# An Innovative Intervention to Improve Respectful Maternity Care in Three Districts in Ethiopia

**Birkety Mengistu Jembere** ( bmengistu@gmail.com )
Institute for Healthcare Improvement

**Haregeweyni Alemu**
Institute for Healthcare Improvement

**Munir Kassa**
Ministry of Health, Ethiopia

**Meseret Zelalem**
Ministry of Health, Ethiopia

**Mehiret Abate**
Institute for Healthcare Improvement

**Befikadu Bitewulign**
Institute for Healthcare Improvement

**Kedest Mathewos**
Duke University

**Kendra Njoku**
Institute for Healthcare Improvement

**Neil S Prose**
Duke University

**Hema Magge**
Institute for Healthcare Improvement

**Research article**

**Keywords:** Mistreatment, Respectful maternity care, Quality improvement, Childbirth, Compassionate respectful care, Patient-centeredness, Experience of care, Ethiopia

**Posted Date:** March 30th, 2020

**DOI:** https://doi.org/10.21203/rs.2.18578/v2

**Version of Record:** A version of this preprint was published at BMC Pregnancy and Childbirth on August 6th, 2021. See the published version at https://doi.org/10.1186/s12884-021-03934-y.

# Abstract

Background: Mistreatment during childbirth are major violations of human rights and often deter women from accessing skilled delivery in health facilities. In Ethiopia, mistreatment has been documented to occur in up to 49.4% of mothers delivering in health facilities. This study describes the development, implementation and results of a novel intervention to improve respectful maternity care and decrease mistreatment in three districts in Ethiopia.

Methods: As part of a national initiative to reduce maternal and perinatal mortality in Ethiopia, we developed a novel respectful maternity care training module with three core components: testimonial videos, didactic sessions on communication, and onsite coaching. As of February 2017, we implemented the respectful maternity care training in three districts within the regions of Oromia; Southern Nations, Nationalities, and People's; and Tigray. Measures of births with privacy and a birth companion from a 27-month data from 17 health centers and three hospitals were analyzed using interrupted time series and a regression analysis was conducted to assess the significance of improvement. Facility level solutions applied to enhance privacy and birth companion were documented.

Results: Analysis of the effectiveness of integrating respectful maternity care using available programmatic data showed significant improvement following the respectful maternity care training, which was sustained beyond the project intervention (regression coefficients ranging from 0.18 to 0.77). Several local solutions were devised and implemented in the health facilities to improve the experience of care for mothers.

Conclusion: This study suggests that integrating the respectful maternity care training into the district-wide quality improvement collaborative is effective in improving respectful maternity care. Multi-pronged approach is especially helpful in enhancing respectful maternity care comprehensively. Use of testimonial videos helped providers to see their services from their clients' perspective, the quality improvement training and coaching helped them reflect on potential root causes for this type of treatment and develop effective solutions.


# Introduction

Increasing access to skilled care during childbirth is a key strategy for reducing maternal and perinatal mortality and morbidity (1). However, mistreatment is highly prevalent in health facilities globally (2–7). Mistreatment ranges from subtle negligence and abandonment to overt verbal or physical abuse. The Bowser and Hill framework is commonly cited to describe aspects of mistreatment during childbirth (4,6,8–12). These categories include physical abuse, non-consented care (including denial of birth companionship), non-confidential care, non-dignified care (including verbal abuse), discrimination based on specific attributes, abandonment or denial of care and detention in facilities.

These forms of mistreatment are major violations to human rights and discourage mothers from seeking care in their subsequent deliveries (3,4,8,9,13–18). In addition, mistreatment has been shown to

negatively affect clinical outcomes (2,6,13). Such mistreatment can occur at the level of interaction between a client and a provider or may result from health system failures, including supply constraints or the physical condition of facilities (3,12).

Ethiopia has a low facility-based delivery rate of only 26% (21). Systematic analyses of studies on mistreatment in Ethiopia have shown that among those utilizing facility-based care, almost half (49.4%) are experiencing neglectful or abusive care, with 13.6% reporting physical abuse and 16.4% abandonment (22). Lack of training on interpersonal communication, poor working environments and high workloads are among the drivers of mistreatments (6,13,23). Such mistreatments tend to be accepted as the 'norm' both by the clients and providers and may not be raised as concerns (4,9,12,24–26).

Although birth companions provide emotional, psychological and social support, birth companions were mostly not allowed in Ethiopia for hygienic reasons previously. Recent studies have shown that the presence of a birth companion is associated with improved outcome both for the mother and the baby, including increased spontaneous vaginal delivery, shortened labor time and higher Apgar scores (19).

To address issues related with mistreatment, the Federal Ministry of Health of Ethiopia (FMoH) has elevated the compassionate, respectful and caring (CRC) health workforce as one of the four priority agendas of the Health Sector Transformation Plan (27). Although there is increasing documentation of effective intervention of mistreatment globally (14,28), there are no studies that share effective interventions to reduce mistreatment in maternity care in Ethiopia.

The Institute for Healthcare Improvement (IHI) in partnership with the FMoH, integrated an approach to institutionalize respectful maternity care (RMC) into a large-scale maternal newborn health (MNH) focused quality improvement program. The intervention aimed to empower health care providers (HCPs) through a life testimonial video-based training along with participatory discussion and reflection, a didactic session on communication skills, along with onsite coaching to devise local solutions that can enhance RMC. This study describes its development, implementation and measures its effectiveness.

# Methods

The MNH Quality Improvement Collaborative Context: IHI has partnered with the FMoH to reduce maternal and neonatal deaths by 30% through a district-wide quality improvement (QI) collaborative, being integrated into the existing health system. This approach brings together facility teams from the district for a 12 to 15-month period for a woreda level improvement collaborative work. This work commenced with a training in quality improvement followed by a baseline assessment of key maternal newborn health service inputs, processes, and outcomes to determine areas for improvement focus. During the first learning session (LS), QI teams from all facilities in the woreda were convened and were presented with the baseline findings. They were then supported to design QI projects to fill in identified gaps in the baseline. These teams pursued a collective aim of improving MNH by using the Model for Improvement where they tested different change ideas using Plan-Do-Study-Act cycles (PDSA) in their local facilities during the action period. Intensive coaching and clinical mentorship focused on QI

approach and MNH clinical skills happened in between the LSs (action period) (Figure 1). When training gaps were found during the baseline assessment, providers received basic emergency obstetric and newborn care (BEmONC) training which included RMC orientation.

In this endeavor, IHI provided the QI training, the baseline assessment tool and supported facilities in conducting the baseline assessment. The coaching visits to the facility team were done by IHI SPOs while the BEmONC training is provided by Ethiopian Midwives Association in collaboration with IHI.

In close consultation with the regional health bureaus, three districts in Tigray - Tanqua Abergele (TA), Oromia - Limu Bilbilu/Bekoji (LB) and Southern Nations, Nationalists, and People's (SNNP) - Duguna Fango (DF) were targeted as prototype districts by the project as of October 2016 (Table 1). The prototype districts included additionally Woreta/Fogera in Amhara and Amibara in Afar which were engaged at a later time by the project (April 2017 and January 2019 respectively). These two districts were excluded from this analysis as the implementation time difference makes comparison difficult.

RMC Intervention

*Design of the RMC videos*: We conducted a focus group discussion (FGD) with IHI staff team members who had first-hand experiences as health care workers in rural settings and as coaches, to explore the current state of RMC-related issues in the program-supported districts. These findings were consolidated and key themes were identified. Three stories were written to capture these key themes. The testimonial scripts depicted a mother with normal delivery, another one with referral and emergency care and an adolescent pregnant woman who experienced preterm labor (Annex 1). The scripts were three to four minutes long and translated into Amharic. Student-actresses were then trained to perform the scripts to protect patient confidentiality in creating the video testimonials.

*Delivery of the RMC Training Module*: The videos were shown to participants during the second LS and facilitated by IHI Senior Project Officers (SPOs). Participants of this LS in the three districts are depicted in Table 2. Learning session participants were multidisciplinary, and included facility leadership, MNH clinical providers, data managers, and health extension workers.

The three videos were followed by participatory reflection and discussion. Participants were asked to reflect on the videos using questions depicted in Annex 2.

After the discussion, there was a short presentation on the prevalence of mistreatment in Ethiopia and skills to improve empathic communication and relationships with patients (Annex 2). Following the LS, teams returned to their QI projects to develop change ideas or local solutions to enhance RMC in their facility. Skills were reinforced by facility coaches between LSs. This includes supporting staff to ensure privacy of mothers by using screens and encouraging them to allow birth companion. Coaching visits also helped to collect data and assure the data quality. A minimum of three coaching visits happened between two LSs per facility.

Data Collection: Monthly programmatic data indicating the percentage of sampled deliveries with privacy maintained and with birth companion offered were collected from November 2016 until January 2019 for a total of 27 months, from the facilities in these three districts (17 health centers and three primary hospitals). Data were collected from 30 maternal medical records of the FMoH adopted safe child birth checklist on mothers who gave birth in the previous month, using a systematic sampling technique for facilities that have higher number of deliveries (Annex 3). For facilities with lower birth rates (30 or less), all the safe childbirth checklists filled-in during the past month were reviewed. Data were collected by IHI SPOs and entered into the program database as part of their routine work. Even though the RMC training addressed all the seven categories of mistreatment, the programmatic database measured only the sampled births with privacy and those with birth companion. Hence, in this study we used the two categories to assess the results of the training module.

Change ideas tested at facilities were extracted from routine QI coach programmatic documentation and were evaluated based on quantitative criteria for “success” based on run chart rules (30). Those with higher degrees of success were then reviewed and those with an RMC focus were extracted for this analysis.

Data Analysis: We conducted an interrupted time series and regression analysis using STATA version 13 to analyze the effectiveness of the intervention. In the regression analysis, we analyzed the short-term effect of the intervention which measures the first 10 to 11 months following the training (February/March to December 2017 during which direct project support was going on), while the long-term effect measures the impact of the intervention after the direct support ended. We used the Bowser and Hill mistreatment categories to label a ‘change idea’ as having a component that aims to enhance RMC. We presented sample change ideas implemented in the targeted facilities in ensuring privacy and allowing birth companion.

# Results

Quantitative results on privacy and birth companion: The targeted outcomes reported are privacy maintained and birth companion offered during labor and delivery (L&D). A total of 23,129 births took place during the 27 months of data collection (November 2016 to January 2019) in the 20 health facilities. On average, each of the targeted health centers attended 34 deliveries and the primary hospitals attended on average 96 deliveries per month (Table 3).

Figure 2 shows an interrupted time series for the percentage of sampled deliveries with birth companion by district. The timing for the second LS in LB, Oromia when RMC was introduced is labeled with a vertical line (February 2017) while in TA, Tigray and DF, SNNP, it was conducted in the following month (March 2017). Direct project support ended in December 2017 (LS4), while data collection continued.

To ensure the privacy of mothers during delivery, health facilities developed change ideas such as using screens, including those that are made from locally available materials. Figure 3 shows an interrupted time series analysis for the sampled percentage of deliveries where privacy was maintained by district.

As shown in Table 4, a regression analysis in Tigray showed significant short (regression coefficient 0.18) and long-term effects (regression coefficient 0.27) following the intervention in terms of supporting birth companion participation and in maintaining privacy during birth. In SNNP, there was a significant short-term effect (regression coefficient 0.26) while in Oromia there was a significant long-term effect (regression coefficient 0.77) following the intervention.

Interventions deployed to enhance RMC: In addition to the outcome data, we assessed the change ideas tested in the facilities as part of improving the quality of care. Out of a total of 73 change ideas tested by the QI teams in these health facilities, 27 were related to RMC and among these, 23 met the criteria for inclusion in the change package. In all the three districts, the pregnant women conference— where pregnant mothers come together monthly for a group counselling—was modified to include discussions on availability of laboratory investigation at no costs. The conference was also used as an opportunity to discuss new efforts to maintain women's privacy during L&D and of bringing a birth companion. A tour of the L&D ward was incorporated into the session and a coffee ceremony was added. As part of the QI, engagement of leaders was important as most of the change ideas required the leaders' approval and resource allocation. An illustrative sample of successfully tested change ideas in relation to privacy and birth companion is shown in Table 5.

# Discussion

Our results found that an RMC-focused intervention involving self-reflection which was embedded into a district-wide QI approach led to significant improvement in the two measures of RMC. These changes were sustained for 13 months after the conclusion of the collaborative support in December 2017. The QI initiative helped providers address some of the system related issues that contributed to mistreatment.

This study adds to the limited existing literature on successful strategies to improve RMC in Sub-Saharan Africa. As the intervention districts were distributed over the three agrarian regions of Ethiopia, the findings may be generalizable to other agrarian contexts.

The failure to allow a family companion during institutional childbirth is one of the deterrents to utilization of maternity care services in Ethiopia and other low- and middle-income countries (4). Despite previous concerns about hygiene, providers who had received the RMC training specifically recognized the importance of encouraging family support and companionship. Hence, improvement in the practice of letting family companionship was noted in the intervention sites.

Lower results were seen in both privacy and birth companion data in Oromia from October to December 2017. This may have been due to civil unrest that took place during this time, which affected the short-term effect in the regression analysis. In SNNP, long-term effect may have been affected by the lack of the safe childbirth checklist. In cases in which the data is not recorded, it is assumed that services are not offered.

Previous studies that have evaluated RMC-related interventions have shown the importance of a multifaceted approach, including training on RMC and addressing barriers of RMC (14,28,32). Studies conducted in neighboring countries such as Tanzania and Kenya, using a pre and post comparative evaluation study, showed reduction in mistreatment ranging from 7 to 66% (14,32). Because we used available programmatic data, we were not able to show a specific reduction in mistreatment. However, our analysis shows significant improvement in births with privacy and companion following the RMC training.

Our study has some important limitations. As our analysis is based on available programmatic data, the study was not able to evaluate the status of RMC using all the seven Bowser and Hill's categories of mistreatment , which may require interviewing clients and observing their interactions with providers. However, the RMC training module addressed all the seven mistreatment categories. In this study, we focused on two of the categories: ensuring privacy (non-confidential care) and allowing family companionship (non-consented care). These were shown to be the main grievances by mothers in Ethiopian settings and hence were included in the FMoH adopted SCC (13,24,33–35).

We may have also underestimated the impact of the training, as there were many change ideas tested to improve the general experience of care along the MNH spectrum. In addition, as data were collected from the medical record SCC, its unavailability in some of the health facilities led to lower coverage even when services are offered, again contributing to underestimation of the impact. Finally, without a comparison district, it is possible that the results were related to other factors, including the national initiative on CRC. Attributing results to just the RMC approach is difficult as integration within the QI initiative likely had a synergistic effect.

# Conclusion

This study suggests that integrating RMC training into a QI collaborative is effective in improving RMC. Use of testimonial videos are especially helpful as they appeal to the heart and remind HCPs of their moral obligation to treat mothers with dignity. Embedding this intervention within an ongoing QI effort enabled HCPs to look deeper into the care process and to reform it in ways that are genuinely family and women-centered. In relation to this, engagement of the facilities' and districts' health leaders was crucial in allocating resources to enhance RMC. These interventions could be replicated in similar settings to ensure mothers get the respectful care they deserve.

# List Of Abbreviations

ANC: Antenatal Care; BEmONC: Basic Emergency Obstetric and Newborn Care; CRC: Compassionate Respectful Care; D&A: Disrespectful and Abusive care; DF: Duguna Fango; FMOH: Federal Ministry of Health; HCP: Healthcare Providers; IHI: Institute for Healthcare Improvement; LB: Limu Bilbilu; LS: Learning Session; MNH: Maternal Newborn Health; PWC: Pregnant Women's conference; QI: Quality Improvement; RMC: Respectful Maternity Care; TA: Tanqua Abergele

# Declarations

**Ethics approval and consent to participate:** This research is part of a broader evaluation study that was reviewed and approved by the Ethiopian Public Health Association Scientific and Ethical Review Committee. The programmatic data confidentiality is maintained, as there are no identifiers of the clients nor on the providers.

**Consent for publication:** N/A

**Availability of data and materials:** The dataset is readily available upon request with permission of IHI.

**Competing interest:** The authors declare that they have no competing interests.

**Funding:** The project is funded by the Bill and Melinda Gates Foundation and Margaret A. Cargill Philanthropies. However, the authors are fully responsible in the implementation, data collection, analysis and the write-up of this report.

**Author's contribution:** BMJ and HA led the analysis and report write-up of this study. HA, BB and MA are IHI's SPOs who facilitated the RMC session and collected programmatic data in the three districts. KN led the change package compilation. HM and NSP critically reviewed the manuscript for intellectual content. All authors have read and approved the final paper.

**Acknowledgement**

We would like to extend our appreciation to the participants of this study from the three collaboratives and Munessa district. The QI program is funded by the Bill and Melinda Gates foundation and Margaret A. Cargill Philanthropies. We thank our colleagues from Addis Continental Institute of Public Health who provided insight and expertise that greatly assisted with the analysis and write-up of this research. We are especially indebted to Prof. Alemayehu Worku and Mr. Fitsum Tsegaye for their tireless support in the analysis of the data. We are also grateful to Jane Roessner for her valuable comments on an earlier version of the manuscript and Naomi Fedna for proofreading the final version to fit journal requirement. Last but not least, we are grateful to the three actresses who participated in the testimonial videos.

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# Tables

**Table 1:** Number of health facilities and residing population in the three districts

| Region | Zone | Woreda | Catchment Population | Hospital | Health center |
|---|---|---|---|---|---|
| Tigray | Central | Tanqua Abergele (TA) | 107,081 | 1 | 5 |
| SNNP | Wolaita | Dugna Fango (DF) | 122,316 | 1 | 5 |
| Oromia | Arsi | Limu Bilbilu/Bekoji (LB) | 213,032 | 1 | 7 |
| Total | | | 442,429 | 3 | 17 |

**Table 2:** Learning session two timing by region and participants

| Region | Date | Participants by health facility | | | |
|---|---|---|---|---|---|
| | | Hospital | Health center | Health posts | Total |
| Tigray | Mar 2017 | 11 | 23 | 37 | 71 |
| SNNP | Mar 2017 | 7 | 27 | 35 | 69 |
| Oromia | Feb 2017 | 10 | 29 | 20 | 59 |
| Total | | 28 | 79 | 92 | **199** |

**Table 3:** Average birth volume of the targeted facilities

| Woreda | Health center | | Hospital | | Total in 27 months |
|---|---|---|---|---|---|
| | Average/month | Std. dev. | Average/month | Std. dev. | |
| Tanqua Abergele (TA) | 25.6 | 13.9 | 72.5 | 10.3 | 5395 |
| Dugna Fango (DF) | 48.2 | 17.5 | 89.4 | 8.4 | 8815 |
| Limu Bilbilu/Bekoji (LB) | 27.7 | 15.0 | 126.6 | 15.6 | 8919 |
| Total deliveries in the 20 facilities in the 27 months | | | | | 23,129 |

**Table 4:** Percentage of births with companion and privacy regression analysis, by region

| Tigray births with companion and privacy | Coef. | Std. Err. | T | P>t | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| Time | -0.27 | 0.06 | -4.8 | 0 | -0.38 | -0.15 |
| Short term intervention effect | 0.18 | 0.05 | 4.06 | 0.001 | 0.09 | 0.28 |
| Long term intervention effect | 0.27 | 0.06 | 4.8 | 0 | 0.15 | 0.38 |
| Constant | 1.85 | 0.22 | 8.39 | 0 | 1.39 | 2.31 |
| SNNP births with companion and privacy | Coef. | Std. Err. | T | P>t | [95% Conf. Interval] | |
| Time | 0.01 | 0.07 | 0.18 | 0.86 | -0.13 | 0.16 |
| Short term intervention effect | 0.26 | 0.11 | 2.46 | 0.02 | 0.04 | 0.48 |
| Long term intervention effect | -0.01 | 0.07 | -0.08 | 0.94 | -0.15 | 0.14 |
| Constant | 0.48 | 0.22 | 2.22 | 0.04 | 0.03 | 0.94 |
| Oromia births with companion and privacy | Coef. | Std. Err. | T | P>t | [95% Conf. Interval] | |
| Time | -0.78 | 0.23 | -3.39 | 0.003 | -1.25 | -0.30 |
| Short term intervention effect | -0.46 | 0.18 | -2.55 | 0.019 | -0.83 | -0.09 |
| Long term intervention effect | 0.77 | 0.22 | 3.48 | 0.002 | 0.31 | 1.24 |
| Constant | 3.8 | 0.93 | 4.08 | 0.001 | 1.87 | 5.75 |

**Table 5:** Sample RMC related change ideas tested in the facilities

| Change idea (What?) | Change Idea (How?) | Addressed category of D&A | Tested sites |
|---|---|---|---|
| Modifying and refining pregnant women conference (PWC) | The content of messages during PWC was modified where mothers are informed of the following:<br>-That they can give birth in **preferred birthing position**, as most women do not like the lithotomy position<br>-The availability of lab investigations free of charge<br>-**Family member of choice is now allowed during L&D.**<br>-**Woman's privacy** is maintained which they observe during a tour to the delivery unit | Non-consented care, Non-confidential care, Non-dignified care | All |
| Allowing family birth companion during labor and delivery (L&D) | While pregnant woman is in prenatal stage (4$^{th}$ ANC visits or PWC), **birth companion** is identified and counselled on the expectations and responsibilities to support the mother during L&D. **Tour of the L&D ward** is organized to help mothers become familiar with the setting | Non-consented care | All |

# Figures

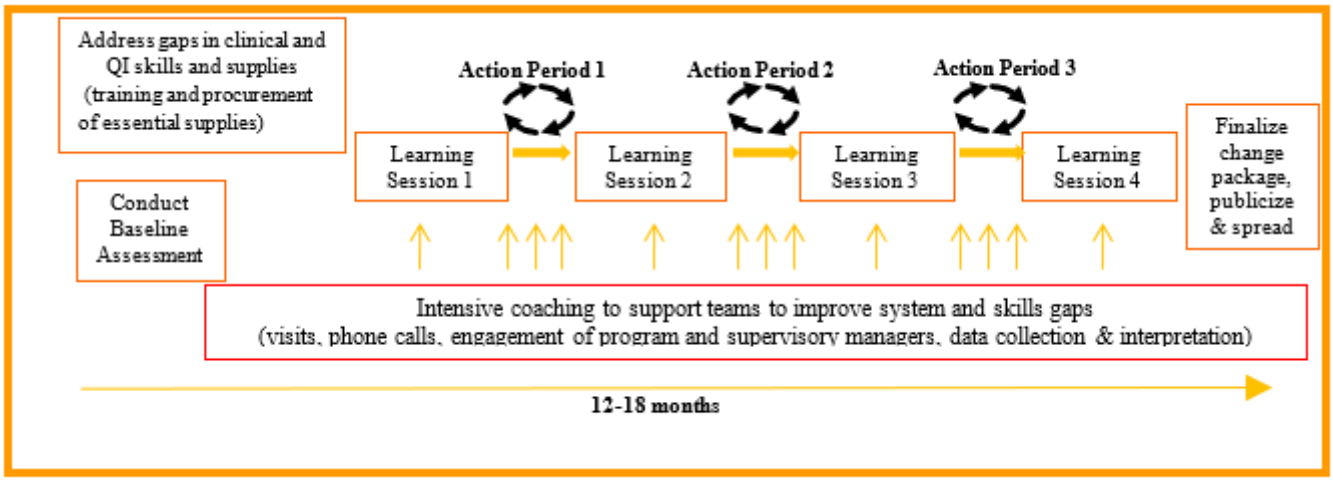
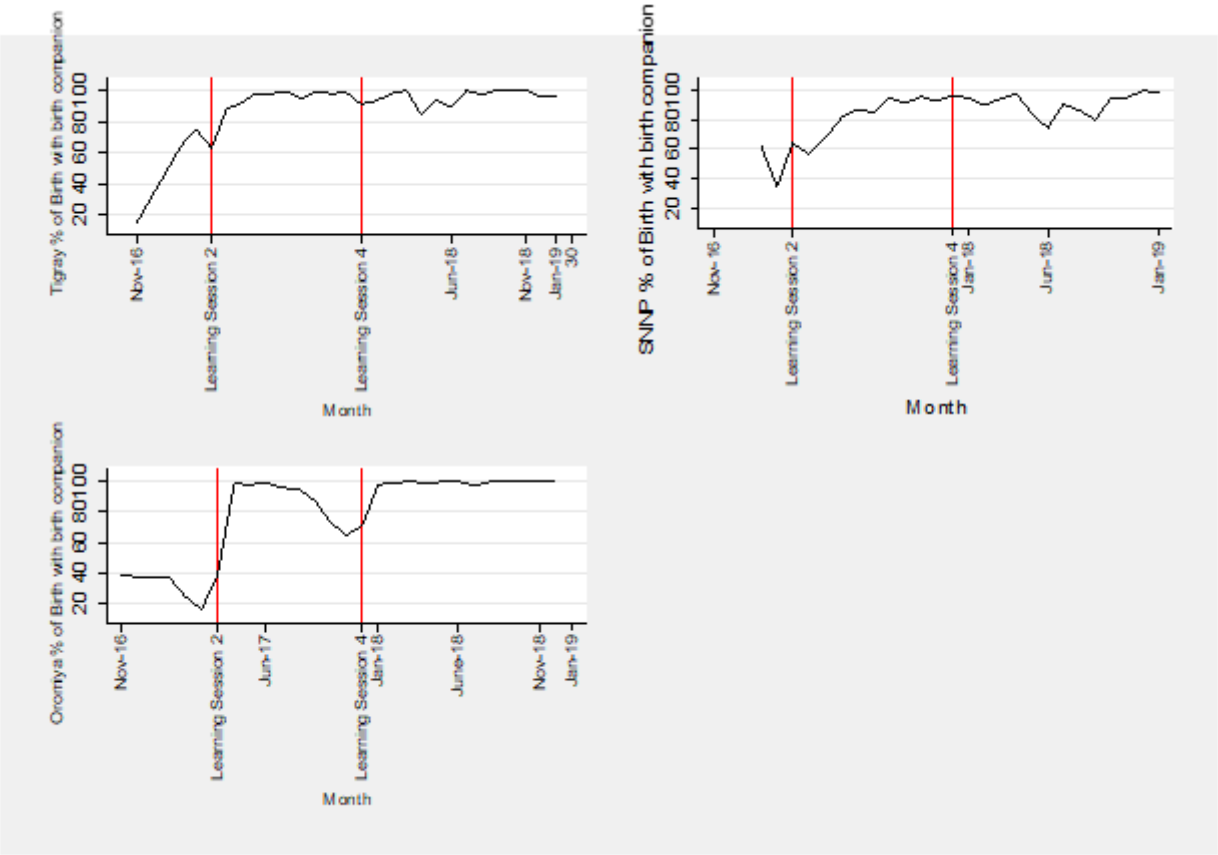



**Figure 1**

District-wide quality improvement approach of IHI




## Figure 2

Percentage of births with companion allowed in three regions in Ethiopia

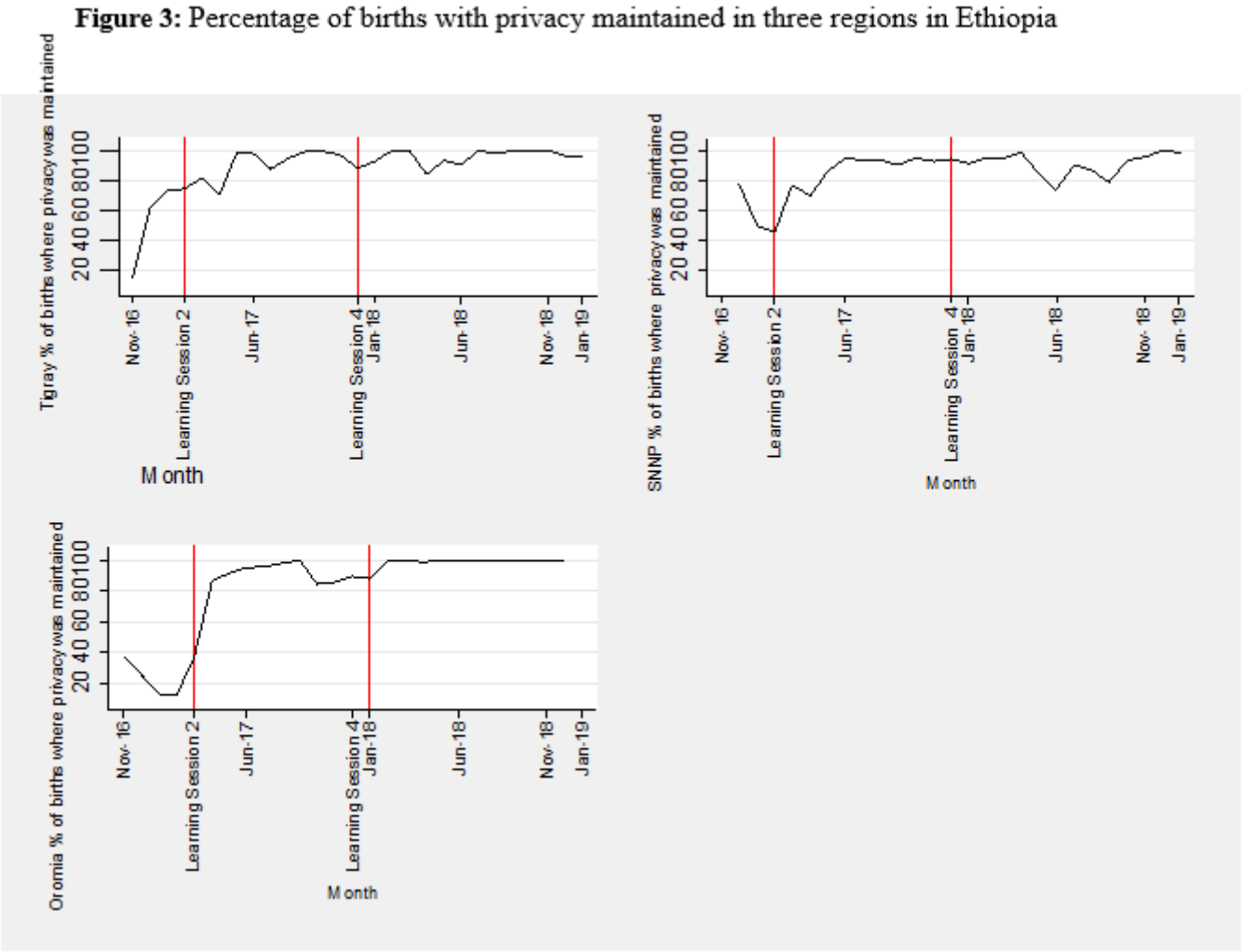



**Figure 3**

Percentage of births with privacy maintained in three regions in Ethiopia

# Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Annex2slidesonRMC.pptx
- Annex3SafeChildbirthChecklist.pdf
- Annex1ScriptsoftheTestimonies.docx