

## BACKGROUND

- In well-functioning health systems, emergency obstetric and newborn care (EmONC) is a key strategy to reduce both maternal and newborn mortality.
- In LMICs, strengthening the health care system to provide basic EmONC (BEmONC) is critical to saving maternal and newborn lives, especially in rural areas.
- L10K supported upgrading the capability of health centers in providing timely BEmONC through:
  - Training providers in BEmONC
  - Post-training mentoring and monitoring
  - Provision of equipment and supplies
  - Strengthening referral linkages
  - Improving infection prevention practices

## OBJECTIVES

This study examines the effectiveness of the BEmONC initiative implementation strength index score on the rate of facility deliveries and met need for BEmONC in rural health centers L10K's coverage area

## METHODS

### Study design and setting

- A cross-sectional survey (April 2013, July 2015) in 134 rural health centers in 91 districts of four regions: Amhara, Oromia, SNNP, and Tigray.
- Data were collected through interviews, observation, and review of patient records and service statistics.

### Study variables

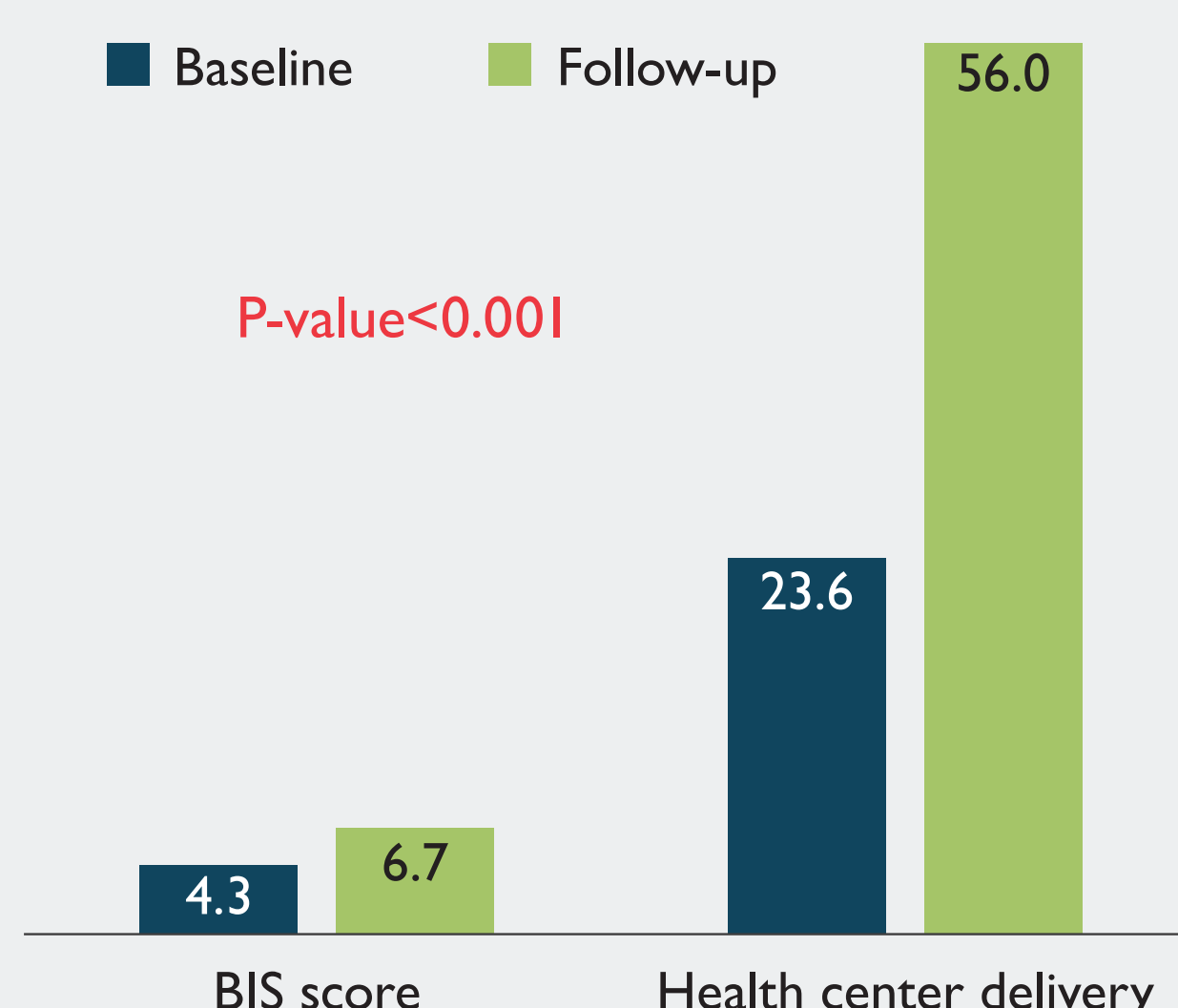
- Independent variable: BEmONC implementation strength (BIS) score, measured as an index using 7 programmatic input items and 5 process indicators
- Outcome variables: Facility delivery rate and met need for BEmONC, proportion women with expected obstetric complications treated.
- Facility delivery were measured pre-post while met need measured post only

### Data analysis

- BIS index obtained by adding the 12 variable scores and divided by their standard deviations
- BIS score recalibrated to range 0-10 Cronbach's alpha for the 12 items: 0.71
- Fixed-effects regression: assessed the dose-response relationship between the changes in BIS and the changes in the health center delivery rate.
- OLS regression: assessed a cross-sectional doseresponse relationship between BIS and met need for BEmONC during the follow-up survey.
- A scatter plot was used to analyze variable associations

## RESULTS

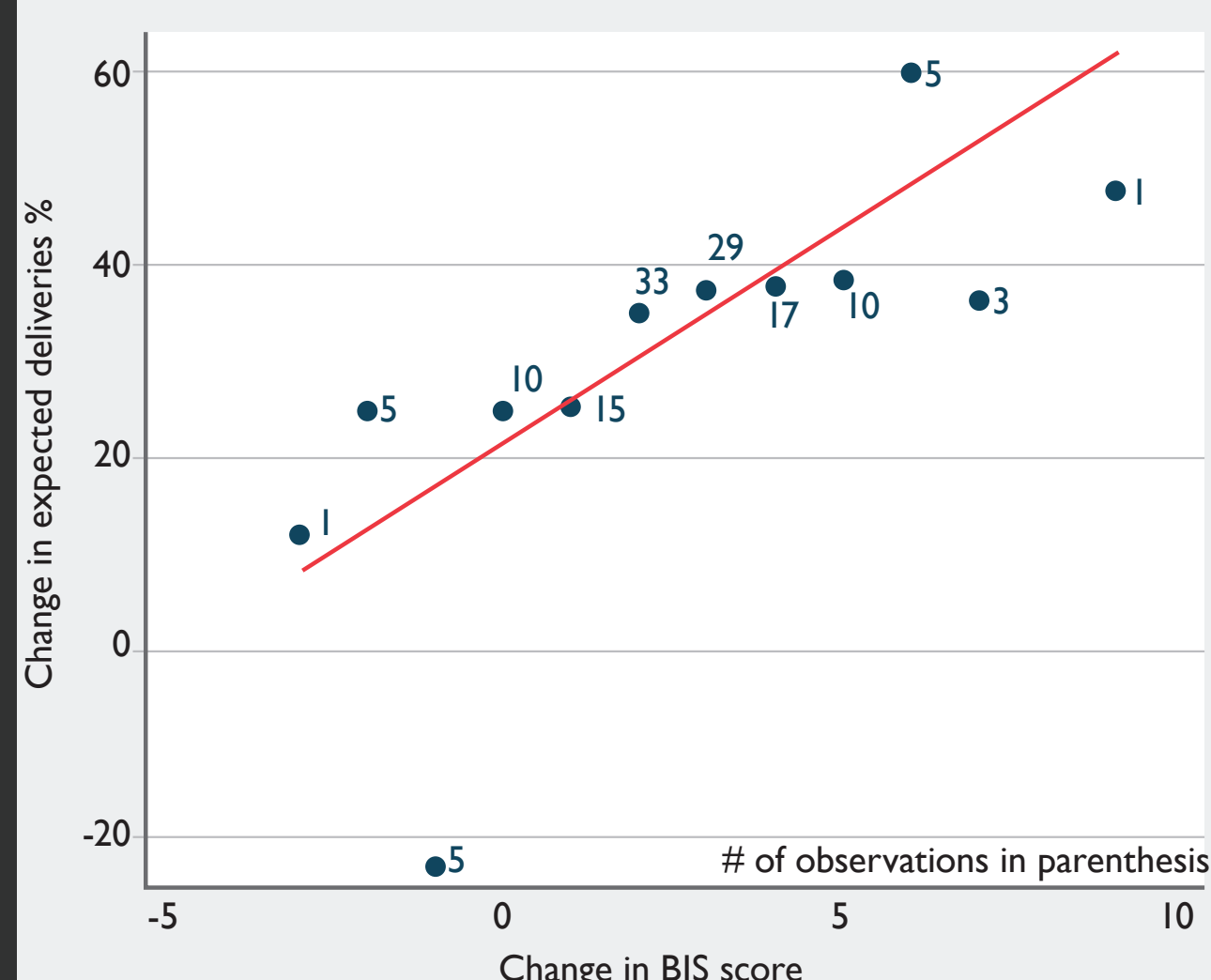
### Changes in BEmONC implementation and service utilization over time



Met need for BEmONC was 16% in the followup survey, by adverse event:

- 8.2% abortion;
- 4.7% PPH,
- 3.0% obstructed/ prolonged labor;
- 0.1% postpartum sepsis.

### Relationship between Changes in BIS Utilization of Facility Birth

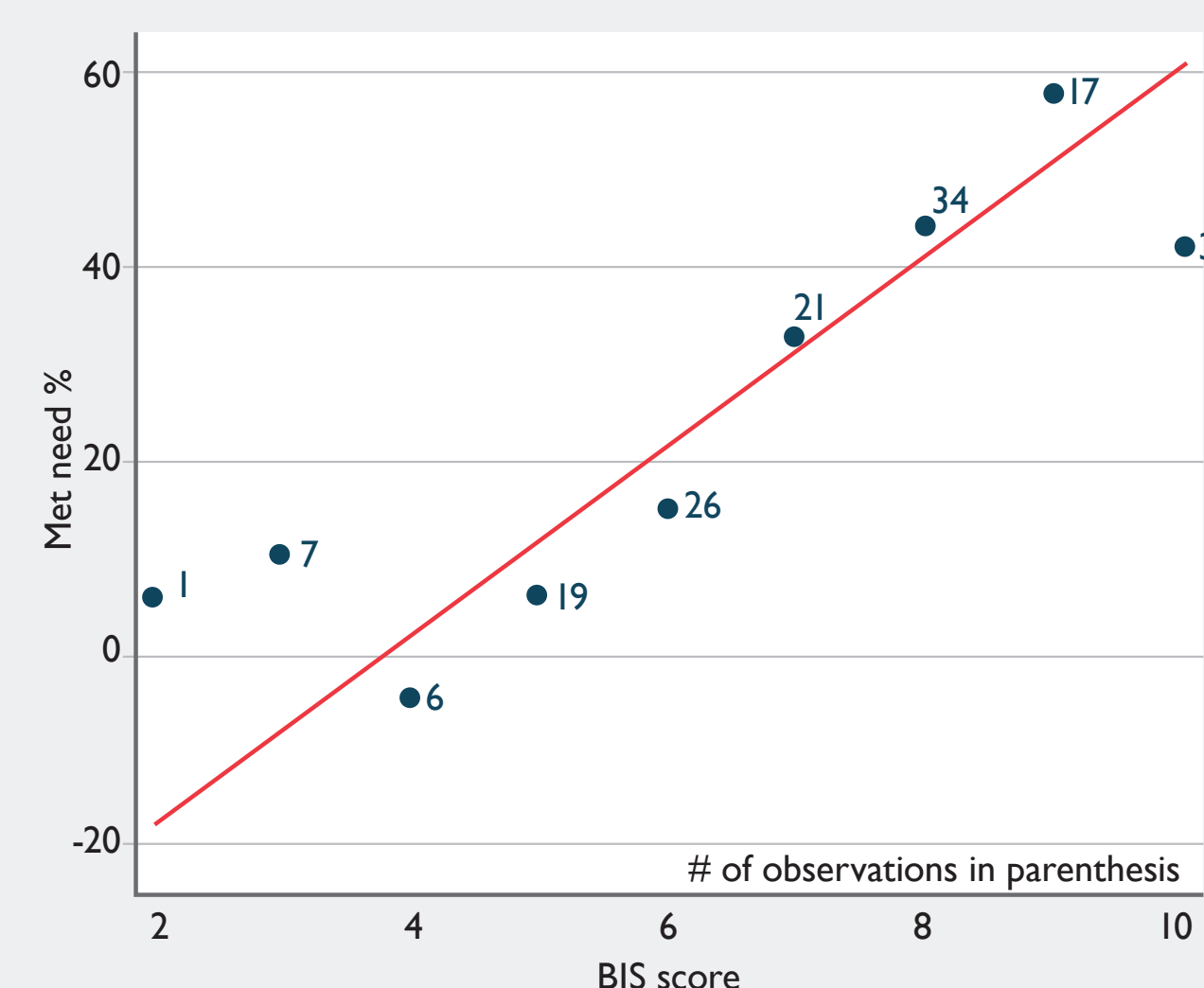


### Relationship between changes in BIS over time and changes in utilization of facility birth

Independent variable	OLS regression predicting health center delivery		
	Coefficient	(95% CI)	p-value
BIS score	4.5	(2.1, 6.9)	<0.001
Constant	21.3	(13.5, 29.1)	<0.001

For every unit increase in BIS score across time, there was an increase of four to five facility based deliveries at primary health care

### Relationship between changes in BIS and Met Need for BEmONC



### Relationship between changes in BIS score over time and met need for BEmONC

Independent variable	OLS regression predicting met need for BEmONC at health centers		
	Coefficient	(95% CI)	p-value
BIS score	3.1	(1.6, 4.6)	<0.001
Constant	-5.0	(-15.5, 5.4)	0.344

On average, every unit increase in BIS score of a facility was associated with 3.1 percentage points for higher met need for BEmONC.

## CONCLUSIONS AND RECOMMENDATIONS

- The BEmONC initiative was effective in improving institutional deliveries and may have also improved the met need for BEmONC services.
- Policymakers and program planners should make additional investments in critical BEmONC inputs for and closely monitor service delivery at the primary health care level.
- The BEmONC implementation strength index can potentially be used to monitor the implementation of BEmONC interventions.
  - We recommend further research on:
  - The quality of intrapartum care (e.g., case fatality rate, stillbirth, and early neonatal death rates)
  - Equitable use of BEmONC services
  - BEmONC costing