Enhancing Interactions between Households, Communities and Health Workers for Improving Maternal and Newborn Health: The Last Ten Kilometers Project

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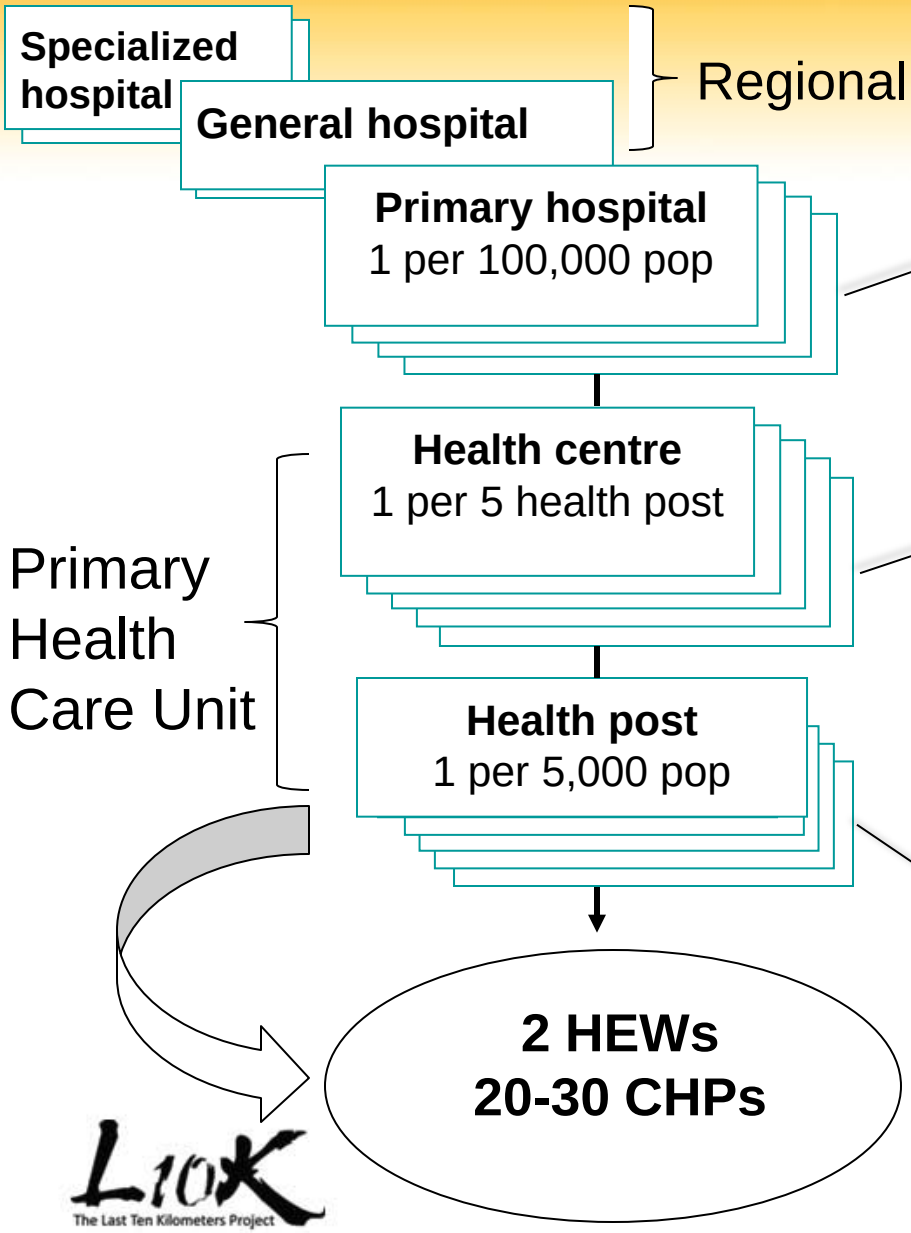
Background

- Most of the Ethiopian population used to live more than 10 kilometers away from a health facility.
- The health extension program (HEP) was launched in 2004 to close the gap and act as the major platform to reach its health related MDGs.
- By 2009, HEP established 1 health post & 2 health extension workers (HEWs) in each of its 15 thousand kebeles

Ethiopian Public Health System



District level: **Comprehensive** EmONC and other referral services

Sub-district level: All services provided by the health post, plus **basic e**mergency **o**bstetric and **n**eonatal **c**are (EmONC), curative services, and provides administrative and technical support to the health posts

Kebele level: Focus on prevention including bed nets, sanitation, breastfeeding, safe and clean delivery, basic ANC and PNC, immunization of children and mothers, family planning, and management of childhood illnesses (malaria, diarrhea, pneumonia case management)

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The Last Ten Kilometers Project (L10K)

- Funded by Bill & Melinda Gates Foundation
- Bridges the gap between the HEP and the households and communities
- Implements community strategies to improve the skills of HEWs to enhance their interactions with households and communities to achieve more, better, efficient and equitable maternal, newborn and child health (MNCH) outcomes and contribute towards achieving maternal & child health related MDGs

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L10K The Core Strategy

- Covers 115 districts (14 million population)
  - Phase 1 (Dec 2008) in 71 districts
- Partners with 12 local NGOs (Tier 1 grantees) & 4 Region Health Bureaus
- Trained 7 thousand HEWs & 77 thousand community health promoters (CHPs)
- 1 CHP for every 25 – 30 households (HHs)
- Anchors CHPs within community institutions
- CHPs are role models and provides health education to link HHs with the HEP

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Community-based Data for Decision-making (CBDDM)

- Added upon the core strategy in 14 districts
- CHPs map the households in their neighborhood for targeted MNCH services
- Activates kebele health committees
- Fosters community participation in planning, monitoring & evaluating Interventions

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Theory of Change

Enhance frontline worker capabilities to interact with households and communities

Innovative community strategies

Interaction between frontline workers and households

- **More**
- **Better**
- **Efficient**
- **Equitable**

Increased coverage of high impact MNCH services

- **Mortality among newborns and mothers will be reduced to accelerate progress towards MDGs 4 and 5**

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Research Questions

1. Are there improvements in MNCH behavior & practices in the L10K areas?
2. If so, are improvements in MNCH indicators attributable to the L10K project?
3. Are there any added value of CBDDM over the L10K core strategy?

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Methodology

Randomized study design for L10K was not feasible

Having comparison areas without other MNCH program could not be ensured

This study uses the natural variability in the scope and intensity of L10K across 71 phase 1 districts and seek dose-response relationship between L10K intensity and MNCH outcomes to measure impact

Methodological Challenge

- Program placement (or intensity) is non-random in this study. If program placement factors are systematically associated with the health outcomes under study, then, not controlling for program placement factors may over- or under-estimate program effects from this does-response analysis

Data: Sample Size

	Baseline	Midterm
District	67	67
Kebele/cluster	137	214
No. of respondents	4,247	6,440
Women 15-49 yrs	2,740	2,568
Women with children 0-11 mths	1,644	2,567
Women with children 12-23 mths	1,370	2,556

Measuring L10K Intensity

- For each of the 11 MNCH components the HEW is asked:
  - 1) Is this service supported by any private sector or NGO?
  - 2) If so, is the private sector other than L10K?
  - 3) Was any training provided by the private sector/NGO? and,
  - 4) Was there any supportive supervision after the training?
- Component scores (ranged between 0 to 3) were aggregated to get L10K program intensity index (Cronbach's alpha = 0.95)
- The index was recalibrated to range between 0 and 3.
- Similarly, another scale is constructed to measure MNCH program intensity of other NGO programs

RESULTS

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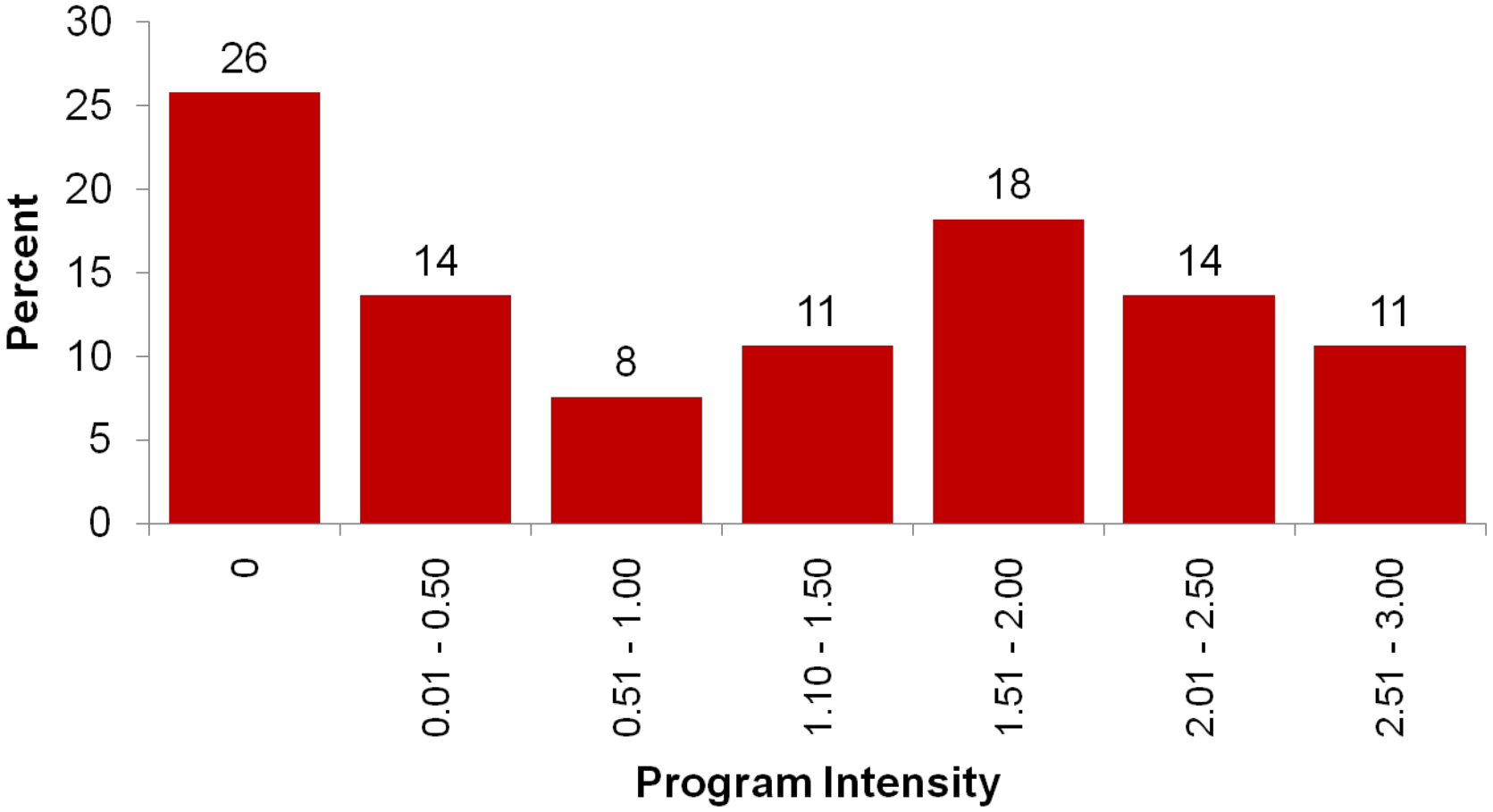
Exposure to L10K: Distribution of Phase 1 Districts According to L10K Intensity



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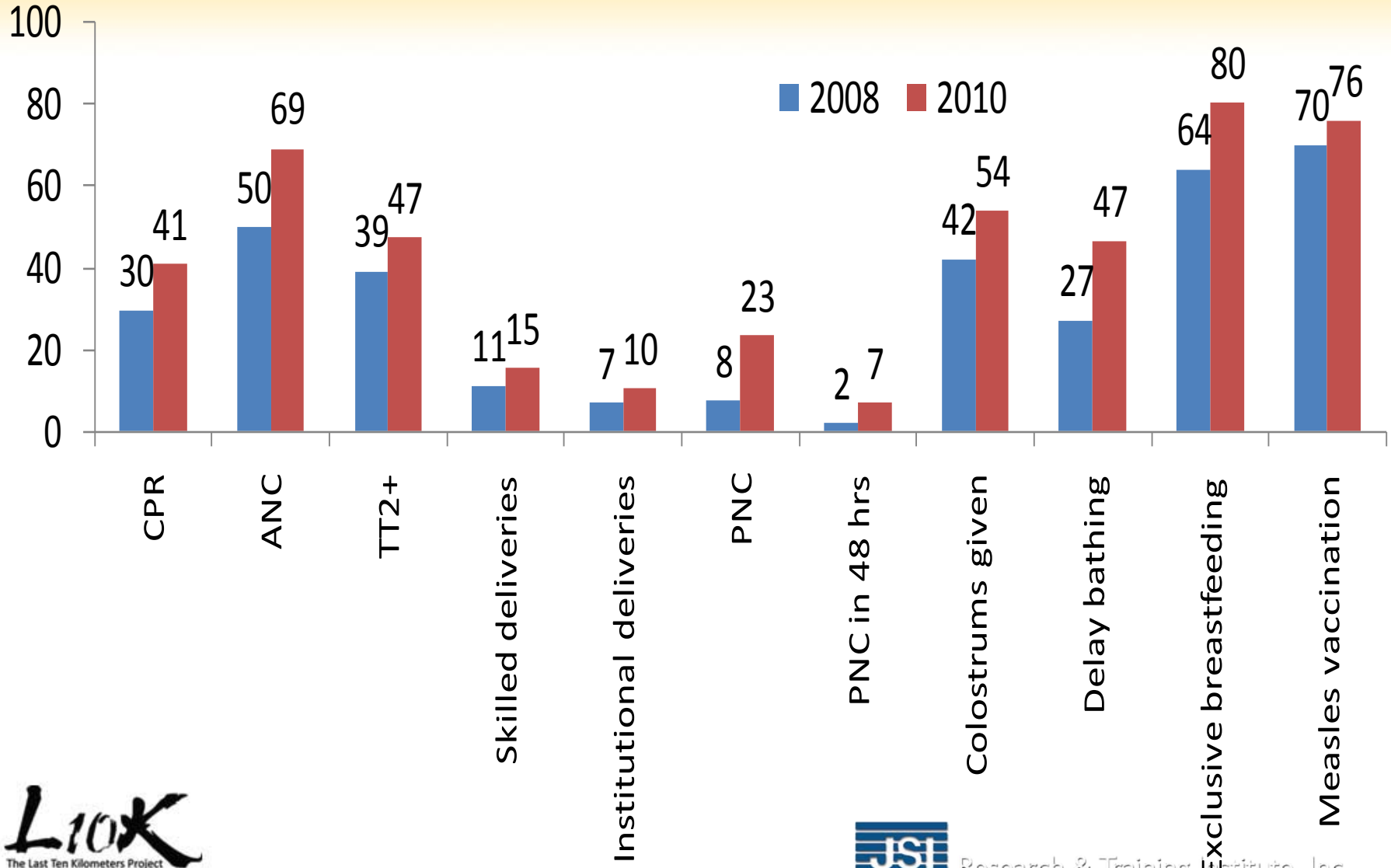
Changes in MNCH Outcomes, 2008 – 2010



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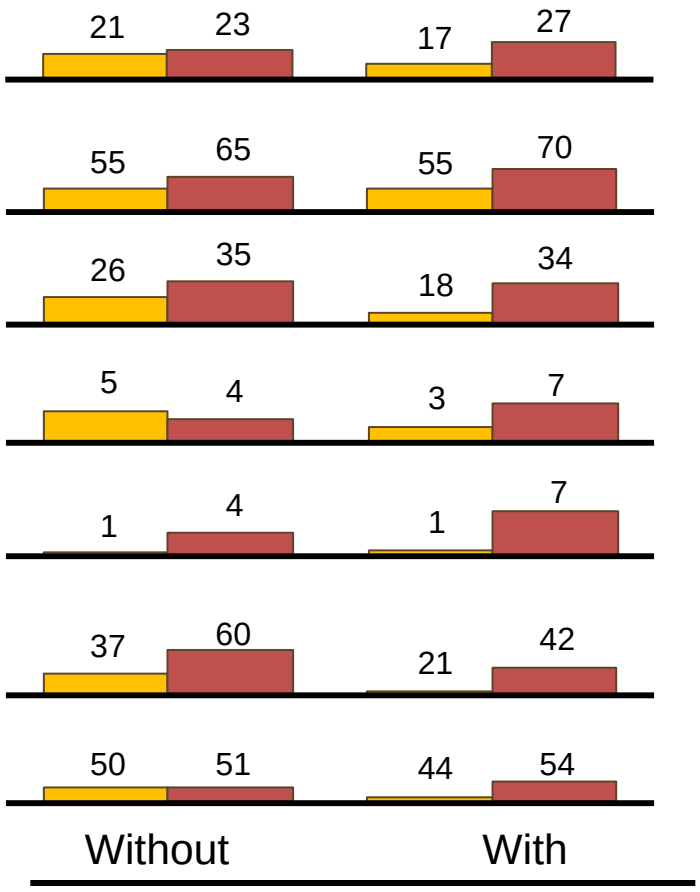
Impact of L10K

Indicator	Change in coverage with and without L10K program support (biased/unadjusted)	Increased odds due to L10K (adjusted)
CPR from health post (HP)	21 → 23; 17 → 27	1.3
ANC	55 → 65; 55 → 70	1.3
ANC from HP	26 → 35; 18 → 34	1.6
Deliveries assisted by HEWs	5 → 4; 3 → 7	1.9
PNC in 48 hrs by HEW	1 → 4; 1 → 7	2.0
Delay bathing newborn	37 → 60; 21 → 42	1.0
Colostrums given to baby	50 → 51; 44 → 54	1.0



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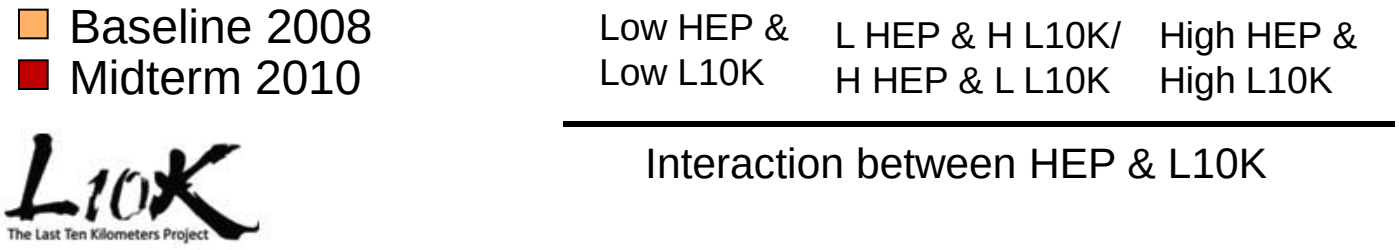
Interaction Between HEP and L10K

Indicator	Change in coverage due to L10K in high and low HEP intensity areas (biased/unadjusted)	Synergistic effect
Contraceptive use	31 36 30 36 32 48	Yes
ANC from HP	30 34 21 30 16 40	Yes
Health prof. assisted deliveries	13 11 11 12 13 19	No
PNC	4 12 8 19 7 30	Yes
Colostrums given to baby	60 54 42 49 45 59	Yes
Fully immunized child	51 41 50 49 43 64	Yes



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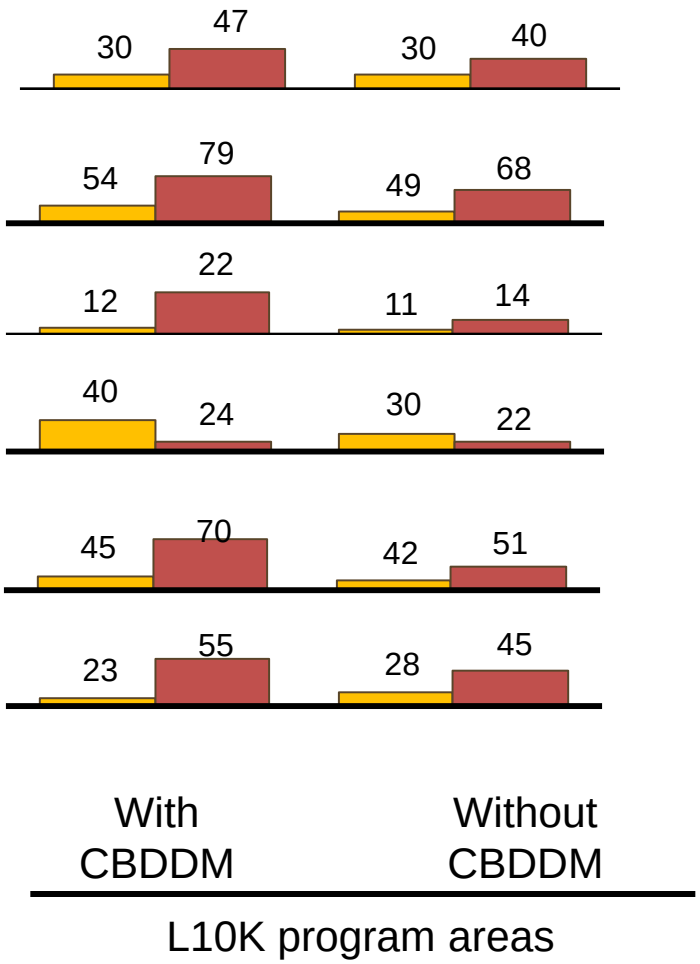
Added Value of CBDDM

Indicator	Change in coverage in CBDDM and non-CBDDM areas (biased/unadjusted)	Increased odds due to CBDDM (adjusted)
Contraceptive use	30, 47, 30, 40	1.3
ANC	54, 79, 49, 68	1.4
Health prof. assisted deliveries	12, 22, 11, 14	1.0
Apply butter to cord	40, 24, 30, 22	0.7
Colostrums given to baby	45, 70, 42, 51	1.3
Delay bathing newborn	23, 55, 28, 45	1.6



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Summary of Results

MNCH Indicator	Impact of L10K (OR)	Added Value of CBDDM (OR)	Interaction with HEP*
CPR	1.0	1.3	+
CPR from health post	1.3	1.5	+
ANC	1.3	1.4	+
ANC from health post	1.6	1.4	+
TT2+ Injection	1.3	1.0	+
Health prof. assisted delivery	1.0	1.0	0
HEW assisted delivery	1.9	1.8	+
Institutional deliveries	0.8	1.0	0
PNC by health professional	1.2	1.6	+
PNC by HEW	1.6	2.1	+

*+ = Impact of L10K is higher when there is also improvement in HH visits by HEWs
(-) = Impact of L10K is negative when there is improved HH visits by HEWs

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Summary of Results

MNCH Indicator	Impact of L10K (OR)	Added Value of CBDDM (OR)	Interaction with HEP
PNC within 48 hours	1.0	1.0	+
PNC by HEW within 48 hours	2.0	1.0	+
Apply butter to cord	1.0	0.7	+
Delay bathing newborn	1.0	1.6	+
Colostrums given	1.0	1.3	0
Exclusive breast feeding	1.0	1.0	0
Fully immunized child	1.3	1.0	+

*+ = Impact of L10K is higher when there is also improvement in HH visits by HEWs
(-) = Impact of L10K is negative when there is improved HH visits by HEWs

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Other Findings

- 35% of rural population is still more than one hour (i.e. 5 kms) away from health facilities: L10K effects are weaker among them
- HEW's perception regarding L10K support has significant population level effects
- Program effects are consistent with the L10K program strategy; therefore, the program exposure measure can be considered valid

Recommendations

- Efforts should be made to increase the intensity of L10K in the low intensity areas
- Scale-up CBDDM tools elsewhere
- Develop and test referral linkage strategies to increase deliveries assisted by health professionals and institutional deliveries
- Develop strategies to reach out to the last 5 kilometers