

## Improving the rate of Early Initiation of breastfeeding in a busy Government Hospital of Central India—A Quality Improvement Study

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### Abstract

**Background:** Early Initiation of Breastfeeding (within 1<sup>st</sup> hour) will improve the success with latch/suckling in first days, timely switch from colostrum to milk production, Improved milk volume at 4 days, 4 weeks, 4 months. Delayed initiation, results in failure to breastfeed leading to faulty IYCF practices and later in life leads to Severemalnutrition. The present rates of early initiation of breastfeeding is 21% in our setup so there is a need of Quality improvement in this subject. **Objectives:** To Increase the rate of early initiation of breastfeeding in normal babies (i.e, babies with birthweight > 1800 grams with no perinatal complications) in a very busy Government Hospital from existing 21% to 60% by 30 days. **Design:** Quality improvement study. **Setting:** Labor Room, Operation Theatre and PNWs and Post-Caesarian wards of a very busy tertiary care Government hospital. **Procedure:** A team of Final year Post Graduate students of Obstetrics and Gynecology, Post-Graduate student of Pediatrics, analyzed possible reasons for delayed initiation of breastfeeding by Process flow mapping and Fish bone analysis. Various change ideas were tested through sequential Plan-Do-Study-Act (PDSA) cycles. **Outcome measure:** Proportion of eligible babies breast fed within 1 hour of delivery. **Results:** The rate of first-hour initiation of breastfeeding increased from 21% to 36.7% over the study period. The result was sustained even after the last PDSA cycle, without any additional resources. The study did not achieve the expected goal because of following reasons

- Time given was less and needed more time for PDSA cycle.
- Need more training of team members.
- Lack of communication among team members.
- Perinatology includes the team of Obstetricians, Pediatricians and Anesthetists coordinate and complementation needed.

**Conclusion:** Proper communication, training, Reinforcements with Posters and Counselling may help in increasing the Early Initiation of Breastfeeding in a busy Government Hospitals.

**Keywords:** Quality Improvement, Breast Feeding, Plan-Do-Study-Act cycle.

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### Introduction

WHO and IAP recommends all mothers should be supported to initiate breastfeeding as soon as possible after birth, within the 1<sup>st</sup> hour after delivery. As per the NFHS- 4 early initiation of breastfeeding in INDIA is 41%. For all normal newborns skin-to-skin contact should be initiated in about 5 minutes of birth so that baby initiates breastfeeding in an hour of birth.

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Skin-to-skin contact between the mother and newborn should be encouraged by bedding in the mother and baby pair[1]. Early Initiation of Breastfeeding will help in improving the success with latch/suckling in initial days, timely switch from colostrum to milk production, improved milk volume at 4 days, 4 weeks, 4 months. Delayed initiation, results in failure to breastfeed leading to faulty IYCF practices and later in life leads to malnutrition. Early Initiation of Breastfeeding reduces the NMR by 22%[2]. An average of 21% of newborns in our setup are breastfed within 1<sup>st</sup> hour. This study was done to study impact of Quality improvement on early initiation of breastfeeding in our setup.

## Methods

The study was conducted in a tertiary care Government Hospital of Central India at PNW, Post-Caesarian wards, Labour room between 15<sup>th</sup> of September to 15<sup>th</sup> of October 2019. Our labor room caters to about 13,000 deliveries a year with an average Normal Vaginal delivery per day being 20 and average delivery through LSCS being 15. Attendance of pediatricians/Pediatric PG's at OT/Labour rooms are very less around 2-3/day only for those where complications are expected so most of the basic early newborn care is catered by OBG residents. The study had 2 periods – Baseline (7 days), Plan-Do-Study-Act (PDSA) (31 days). Our primary outcome was early Initiation of Breastfeeding in babies with birthweight > 1800 grams with no perinatal complications and with no maternal complications which needs ICU care like Eclampsia. The Institute Ethics Committee (IEC) approved the study. The protocols were implemented from 22<sup>nd</sup> September 2019 to 15<sup>th</sup> October 2019. The study did not involve any alteration in investigations or treatment of any patient. Broadly, the steps were as follows: (a) During the baseline period, data were collected by simple questionnaire of approximate time of initiation from the time of birth to mother and her close relative who was present at birth, (b) A team was constituted comprising four 3<sup>rd</sup> year PG resident of which one was made Team leader, Incharge senior nursing staff of Labour room and Caesarian Operation Theatre, Receptionist at labour room appointed under NHM who takes the details of all patients who come for delivery. (c) The possible causes of failure of Initiation of breastfeeding were detected by process flow mapping and fish bone analysis (Fig. 1,2,3). Further, why-why analysis led to the three main problems of (1) absent skin-to-skin contact of babies to mother (2) lack of Breastfeeding and early newborn care protocols in labour rooms or any of our obstetrics wards and (3) poor counselling to mothers and attenders by residents/nursing staffs (e) Conducting a series of Plan-do-study-act (PDSA) cycles (Table 1) to test change in ideas generated by the team leader and researchers. The effect of change in ideas was assessed by recording the proportion of newborns receiving breast feeds within first hour of life. Descriptive statistics were used to describe baseline variables. The researchers observed that after initial care baby was handed over to relatives waiting outside the labour room / OT and mother might undergo episiotomy suturing / suturing of incision and gets shifted to Labour room observation cabin which are only 4 bedded and many times it happens that 8-10 mothers will be sharing those

4 beds and will not find themselves comfortable and find it more difficult when they were asked to carry baby on abdomen, if there was no maternal complications especially with multiparous women without episiotomy sutures mother will be directly shifted to PNWs immediately after delivery without waiting in the observation cabin. In either ways the initiation of breastfeeding will be in PNWs and Post-C-Wards and never at labour rooms/OTs side room. The above three problems were addressed by (1) encouraging sisters/residents/aayabhaji to provide skin-to-skin contact for at least a period of 1 hour after cutting cord, drying and weighing the baby, administering Vitamin-K (2) drafting an early Breastfeeding protocol and setting up the poster in different parts of labour room, Post natal wards, Post Caesarian wards and outside OT complex so that the nursing staffs / OBG residents and even the attendants are very well informed about the importance of early initiation of breastfeeding, (3) OBG PG residents (2<sup>nd</sup> years and 1<sup>st</sup> years) nursing staffs and 2 Receptionists were encouraged by researchers every alternate day to counsel the mother and attenders at least once either antenatally or immediately post-partum regarding early initiation of breastfeeding. Our primary objective was to increase early Initiation of Breastfeeding from existing 21% to 60% in 30 days. During the first PDSA cycle 4 the Health care staffs were motivated by researchers by one-to-one interaction with staffs on duty in morning and night shifts every alternate day (a) to establish skin-to-skin contact of babies with the mother at Observation cabin and post-op room respectively and not handover the baby to relatives waiting outside, instead allowing one of them to stay with the mother to assist in skin-to-skin contact and support in proper placement of baby on mother to start breastfeeding (b) counsel for early Initiation of breastfeeding. During PDSA cycle 6, the researchers displayed 12 posters at 12 different sites near different obstetrics wards in and out of labour rooms so that it will be like reminder for the OBG residents to ensure the work assigned and also created awareness about the importance of early initiation among the relative and observed the rates and sustainability of the increased rates.

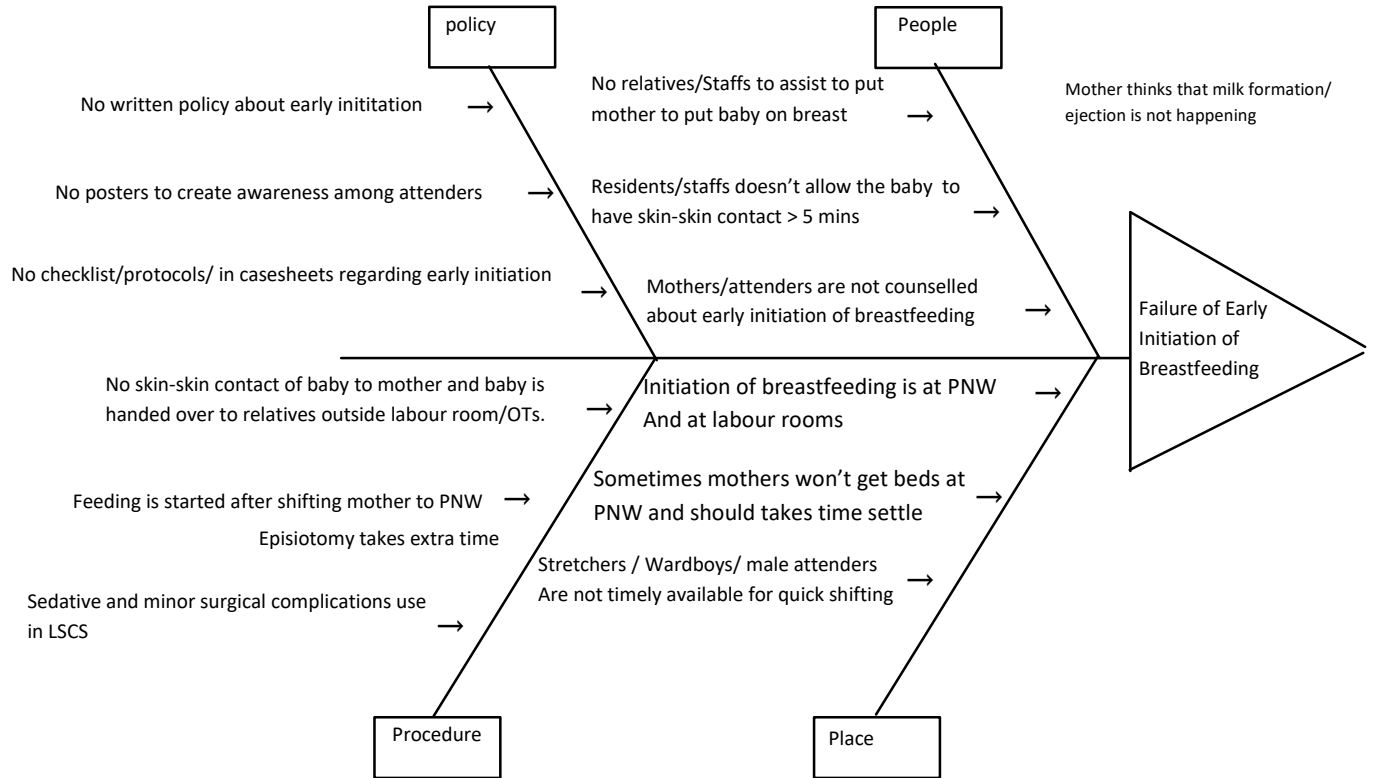
## Results

The demographic characteristics were similar in all three groups. There were 451 LSCSs and 607 NVDs carried out in the Hospital within the study period of which 181 babies were admitted in SNCU and 72 mothers were having postpartum complications/deaths.

Among 324 babies with LSCS 44 babies couldn't be traced and among 446 babies with NVDs 63 babies couldn't be traced. The mean duration of time after NVD to initiate feeding was 80 mins and following LSCS was 120 minutes. There was approximately 25% and 17% of babies born by NVD and LSCS were breastfed early. There was a statistically highly

significant increase in the rates of initiation with PDSA 6 cycle from baseline in both Normally delivered babies and babies delivered by ceserian section, but no such

significance were seen between baseline and PDSA cycle 4. Table II provide the details of outcomes in the three groups. There was a statistically significant increase in the rates of early initiation of breastfeeding when there was a reminder for the residents in the form of Posters in labour rooms and OTs and posters for the family members waiting outside labour rooms/OTs depicting early initiation of breastfeeding compared to one-to-one encouragement alone. But the aim of achieving 60% rate of early initiation was not possible.



**Fig 1: Fish Bone Diagram of problems with Early Initiation of Breastfeeding**

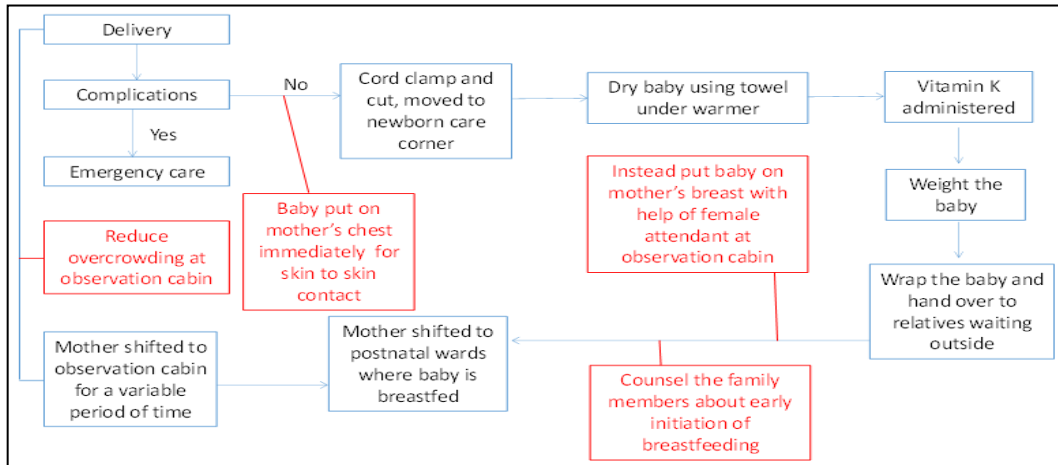


Fig 2: Newborn Care Flowchart at labour rooms

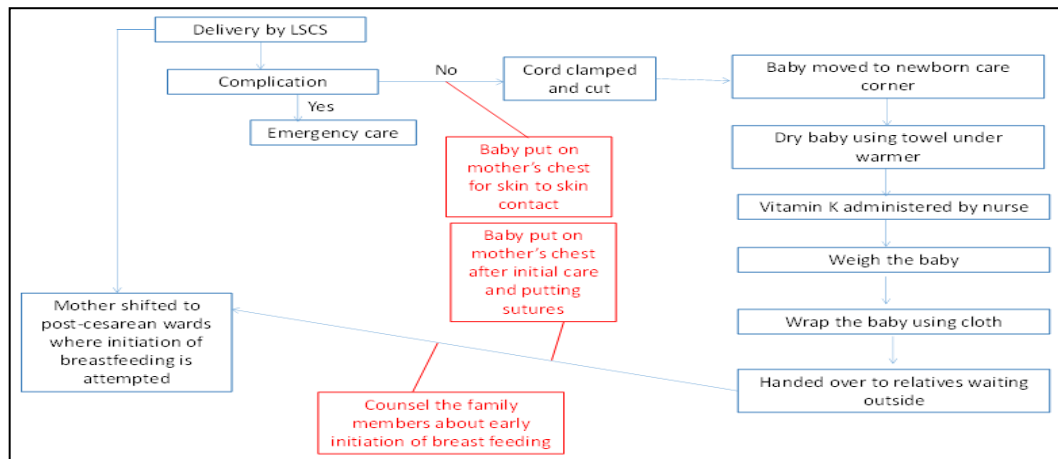


Fig 3: Newborn care flowcharts born from Cesarean Section

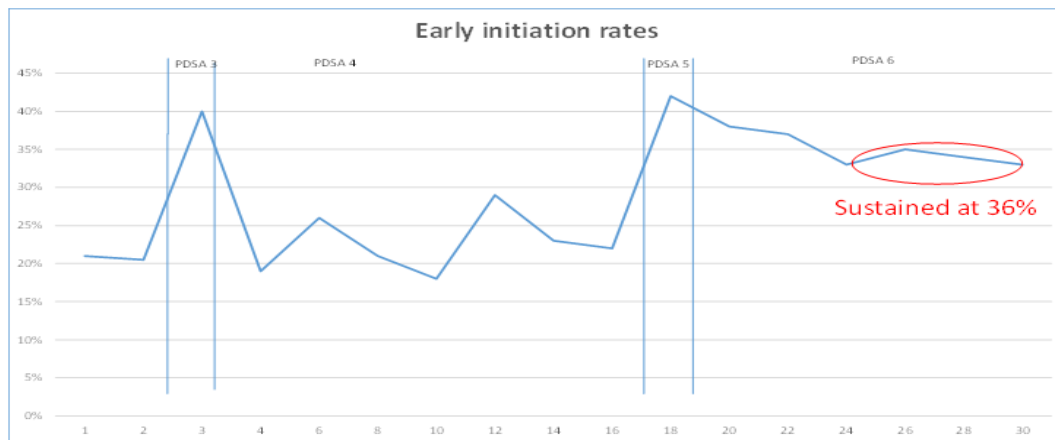


Fig 4: Change in Early Initiation of breastfeeding rates over time

**Table 1:Plan and study**

PDSA	Plan	Do	Study	Act
1 (n=2)	Assessing feasibility of initiation of breastfeeding at Labour room observation cabin	Baby was put on mothers breast by female relative by giving proper support	Practically difficult because of overcrowding with 2/3 mothers/bed, Sisters and residents busy in carrying out other ongoing labours and no healthcare worker to supervise, Mother cannot cooperate regarding changing positions because of exhaustion immediately postpartum.	Shift the haemodynamically stable mothers as early as possible to PNWs to reduce overcrowding.
2 (n=3)	Shift the more Haemodynamically stable mothers to PNW/PCWs to reduce overcrowding	The 1 <sup>st</sup> mother to have occupied among the 4 beds were examined and shifted accordingly to wards /ICUs so that single mother remain on the bed always	Post Graduate students finds themselves no time to examine and take decisions at appropriate intervals, Stretchers won't be available at right time/wardboys / male attenders won't be available to shift, Mothers will be sleeping and attender doesn't want to disturb the sleep	Counsel the female attendant/relative to start breastfeeding as soon as possible during the time of handing over baby to them.
3 (n=10)	Counsel the female attender/ relatives to breastfeed the child as soon as possible	OBG resident/sister should inform the relatives to start breastfeeding as soon as possible either in observation cabin or in PNWs	Dedicated and motivated residents carried out this small counselling while informing the relatives some of the times and forgot most of the times and nursing staffs performance was very poor.40% increase in the rates was found	This idea is more feasible and can be applied to more number of cases and analysed.
4 (n=293)	Assess the rates of early initiation of breastfeeding for next 10 days with constant encouragement of Residents of OBG	Assessment was done by simple recall method and motivation to the junior PGs were given by 4 senior PGs everyday and researchers on alternate day by one-to-one interactions	There was a 4 percent increase in rates from 21% to 25% in early Initiation of breastfeeding. Reasons for non-compliance were forgetfulness, duty changeover of residents everyday so break in continuity of a habit of counselling.	Make an attractive policy in the form of poster and setup in the Labour Room and OT complexes which will act as constant reminder for the residents to counsel and stickup such posters in public places in and around labour room and OT complexes to create awareness among family members
5 (n=13)	Prepare attractive posters and stick at and around labour room ,OTs and PNWs for residents as well as family members	12 posters were made and stuck at appropriate places	There was increase in early breastfeeding initiation rates from 25% to 47%	Implementation was expanded for more number of days and analysed for sustainability
6 (n=306)	Assess the rates of early initiation of breastfeeding for next 11 days without active motivation from researchers.	Daily rounds to PNW and PCW and simple questionnaire of time of initiation was asked to mother/attendant by recall method	The increase in rates of Early initiation was not sustained at 47% instead at 36.7%.and most of the babies were fed after mother reaches PNWs which is hindering the path of achievinggoal.	Place of initiation of breastfeeding should only be at labour room/observation cabin, and within OT/Post op cabin to achieve the aim.
7 (N = 2)	Initiate breastfeeding at labour rooms/OT	Sisters/ Residents/Aayabhajji should hold the baby on to the mothers breast	Residents/sisters/Aayaare not willing to do that as there is more important work than this. Female attenders of the mother are not allowed inside labour rooms/OTs/Post OP Ward to do such stuffs	Needs a strong will from the administrative officials of the Department of OBG to order the following of the healthy habit atlabour rooms and OTs as per the recommendations made for successful early Initiation of feeding.



**Table 2:Percentage of Early Initiation of breastfeeding**

	LSCS <sup>@</sup>			NVD <sup>#</sup>			Overall <sup>\$</sup>		
	<1 Hour	>1 Hour	Percentage	<1 Hour	>1 Hour	percentage	<1 Hour	>1 Hour	percentage
Baseline	14	66	17.5%	25	76	24.7%	39	142	21.54%
Initial 2 wks (PDSA -4)	31	109	22.45%	45	106	30.43%	74	215	25.32%
Next 2 wks (PDSA - 6)	39	80	33.06%	73	114	39.06%	112	194	36.7%

@ Proportional- chi square test between baseline and PDSA 4 – p-value = 0.38  
 Proportional chi-square test between baseline and PDSA 6 – p-value = 0.014  
 # Proportional chi-square test between baseline and PDSA 4 – p-value = 0.31  
 Proportional chi-square test between baseline and PDSA 6 – p-value = 0.013  
 \$ Proportional chi-square test between baseline and PDSA 4 – p-value = 0.34  
 Proportional chi-square test between baseline and PDSA 6 – p-value = 0.001



**Fig 5 : collage of posters being setup**

## Discussion

A statistically significant and sustained improvement in first-hour breastfeeding initiation rates in neonates born by both cesarean and Normal delivery in a busy government hospital was demonstrated but results were not satisfactory. Consecutive PDSA cycles and the blueprint for improvement was developed without any additional resources but as there was reluctance and casual approach to adapt the new change in practice among staff members they were motivated by one-to-one discussions, posters. Breastfeeding has many advantages for both the baby and the mother [5]. Along with the advantage of breastmilk, putting the newborn on breast also provides the benefits of early skin to skin contact [6]. As per NFHS-4, India has poor rate of early initiation of breastfeeding (41.6%) [2]. Cesarean sections are speedbreakers to early initiation [3]. The experience of cesarean birth, anesthesia, postop complications can be stressful to a mother [7]. Keys to successful breastfeeding include maternal-infant skin to skin (STS) contact soon after birth, initiation within first hour of birth, limiting maternal-infant separation and frequent on demand feeds [8]. The present study corroborates the findings of others that show that failure of putting the babies on mother's breast for skin to skin contact results in failure of early initiation of breastfeeding leading to faulty IYCF practices and its complications. Traditional methods for incorporating new changes without involving frontline workers only have a limited success [4]. Thus, in practice, there are always wide gaps between evidence and practice. In this quality improvement initiative, we involved only grassrootlevel healthcare workers and used scientific methods to first diagnose the root causes of the problem in the local context. Researchers engaged the PG Residents to bring out possible solutions from within themselves and tested them objectively, to learn about the challenges of implementation. Although with the help of dedicated PG residents of Obs-Gyne department, Posters displayed for attenders and healthcare staffs had helped to make a statistically significant improvement in early Initiation of breastfeeding.

## Conclusion

Increase in the rate of early Initiation of breastfeeding was possible by the display of breastfeeding protocols through posters in labour rooms, OTs and near the doctors duty rooms and also posters for the family members waiting outside labour rooms/OTs, near

PNWs depicting early initiation. Increase in rates was not that significant by continuous encouragement of residents and staffs by the researchers once every alternate day. The overall results were not upto the expected mark because

- Time given was less and needed more time for PDSA cycle
- Need more training of team members.
- Lack of communication among team members.
- Perinatology includes the team of Obstetricians, Pediatricians and Anesthetists coordinate and complementation needed

## Key-message

Early Initiation of breastfeeding strategy by using the quality PDSA methodology, has the potential to increase early initiation rates and reduces NMR, but it needs an active participation from department of Obstetrics, Pediatrics and Anesthesiology.

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