at least 3 months, <5% women/children received complete THR*)

SUPERVISION AND MONITORING

STRATEGIES

ASHA vs AWW vs ASHA + AWW – chose the latter, with ANMs as supervisors (!)

QI, Nurse Mentoring, ILA, CCS/CAS – a combination of delivery channels for TA, capacity/skill building, supervision, planning

Household surveys (LQAS), facility assessments, direct observations of deliveries – designed as monitoring mechanisms

STRATEGY/POLICY INTERVENTION CHOICES

STRATEGIES

Coverage vs outcomes – primary focus remained on the latter

Facility-based (MMR, asphyxia, contraceptive services) vs outreach-based (preterm birth, anaemia, stunting)

HMIS vs independent measurements – (why 'vs'?) – mostly relied on the latter

Microsystems vs support systems – 'systems' work effectively began during IFHI

Opportunistic (BFHI, BKMB, Poshan Abhiyan, ASHA modules) vs proactive efforts (ILA, QI, NM, WNB) to leverage top-down change

Manual vs digital technology

Key Decisions

- Building ground-up vs top-down
- Designing and implementing measurement strategy driven by ToC/ToA
- Strengthening domain-agnostic ‘delivery channels’ as the primary operational strategy
- Decision to burn bridges at the IFHI-TSU transition (esp. for outreach work)
- Embedding IT into the program
- The 70:30 rule
- Moving from flat structure to the vertical TSU organizational structures
- Not claiming credit or publishing the same.

Directional Scenario

WHAT COULD BE DONE DIFFERENTLY ? (WHAT IF..)

Assuming we have achieved less than what was feasible with the given resources:

Should our focus have been different?

- Systems vs impact
- Morbidity vs mortality

Should our strategies have been different?

- cRCTs instead of scale interventions
- HMIS instead of independent measurements
- ‘Preservice’ kind of capacity building instead of on-the-job
- Leadership focus instead of workforce focus
- More vs less embedded in departments
- More vs less investment in ICDS

Could we have organized ourselves differently?

- Larger vs smaller TSU team
- More vs less of technical specialization
- More vs less of managerial interventions

Could we have found or made room for more effective facilitators?

- Self-evidently, yes. Why did it not happen?

WHAT IS LIKELY TO SUSTAIN IF TSU INTERVENTIONS STOPPED?

IMPACT	Trends will sustain, unlikely to observe bending
HEALTH BEHAVIOURS	What is not flat already is likely to flatten
SERVICE COVERAGE	Likely to see sustained growth
SERVICE QUALITY	Unlikely to see improvements, or only slow growth
WORKFORCE SKILLS	Rate of improvement will likely slow down
PROGRAM STRATEGIES	Likely to regress in sharpness
LEADERSHIP CAPACITIES	Will remain bureaucrat-dependent

CORE STRATEGY INSIGHTS

Adequacy for impact vs feasibility at scale:

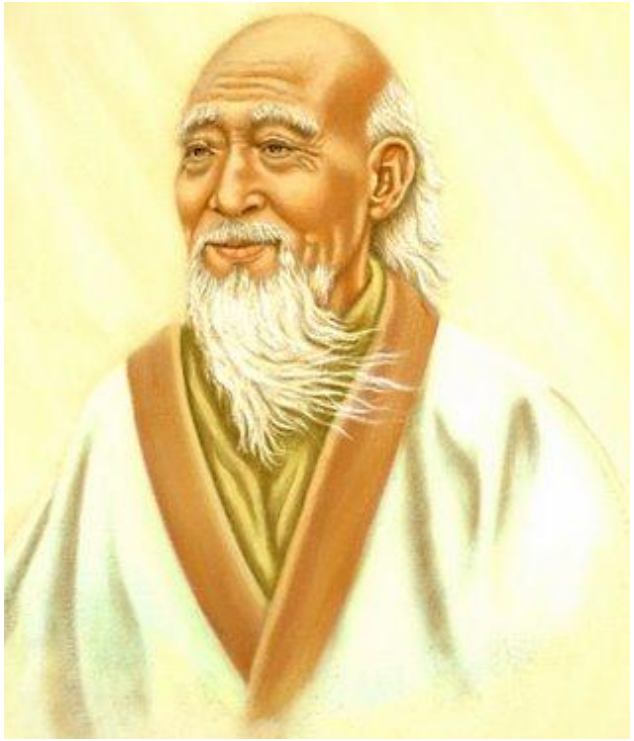
Don't attempt intervention intensity that is unlikely to be effective. Most programs fail to achieve impact because they lose intervention intensity at the last mile.

Bend the curve when the bending can still be measured: As mortality rates fall, the effectiveness of interventions becomes difficult to judge

Attempting to finish the business may give more bang for the buck than waiting for 'government' to do it: Some key interventions simply don't excite them, nor will they the private sector

RMNCHN efforts need to be integrated and normalized - quickly outgrowing the utility of a 'vertical'

The very few, 'simple' interventions to get to impact are doable, but distractions abound – and the fount is at the top. Overcoming these may be the primary intervention – conceivably, this would apply to all of health.



Go to the people.
Live with them.
Learn from them.
Love them.
Start with what they know.
Build with what they have.
But with the best leaders,
When the work is done,
The task accomplished,
The people will say
‘We have done this ourselves’.

- Lao-tse in 7th century B.C.