

## IMPLEMENTATION OF QUALITY IMPROVEMENT IN BIRTH COMPANION POLICY AT GOVERNMENT MEDICAL COLLEGE AND HOSPITAL IN THE 'NEW NORMAL' OF COVID 19

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### ABSTRACT

**Introduction:** Assuring pregnant women have access to safe birth and continuum of antenatal and postnatal care during COVID assuming great importance, though it indeed is challenging. With the numerous existing challenges in implementation of birth companion policies, COVID has made it more difficult to implement birth companion policy which has drastically reduced to a zero. The Health Ministry of India has advised “birth companion” during childbirth in all the public health facilities. This step is one of the parts of low-cost intervention initiated by the government of India to meet the sustainable development goals.

**Methodology:** The adapted birth companion policy was introduced to all pregnant women through antenatal classes. After admission to labour room, birth companion accompanied parturient throughout labour and provided supportive care. To implement birth companion policy and to test benefits of intervention, a quality improvement team was convened. A special care and extra efforts were taken to implement this policy even in COVID-19 pandemic.

**Results:** first PDSA cycle of 8 weeks, birth companion support use remained low, with usage in only 20% of deliveries. From weeks 9 to 16 Improvements in adaptation of birth companion policy adherence was observed, with an average of 82% of parturient delivered received support of the birth companion of their choice. At the end of week 32, caesarean section rate decreased from 29.16 % to 26.09 %. With the birth companion of their choice and favourable birthing positions, there was decreased need of operative vaginal deliveries from 2.24% on week one to 1.8 % on week thirty-two.

**Conclusion:** Providing birth companion of choice is the right of every pregnant woman. The current COVID-19 Pandemic is no exception. The Pandemic must not disrupt every woman's right to high quality, respectful maternity care. In 'New Normal' of COVID-19, everyone should strongly adhere to birth companion policy which will result in emotional, practical and health benefits of having birth companion of choice.

**KEYWORDS:** birth companion; respectful maternity care, COVID-19, quality improvement.

### **PROBLEM:**

Between the year 2000 and 2017, there is a drop in the maternal mortality ratio by 38% worldwide, but, still low and lower middle-income countries contribute to 94 % of all maternal deaths.[1] Improving maternal health by providing Quality of Care plays a pivotal role in the solution for reducing maternal mortality.

Assuring pregnant women have access to safe birth and continuum of antenatal and postnatal care during COVID assuming great importance, though it indeed is challenging.

Denial of birth companion in the second or third stage of labour, for whatever reason and lack of information about care being given provided are the most common form of disrespect and abuse. There is an acute requirement to humanise childbirth in countries across the world for the realisation of dignity, respect and human rights for all women.

With the numerous existing challenges in implementation of birth companion policies, COVID has made it more difficult to implement birth companion policy which has drastically reduced to a zero. To overcome these challenges, we have utilised quality improvement cycles.

Here, we describe the successful implementation of the birth companion to reduce the unnecessary interventions such as oxytocin infusion, operative vaginal deliveries, caesarean sections and to improve the maternal and neonatal outcome.

### **INTRODUCTION:**

Reporting and responding to COVID-19, a public health emergency, has strained the already over-stretched health system in India causing severe risk disruptions in the provision of health services, particularly for mothers and children. This could, potentially lead to increase in preventable maternal, new-born and child mortality and morbidity.

Experience suggests that Ebola outbreak in 2014-15 created serious interruptions to the availability, uptake, outcomes and demand of maternal and new-born health services in Sierra Leone that consequently resulted in a 34-percentage increase in maternal mortality ratio and 24 percentage increase in infant mortality rate, illustrating a massive health system failure there. [2]

Hence to maintain the trust in the health system, it is imperative that equal thrust be given to continuing the provision of essential health services covering sexual, reproductive, maternal and child health while countering the COVID -19 pandemic.

The Health Ministry of India has advised "birth companion" during childbirth in all the public health facilities. [3] It is indeed a welcome move aimed at reducing maternal and neonatal mortality. This step is one of the parts of low-cost intervention initiated by the government of India to meet the sustainable development goals. Birth companion is defined as women who have experienced the process of labour, she may be a friend, sister, mother or neighbour and provide continuous one-to-one support to woman experiencing labour and childbirth. The basic idea is to make a childbirth a more natural process through emotional and moral support, comforting measures and healing touches.

Even in this COVID-19 pandemic, one should uphold the women's human rights and healthcare staff should utilize multiple contact points throughout the antenatal and childbirth period to empower women make informed decisions around safe motherhood practices choice of birth companion.

### **DESIGN-**

Government medical hospital, Aurangabad,(MH), India is the tertiary care centre serving the region with a population density as high as 354/ km<sup>2</sup>. It is the referring centre for 17 nearby districts. Our department is equipped with 200 beds. Obstetric care occurs in the ante-natal care ward, post-natal care ward, caesarean ward and two delivery wards with around 18,000 deliveries annually. Institutional Ethical Committee approval was taken. Valid consent was taken from the birthing women, who were recruited in the study. Based on WHO recommendations on Birth companion policy, our department decided to test the Birth companion implementation supported by detailed training conducted by maternity ward chief to decrease the caesarean rate, operative vaginal deliveries, need of labour analgesia, length of labour, reduction in neonatal morbidity and mortality. The aim was to bring an improvement in adherence to birth companion policy from 0% to 90% for all institutional-based deliveries and reduction in the caesarean rate, operative vaginal deliveries, need of labour analgesia, length of labour, reduction in neonatal morbidity and mortality in the new normal of COVID-19.

### **STRATEGY**

The study was formulated with the aim of increasing the percentage of deliveries accompanied by birth companion in COVID-19 global pandemic from 0 % to 90 % in 32 weeks. The study has been implemented at Government Medical College, Aurangabad from April 2020 to November 2020. A quality of care improvement (QI) team was convened to develop and to test this intervention to reduce caesarean rate, operative vaginal delivery rate and need of oxytocin for labour augmentation. Members included four doctor, eight nurse-midwives and two supporting staff. The team employed the four-stage problem solving Model for Improvement and planned for rapid cycle testing of implementation using the Plan-Do-Study-Act (PDSA) approach[4]. Before applying each PDSA cycle to all birthing women, we tested each act on small scale to low risk birthing women and after successful implementation, these PDSA cycles were generalised to all birthing women. The team carefully scrutinized potential root causes and identified that despite relevant coaching sessions, emergency obstetric care and life saving skills done twice a year, poor adherence to birth companion policy persisted as a primary obstacle. Secondary obstacles were frequent staff changes in labour ward and the necessity for leadership to provide stronger motivation and support for the changes needed to ensure quality care.

A detailed birth companion policy of our department is explained as follows. Women were informed about what a birth companion is at their facility during ANC, they were also encouraged to identify and register a birth companion of choice to accompany and support them during labour and birth.

We developed a birth companion register where birth companion chosen by pregnant women are registered at health facility and provided with information on the roles and responsibilities of a birth companion during labour and birth.

One of the components of the RMC pilot is antenatal education classes to prepare pregnant women and their birth companion for the pregnancy, labour and birth journey (what to expect and what to do). The classes were facilitated by interdisciplinary team and guided by an antenatal education classes facilitator manual and toolkit comprising of teaching and learning

aids (posters, pelvic model to simulate the birthing process, etc) as well as birth companion tools to demonstrate non-pharmacologic pain relief techniques (birthing ball, cold and heat packs, etc). Birth companions were also educated regarding cleanliness, hygiene, and warning signs.

Both woman and her birth companion were a part of a symbiotic team who practiced comfort promoting techniques and participated in an orientation of the labour unit.

On admission of a woman in active labour to labour room, her birth companion was instructed to accompany her to the labour room. It was ensured that, birth companion did not have any illness. Each birth companion was provided Identity card and a sterile overcoat. The birth companion provided supportive measures during the labour and birth and following the birth. Specific supportive measures included “being there” with parturient as continuously as possible from admission until after the birth except for meals and bathroom breaks. This continuity is the soul of emotional support and is expressed by many of the following actions: grasping hand, touching, cuddling, talking, meeting eye contact, inspiring and adoring her efforts, helping with ambulation and finding a comfortable birthing position, massaging her back, priming breathing and pushing efforts, encouraging breastfeeding, and looking after the mother and baby after birth.

## **DATA**

Data from all the deliveries accompanied by birth companion were documented into a Microsoft Excel database. Deliveries which were not accompanied by a birth companion were excluded from analysis.

Data is graphically presented in weekly format. And tabulated in the 8-weekly format.

## **RESULTS**

### **PDSA CYCLE1 (FIGURE 1)**

#### **PLAN**

Initial steps included formulation and incorporation of the Birth companion policy, formal introduction of the birth companion policy in new normal COVID 19 in staff and a plan for ongoing support through training and performance feedback by Quality care committee. SMS (social distancing-mask-sanitisation) practices were included.

#### **DO**

The intervention started from the week of 1 April 2020 with introduction of the birth companion policy and initial data collected and review completed as planned beforehand.

#### **ADAPTATION**

The adapted Birth companion policy was acquainted to the antenatal OPD, labour ward and antenatal ward health care workers during a coaching that demonstrated its implementation. Support was given in the form of ‘presence of a companion of choice during labour and delivery. The companion received standardized verbal and written protocol provided by the Quality care team chief, that contained information on: activities involved in giving support to the woman, (stay with her, provide assistance, be tender, keep her calm, massage her, praise and encourage her, ambulate her, look for her needs and fulfil after discussion with the health care provider). The expectation was that the all the parturient mother to be accompanied by birth companion of their choice.

#### **FOLLOW-UP**

Doctors coached residents, staff nurses and supporting staff assessed over a week with monitoring and assessment of adherence to the Birth companion policy and feedback to build up motivation. A register was maintained for record keeping of birth companions and the progress of labour. Every week, register entries were reviewed and data entered in an excel

sheet to record the number of parturient accompanied by birth companion support, the number of deliveries, use of oxytocin, need of analgesia, progress of labour, need for instrumentation, type of deliveries, and maternal and new-born deaths. These data were assessed weekly with the Quality care Improvement team and were used to improve the current and subsequent PDSA cycles.

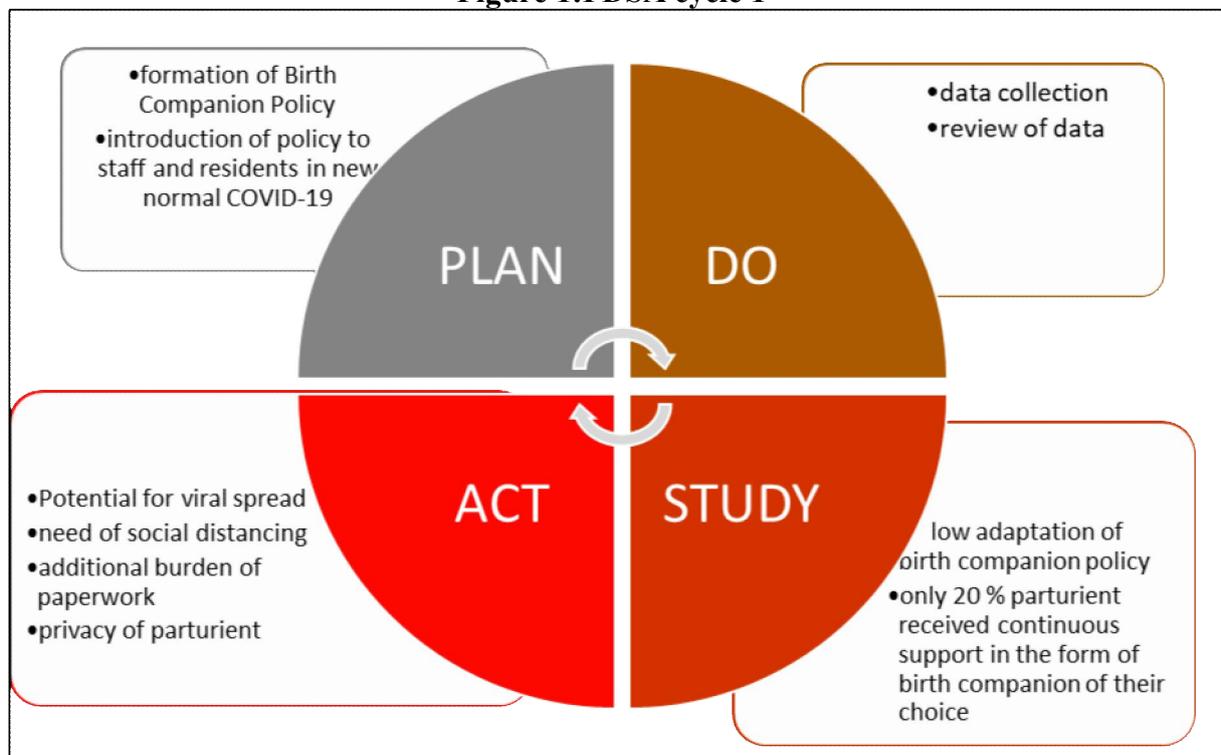
## STUDY

On estimation of the baseline data on birthing practices by health care providers, we observed presence of birth companion during entire course in labour room, the outcome indicators. From weeks one to eight, we introduced the Birth companion policy as planned and observed compliance among staff nurses. Following the first PDSA cycle of 8 weeks, birth companion support was on lower side, with only 20% of deliveries supported by birth companion.

## ACT

The Quality care team met to analyse and discuss potential root causes for the want of improvement and solutions. Identified challenges included that the health care providers saw the birth companion policy as the potential for viral spread and the need for social distancing, an additional load in paperwork rather than a tool to aid them provide better care; also, privacy of the other parturient was an issue. Presence of accompanying person was also found to have implications for the organization of space in the facility. Staff nurse rotation was another factor that resulted in new staff unacquainted with the birth companion policy. Also, there was a need to change the coaching from consultant-staff nurse to peer-to-peer (staff-to-staff) training to enhance the birth attendant possession and frequency.

Figure 1: PDSA cycle 1



**PDSA CYCLE 2 (FIGURE 2)****PLAN**

We plotted and executed a stronger training model to support new health care worker knowledge and uptake of the birth companion policy. The changes included a transition from a consultant-to-staff nurse coaching model to peer-to-peer coaching with two staff nurses identified as Quality care team champions. Coaching capacity among the champions was intensified through on-the-job training in coaching in Quality Improvement by two hospital leaders, one who had previous training and experience in QI coaching and one who was a national QI trainer. Another change was to ensure strict hygiene measures and social distancing as and when possible. Inclusion of curtains for the privacy of the parturient and to avoid cross-infection. Another change was to shift mother to delivery room, only when she is in active labour. In latent phase, mother would remain admitted in ante-natal ward and be with her companion of choice.

To minimize the risk of cross-infection, following measures were included-

- a. A single, healthy, asymptomatic birth companion of choice, who is not in self-isolation through contact with other symptomatic persons, should accompany the woman.
- b. Checklist for 'screening' of birth companions was strictly recommended
- c. The companion should accompany the parturient throughout labour and birth, without leaving the labour ward except for the short breaks for meal and bathroom.
- d. Women and their companions were properly explained about the infection control measures and use of personal protective equipment (PPE). And where needed, made available to them.
- e. Admit the woman to the labour room in active phase of labour, and women in pre-labour allowed to stay in the antenatal ward till they have good labour pains.

**DO**

From weeks 9 to 16, commitment, support and regular feedback on behavioural consistency were provided as planned, and ongoing data collection, review and feedback continued.

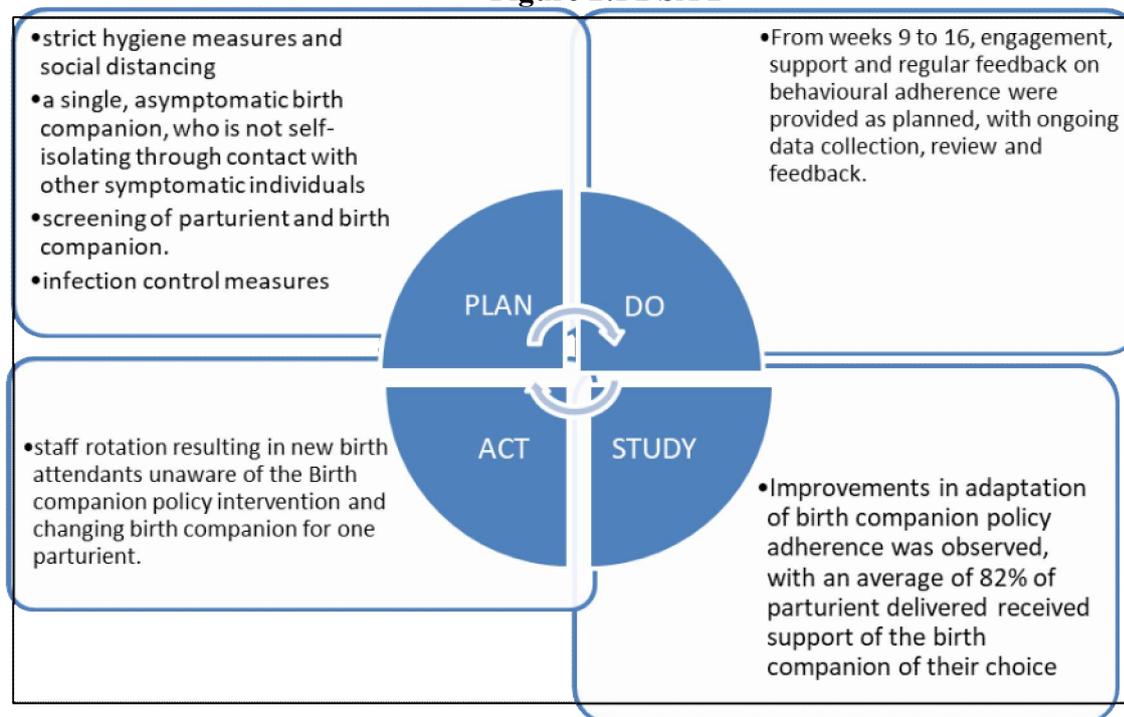
**STUDY**

Initially, staff remained reluctant to adaptation of the birth companion policy due to the fear of viral spread. After applying strict SOPs of screening of patient and their relatives, maintaining norms of social distancing and use of PPEs, Improvements in adaptation of birth companion policy adherence was noted, with an average of 82% of parturient delivered received support of the birth companion of their choice (figures 3).

**ACT**

On analysing the results, the remaining possible challenges identified included staff rotation resulting in new birth attendants unfamiliar of the Birth companion policy implementation and changing birth companion for one parturient.

Figure 2:PDSA 2

**PDSA 3****PLAN - DO**

In the course of the third PDSA cycle, changes to the intervention implementation included involving management support to lessen staff rotation through the labour ward. We targeted on building a committed and durable team sustaining the improvements in quality of care. This was strengthened through the two quality improvement champions and continuing peer-to-peer coaching. Incentives were given to the staff nurses involved in successful implementation in the form of appreciation letter and champion of the week.

**STUDY-ACT**

From weeks 17 to 24 Birth companion policy use continued to rise with an average of 85% of birth supported by birth companion. (figures 3). At this point, the Birth companion policy was integrated into routine practice on the labour ward.

**MAINTENANCE PHASE**

After the third PDSA cycle, the team continued with training and persuading birth companion policy usage. The overall average rate of birth companion supported deliveries remained stable. Ongoing training and management support were required.

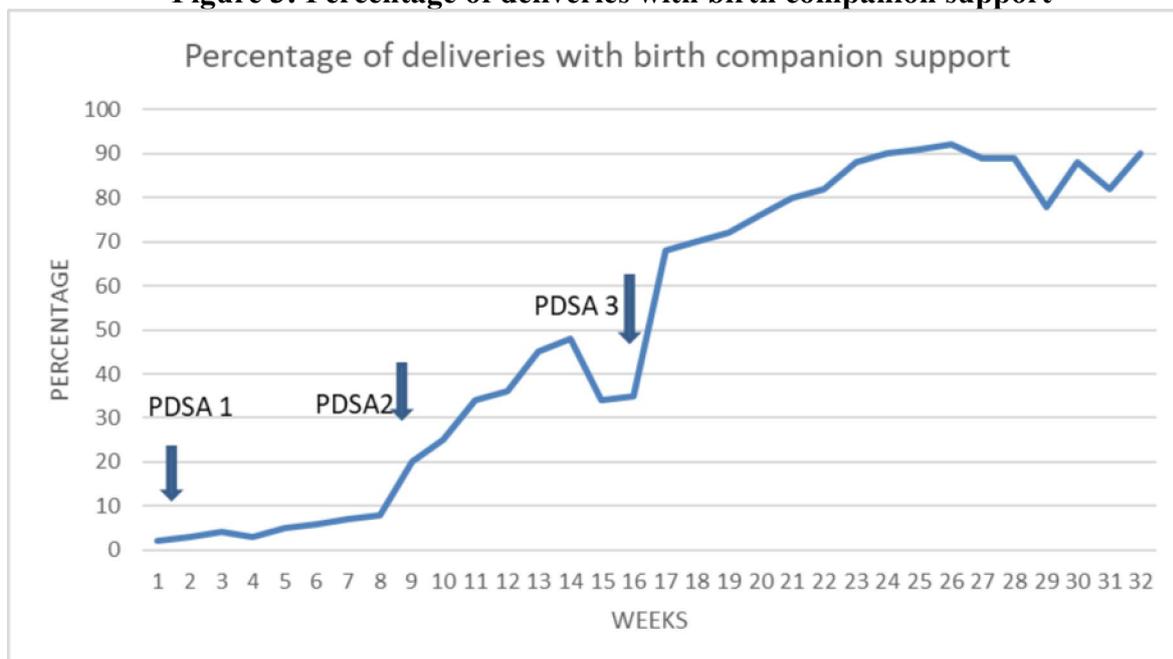
**Table 1**

Weeks	Total deliveries	Vaginal deliveries	Deliveries accompanied by birth companion	Birthing positions	Need of oxytocin	Percentage of operative vaginal deliveries	LSCS
1 to 8 (April – May)	2330	1669	78	654	1285	2.35	661

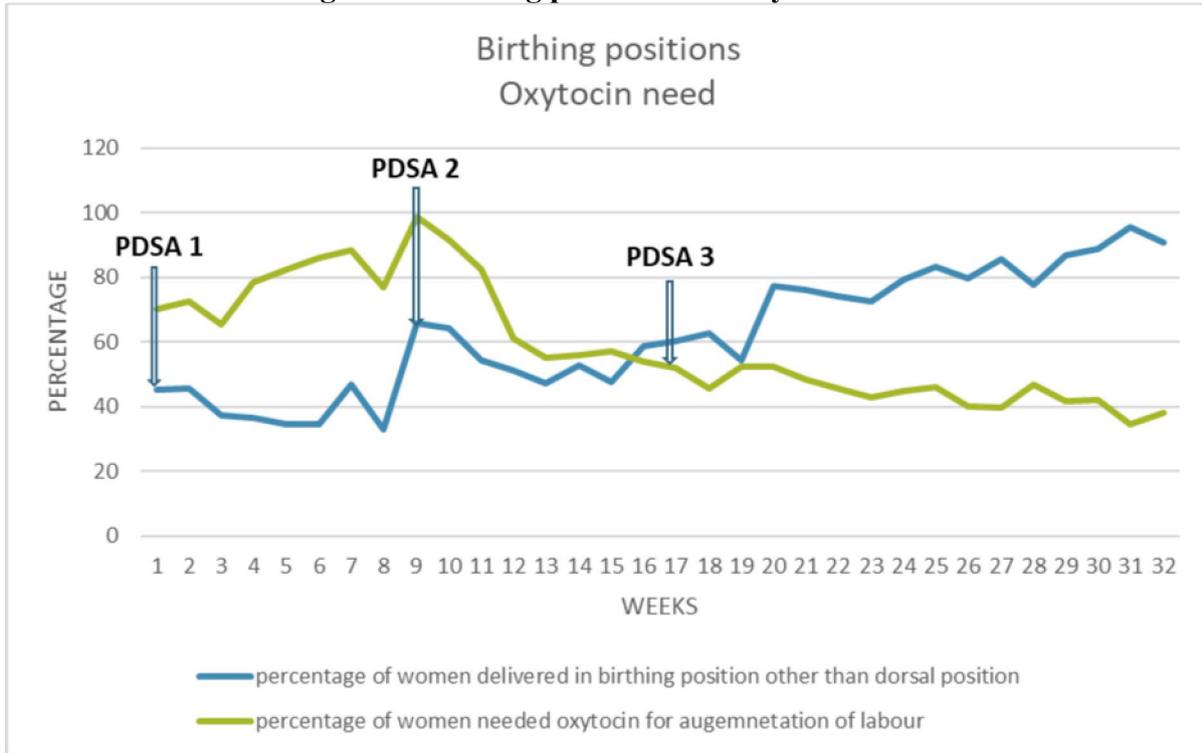
9 to 16(June-July)	2426	1782	639	968	1187	2.63	644
17-24(August-September)	2804	2102	1642	1455	1011	2.18	702
25-32(October-november)	2827	2114	1844	1822	866	1.89	713
Total	10387	7667	4203	4899	4349	-	2720

After formal introduction of birth companion policy through PDSA cycle 1, only 20 % deliveries were accompanied by Birth companion, as shown in the figure 3. After studying the problem areas and acting upon them through PDSA cycle two and three, 90 % parturient had the support from birth companion. Over the weeks, there was significant increase in the various birthing positions adopted by labouring women as shown on figure 4. At the start of the study, on week one, 45.24% women adopted birthing positions, while on week 32, 90.70 % women adopted various birthing positions with the support of birth companion. From week one to week thirty-two, need of oxytocin decreased from 70.13% to 37.91 %. At the end of week 32, caesarean section rate decreased from 29.16 % to 26.09 % as shown in the figure 5. With the birth companion of their choice and favourable birthing positions, there was decreased need of operative vaginal deliveries from 2.24% on week one to 1.8 % on week thirty-two (figure 5). There was steady decline in the babies with APGAR score at five minutes from 14.42% on week one to 10.98% on week thirty-two (figure 5). As per Table 1, in last maintenance phase (week 25-32), out of total 2114 vaginal deliveries, 1844 vaginal births were accompanied by birth companions, 1822 parturient adopted various birthing position and 866 vaginal deliveries required oxytocin for labour augmentation.

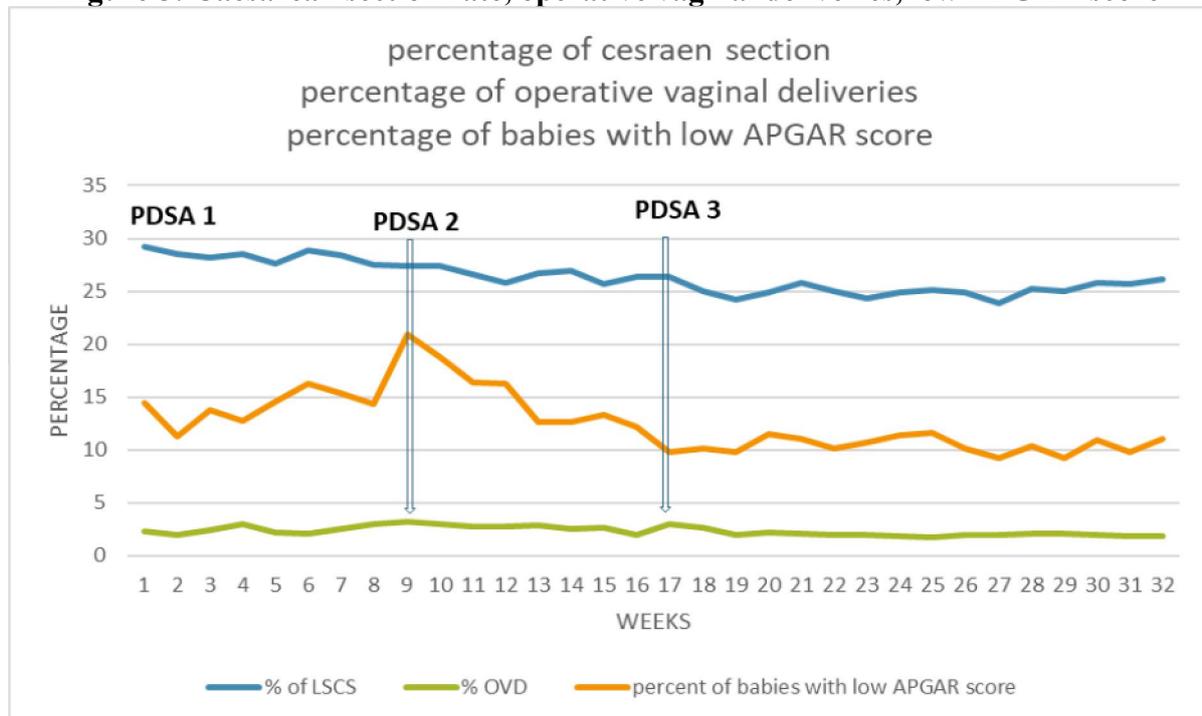
**Figure 3: Percentage of deliveries with birth companion support**



**Figure 4: Birthing positions and oxytocin need**



**Figure 5: Caesarean section rate, operative vaginal deliveries, low APGAR score**



## DISCUSSION

The beneficial findings of birth companion noted in this study are similar to those found in other similar trials of birth companion support in labour.

A retrospective randomized controlled trial of 586 participants by Della A et al, revealed that the doula group had statistically shorter total lengths of labour, more cervical dilatation at the time of epidural analgesia/anaesthesia, and higher APGAR score at 1 and 5 min. No significance was noted between the groups in caesarean delivery rate, lengths of 2<sup>nd</sup> stage of labour and epidural rate.[5]

A study by Kashanian et al showed that there was a shorter duration of first and second stage of labour, but no third stage of labour, in women with continuous or one to one support. Also, the proportion of women using oxytocin was higher in pregnant women without continuous support. Number of caesarean deliveries (4 vs 12, P=0.026) were significantly lower in the intervention group compared with the control group. the rates of oxytocin use and APGAR scores of less than 7 at 5 minutes were similar between the two groups.[6]

In a study by Man Wang et al, emergency caesarean section rate was significantly lower in women with supportive care compared to women with routine hospital maternal care(3.3% vs 24%).[7]

## STRENGTHS AND LIMITATIONS

We found that executing the Birth companion policy using PDSA cycles developed an approach reflecting local circumstances, which resulted in upgradation in Birth companion policy adherence and decrease in caesarean section rate, decrease rate in operative vaginal deliveries and reduced need of oxytocin augmentation. The core components of the PDSA cycle included leadership support, policy adaptation, and peer-to-peer training to support implementation of the policy. Knowledge among the health care workers was already present, but the attitude toward the implementation of policy was changed in the training course. Evidence of effectiveness included increased satisfaction among parturient mothers, decreased rate of caesarean section, reduced need of oxytocin augmentation, reduced rate of operative vaginal deliveries.

There were number of challenges in the adaptation of policy in COVID- 19 pandemic, such as unawareness of the birth companion policy among the new staff working in COVID labour room, fear of potential spread of the virus, need of social distancing, privacy of the parturient, staff rotation. We overcame these hurdles with the help of PDSA cycles. Establishment of supportive policies, encouragement of health care workers for birth companionship and community education of for adaptation of policies is the most essential step in implementation of policy. A continued medical education is required for understanding the advantages and potential caveats of birth companionship. A woman should be encouraged for birth companion of their choice and educated about whom to choose and what role is to be played by birth companion. A coherent approach has a pivotal role in implementing labour companionship policies at the health care facility. One should search for the possible barriers in the implementation and team of health care provider, staff, superintendent and pregnant women themselves is established for solution.

Limitations of this study – most of the women come in labour room directly in active labour, so antenatal training and counselling of birth companion is not possible, we train them intra-natally. Ours is referral centre for many nearby districts, most women came with referral note from outside, so birth companion is not planned beforehand. To overcome this, training sessions should be arranged for the health care workers in the periphery and more generalization of the concept of Birth companion policy to be done.

## CONCLUSION

In COVID-19 pandemic with already strained hospital staff, a very low-cost intervention in the form of birth companion improved birth experience of the mother, reduced need of labour augmentation, reduced caesarean section rate and operative vaginal deliveries, and increased deliveries in various birthing positions. There is an urgent need of awareness amongst health care providers at all levels.

Providing birth companion of choice is the right of every pregnant woman. The current COVID-19 Pandemic is no exception. The Pandemic must not disrupt every woman's right to high quality, respectful maternity care. So, we must end the maternity restrictions right now. There should be a professional agreement to maintain standards of care, minimum standards of companion access for all hospitals and maternity services during pregnancy.

In 'New Normal' of COVID-19, everyone should strongly adhere to birth companion policy which will result in emotional, practical and health benefits of having birth companion of choice.

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