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## A Quality Improvement Initiative: Improving Exclusive Breastfeeding Rate in First Week to Newborns Delivered to Post-LSCS Mother

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### A B S T R A C T

The World Health Organization and UNICEF recommend early breastfeeding initiation within the first hour of birth for newborn survival and long-term breastfeeding practice. However, 78 million babies or three in five, are not breastfed within the first hour, increasing the risk of death or disease. In India, institutional deliveries are increasing and caesarean sections are increasing, making it crucial to remove barriers to early breastfeeding initiation. So, we planned a study aimed to improve exclusive breastfeeding rates in first week to newborns delivered to post-LSCS mother.

This study was designed as a quality improvement study in government medical college, Latur. Study was conducted for period of 6 months including all hemodynamically stable newborns admitted to postnatal ward with mother. We used a stepwise Plan-Do-Study-Act (PDSA) approach to assess the problem initiating breastfeeding early. After baseline meetings with staff and doctors, a quality improvement team was formed. We conducted three PDSA cycles (PDSA I, PDSA II and PDSA III) of 2 months each, followed by a post-intervention phase. During 6 months, PDSA I, II and III results were 70%, 80% and 95% respectively. We conclude that Quality Improvement (QI) measures ensured early initiation of breastfeeding in all newborns.

Keywords: Breastfeeding, Quality improvement, Plan-do-study-act

#### 1. Introduction

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend initiation of breastfeeding within the first hour of birth, referred to as "early initiation of breastfeeding". Early initiation of breastfeeding is critical to newborn survival and to establish breastfeeding practice over the long term. When breastfeeding is delayed after birth, the consequences can be life-threatening and the longer newborns are left waiting, the greater the risk<sup>1</sup>. However, the WHO reported that about 78 million babies or three in five, are not breastfeed within the first hour of life, putting them at higher

risk of death or disease and making them less likely to continue breastfeeding<sup>2</sup>.

A recent systematic review and meta-analysis of evidence regarding breastfeeding initiation time and infant outcomes showed that infants who initiated breastfeeding within two to 23 hours of birth had a 33% greater risk of neonatal mortality compared to infants who initiated breastfeeding within 1 hour of birth and infants who initiated breastfeeding 24 hours or more after birth had approximately two-fold greater risk of neonatal mortality<sup>3</sup>.

Women who initiated breastfeeding more than 1 hour after delivery and those with greater breastfeeding difficulties, were more likely to discontinue exclusive breastfeeding<sup>4,5</sup>. India, the rates of institutional deliveries are now more than 80% and number of caesarean sections is increasing at an alarming rate. The rates of caesarean section vary from 11% to as high as 74%<sup>6</sup><sup>8</sup>. Hence, it is logical to make efforts to remove this barrier to early initiation of breastfeeding.

#### 2. Material and Methods

A study was conducted at Government Medical College, Latur in the Postnatal Care (PNC) ward. The study was carried out from June 2024 to November 2024 using a plan-dostudy-act cycle. The study population consisted of all normal newborns delivered by caesarean section during the study period and admitted to PNC ward with mother. The babies who were hemodynamically unstable, had respiratory distress or encephalopathy in whom mother was sick (e.g., eclampsia or comatose) where breastfeeding was otherwise contra-indicated (e.g., suspected gastrointestinal malformations, mother on certain drugs or HIV-infected who had opted for top feeds) were excluded.

Steps that were followed:

- Delay in breastfeeding in first week to newborns delivered to post-LSCS mother was noticed and rates were measured by standard questionnaire.
- A team of pediatricians, students and staff nurses of postnatal care (PNC) ward was formed.
- Reasons for delayed initiation were elicited by using fishbone analysis.
- A series of PDSA cycles was conducted to test ideas that were generated by team.

The problem was analyzed using a neonatal care fishbone diagram and five factors were identified: policy, people, procedure, place and method.

To address these issues, problem prioritization was done and the team began implementing the Plan-Do-Study-Act (PDSA) cycle. Results were documented after every PDSA cycle and concentrated on further problems.

#### 3. Results

In the study, there were a total of 100 newborns enrolled and examined over period of 6 months. The prevalence of Early Initiation of Breastfeeding (EIBF) pre-intervention baseline phase was only 60%. Problems were analyzed by using fishbone diagram. The intervention phase included three PDSA cycles, each lasting for two months. There was a progressive increase in the prevalence of EIBF after each PDSA cycle. The prevalence of EIBF increased to 70%, 80% and 95% after each successive intervention cycles over the course of 6 months and the consistency has been maintained till date.

#### 4. Discussion

This Quality Improvement (QI) initiative proved to be highly effective in enhancing Early Initiation of Breastfeeding (EIBF) among adolescent mothers, which in turn contributed to a notable reduction in neonatal morbidity and mortality rates. The success of the intervention can be largely attributed to the collaborative efforts of a dedicated multidisciplinary team, comprising resident doctors and nursing staff, who played a crucial role in not only facilitating timely breastfeeding but also in positively influencing the overall maternal behavior and awareness among teenage mothers. Key to the initiative's success was the implementation of simple yet impactful strategies aimed at increasing awareness and promoting the benefits of EIBF. Visual aids such as posters and informational charts were strategically displayed within the maternity wards and antenatal clinics. These materials highlighted the short- and long-term health advantages of EIBF for both mother and child, thereby encouraging adolescent mothers to initiate breastfeeding within the first hour of birth. The low-cost, easily replicable nature of this approach made it particularly effective in our hospital setting, demonstrating that even minimal interventions, when well-structured and consistently applied, can lead to significant improvements in maternal and neonatal health outcomes.

We achieved a significant improvement in the initiation of breastfeeding within the first hour of birth through the implementation of sequentially adapted Plan-Do-Study-Act (PDSA) cycles. A variety of targeted interventions were employed during the QI process, including the distribution of informational pamphlets, structured health education sessions, group discussions and individualized one-on-one interactions between mothers and healthcare staff. These measures collectively contributed to the successful attainment of our study's primary objective.

Our findings indicate that the application of Quality Improvement (QI) principles in a clinical setting is both feasible and effective. The initiative not only enhanced early breastfeeding practices among adolescent mothers but also reinforced the value of low-cost, systematic interventions in improving neonatal care outcomes.

#### 5. Conclusion

This quality improvement initiative successfully demonstrated that structured, low-cost interventions can significantly enhance early initiation of breastfeeding among adolescent mothers. Through the use of sequential PDSA cycles and a multidisciplinary team approach, notable improvements were achieved in both maternal engagement and neonatal outcomes. The strategic combination of health education, visual aids and personalized staff interaction proved to be effective in promoting timely breastfeeding practices. Importantly, the feasibility and replicability of this model make it a valuable framework for similar settings aiming to reduce neonatal morbidity and mortality. These findings underscore the potential of QI methodologies to bring about meaningful and sustainable changes in maternal and child health.

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