

Colostrum Feeding of Neonants of Recently Delivered Women in Home Based Newborn Care in Uttar Pradesh, India

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ABSTRACT:- When ASHAs were introduced in NRHM in 2005, their primary aim was to visit homes of newborns as the first program in UP operated through the ASHAs was the Comprehensive Child Survival Program in 2008. Since then, tracking of all deliveries and all the newborns are an integral part of the work of ASHAs in all the primary health care programs operated by the NHM in UP (GOI, 2005, GOUP, 2013). The current article examines the role & work of ASHAs through the responses of the mothers of newborns at district level. Evaluation studies on the performance of ASHAs was done since 2011 as by then ASHAs had actually worked in the field for a minimum period of 5 years. It is to be noted that National Rural Health Mission was rolled out in April 2005 but it took about one to two years for the states to hire ASHAs and put things in place right from the state to the village level (GOUP, 2013). In this article, a comprehensive feedback is elicited from the Recently Delivered Women on bathe & weight of their newborn as part of newborn care program at the district level.

The current study explores some of the crucial variables on the home-based newborn care activities like colostrum feeding of the newborn through the response of mothers of newborns on newborn care. Early Initiation of Breastfeeding (EIBF) or colostrum feeding of newborn in child health programs is a critical component & the current article follows up the role of ASHAs in Home Based Newborn Care program through the response of the mothers. The mothers were selected as respondents as they were the selected mothers from the list of mothers available with their ASHAs at the time of survey.

The relevance of the study assumes significance as data on the details of the breastfeeding of newborn in hours & days as a component of child health & newborn programs are not included in many surveys. Further, response details from the mothers on these three options on colostrum feeding are usually not collected in many studies/surveys. Such responses that collect actual actions on the colostrum feeding thereby indirectly assessing the work & approach of ASHAs including their awareness on the programs related to Early Initiation of Breastfeeding (EIBF) are not the focus in very large-scale health surveys. Such response on these three EIBF related activities of newborn care through the work of ASHAs in the current implemented programs do not come under the ambit of many social studies or surveys. The surveys gain more teeth when the response is solicited from the horse's mouth like the current article.

A total of four districts of Uttar Pradesh were selected purposively for the study and the data collection was conducted among the mothers in the respective districts. A pre-tested structured & in-depth interview schedule was used with close-ended questions. These in-depth interview schedule collected descriptive details as responded by mothers. The quantitative data were conducted amongst the mothers and a total of 500 respondents participated in the study.

The results reflected that majority of the Recently Delivered Women in the 4 selected districts told that they breastfed their baby immediately/within an hour of birth. Here it is seen that the performance of ASHAs was better for the EIBF indicator in all the 4 selected districts.

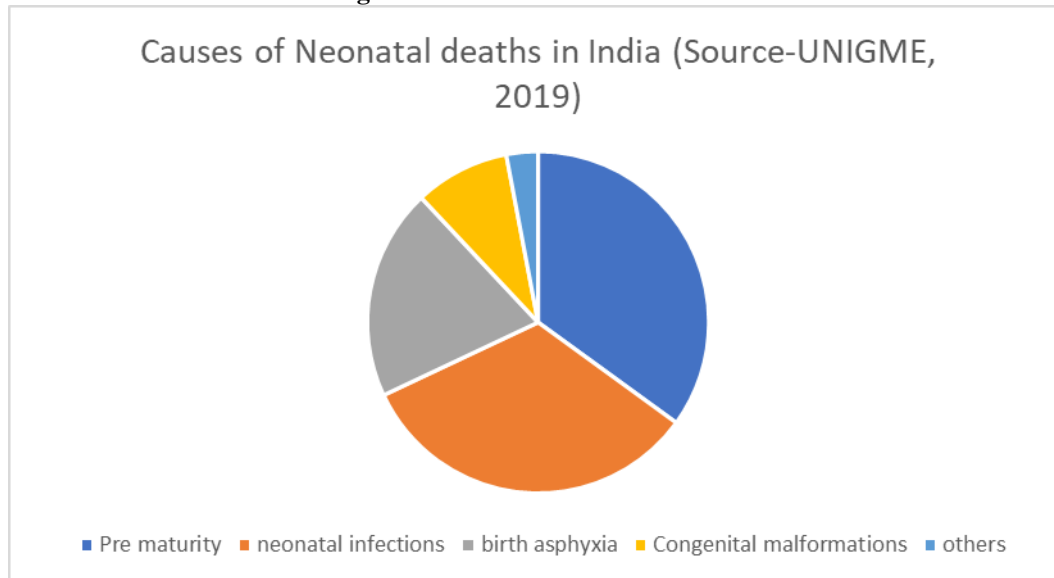
Key words:- ASHA, Colostrum, HBNC, EIBF, Immunoglobulins

I. INTRODUCTION

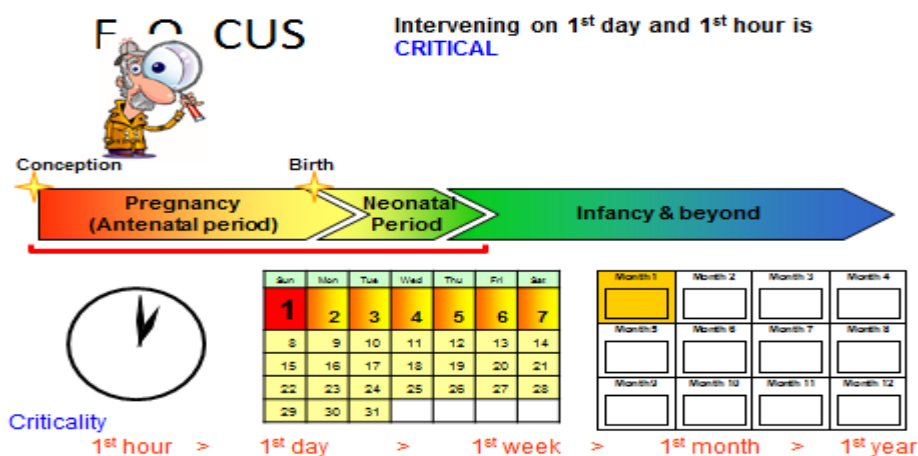
The current study focused on the responses of mothers of the four selected districts. Response of the mothers on colostrum feeding of their newborns. The responses were based upon their current knowledge about the messages on child health & newborn care programs. The responses included three aspects of colostrum feeding of newborn care that is when was the child breastfed for the first time after birth & if breastfed whether it was within an hour, if not an hour then what was the day of breastfeeding from the day of delivery. Colostrum feeding of the newborns is a must & especially for the Low Birth Weight (LBW) babies. These babies have weight less than 2500 grams & delay in colostrum feeding leads to hypothermia in the newborn. Hypothermia leads to infections. Hence, it is prudent to mention about studies that mention about causes of deaths in newborns out of which infections are a leading cause. This aspect is discussed in the next section. The following paragraphs deals with the mortality figures in children for which infections in newborns is a cause & the basics on Home Based New Born Care (HBNC) program.

The HBNC components have addresses the three needs of the newborns. The three needs are warmth, food, security. The warmth component includes activities like drying & wrapping the child immediately after birth followed by giving Skin to Skin Contact (STSC) by the mothers so that the child gets the warmth of the mother through the skin of the mother. The mother should not have any cloth between the newborn & herself. Both of them should be covered from the top & the child should be kept in frog position between the breasts with the mouth & nose sideways so that the child can respire. Human beings learnt this technique from the Kangaroo where the newborn of the Kangaroo is in the pouch of the mother deriving warmth from the skin of the mother. The newborn of the Kangaroo breastfeeds within the pouch. Thus, the newborn safely travels the first month of life. The mother is the best warmer for the child which no Radiant warmer can substitute. The next activity is to delay the bathing of the child at least for a week after birth so that the Vernix Caseosa or the natural blanket that the child has on the skin is not removed & hypothermia in the child is prevented. Next component is food which is the Exclusive Breast Feed (EBF) of the child. This demands that other than ORS in case of diarrhoea, Vaccines & prescribed medicines in case of sickness, the child should not be given anything till 6 months of age. Water is also not allowed as the breast milk has enough water for the child. The third component is security where the child should not be left alone in any case for the first month of life. The KMC package includes STSC & EBF activities. As all these activities can be done at home with out any intervention from the health system, the package is called as HBNC package (GoI, INAP, 2014). To ensure that all these activities takes place at home, the outreach worker like ASHA should visit the mother during pregnancy to plan for HBNC & during postnatal stage to ensure implementation of these activities. The following paragraph deals with the reality that occurs if all these activities do not happen during the neonatal stage of life.

The current Neonatal Mortality Rate (NMR) in India is 22 per 1000 live births & the same data hold good for UP as NMR is calculated at the national level. In absolute numbers, it stands out at 549227 (UNIGME, 2019). Similarly, EIBF reduces the Maternal Mortality as it eases the placental delivery & reduces the chances of Post- Partum Haemorrhage (PPH). The importance of colostrum feeding is felt when the Maternal Mortality Rate & Ratio (MMR) of UP is examined. The MM Rate in UP is 20.1 & the MM Ratio is 216. Further, the Life Time Risk (LTR) of a mother in UP is 0.7% (SRS,2019). All these high mortality & risk factors can be reduced with promotion of EIBF in UP. The causes of these deaths are mentioned in the figure given below. Prematurity is the leading cause category where the low Birth Weight (LBW) babies fall & the current article deals in colostrum feeding of the new-borns where these LBW babies find it difficult to suck the breast of the mother. Neonatal infection is the second leading cause and here it is related to poor thermal care & EIBF is a component of thermal care. Timely referrals will also help address to reduce other causes like infections & asphyxia for which hypothermia is a contributing factor. It is here that the relevance of the current article comes into focus.

Figure 1- Causes of Neonatal deaths

A newborn is a boy or girl in the age group of 0-28 days. The care of the newborn had taken a paradigm shift since the introduction of NRHM in 2005 as the focus had moved from only facility-based care to a mix of home based and facility based. In fact, the WHO bulletin of 2012 stated that India's Home-Based Newborn Care (HBNC) model launched in 2011 can be touted as a global policy. The foundation stone of these efforts were through the experiences in Gadchiroli region of Maharashtra where since last 14 years it has been demonstrated that there was 62% reduction in neonatal mortality through multiple home visits by community level workers (Bang A, 2005). On the same lines, in NRHM, the ASHAs needed to visit the new mothers and newborns six times in case of an institutional delivery and seven times in case of a home delivery. The days of visits in case of institutional delivery were on the 3,7,14,21,28 and 42 days after birth and 1,3,7,14,21,28 and 42 days after birth in case of a home delivery (GOI, 2011). The mortality pattern of newborns showed that 72.9% die in the first week and only 13.5% die in the 2nd, 3rd and 4th weeks after birth. Similarly, 36.9% die on day 0, 7.4% on day 1, 10.1% on day 2, 6.6% on day 3, 5.1% on day 4, 3.4% on day 5 and 3.5% on day 6 (Sankar, MJ. et. al, 2016). This showed that first week was extremely critical for the newborn to be visited by the ASHA. The current study that was being pursued focused on the HBNC model as per the India Newborn Action Plan only. ASHAs visited more than 12 lakhs newborns in 2013 (INAP, GOI, 2014). Incentivized Home-Based Newborn Care program was launched in 2011. More than 6 lakhs ASHAs had been trained to improve newborn care (INAP, GOI, 2014). The figure below depicted the critical 1st year, 1st month, 1st week, 1st day and 1st hour in an infant's life and re-emphasized that intervening on 1st day and 1st hour is critical.

Figure 2- Critical times of the infancy stage (Source- Sankar, MJ. et. al, 2016)

Thus, it was critical to note that 40% of all still births and neonatal deaths occurred within first 48 hours. About three fourths of the total neonatal deaths occur in the first week of life. 37% of these deaths occur within first 24 hours. It was significant to note that during this period, half of all maternal deaths also took place (Sankar, MJ. et. al, 2016).

Among the HBNC, warmth component was very critical. A newborn baby is homoeothermic. A low birth weight baby has decreased thermal insulation because of reduced amount of brown fat. Newborn loses heat by evaporation (amniotic fluid by surface), conduction (touch with cold object), convection (fan, window) where cold air replaces warm air. The warm and pink feet of the baby indicate thermal comfort. The behaviors like delayed bathing, delayed weighing and kangarooing in case of low birth weight babies contribute to warmth of the baby (NNFI, 2015). It further summarized to address three components which were clean airway, breathing and temperature.

The warmth component is extremely critical for low weight babies because if they are not kept warmth, they would not feed and will not gain weight in early neonatal period. Timely visit by ASHAs are critical to ensure proper care leading to weight gain in these babies. Low weight neonates were more prone to communicable diseases like diabetes, hypertension and heart disease in later life (Blencowe, et. al, 2010).

About Colostrum & Preterm milk

Human milk contains more tryptophan, Sulphur containing Amino Acids especially cysteine, linoleic acid, oleic acid, sugar in the form of lactose & water as compared to animal milk. The constituents of 100 grams or 100 ml of human breast milk contains 65 Kilocalories energy, 7.4 grams of carbohydrate, 3.4 grams of fat & 1.1 grams of protein (Singh M, Saini S, PSM Book, 2020).

Colostrum is the first milk after delivery 7 usually available within first 3 days of delivery. The milk is rich in immunoglobulins like IgA, IgM, IgG, essential amino acids & maternal antibodies. It appears yellow & thick. It also has more antibodies and White Blood Corpuscles (WBC), has anti infective agents like Lactoferrin, Lysozyme, Lacto-peroxidase, Complements, Proline rich Polypeptides. It is also rich in vitamins A, D, E, & K. It has less fats & is rich in growth factors. It is sweet to taste & protects against infection while having a mild laxative effect that helps to pass early stools (Singh M, Saini S, PSM Book, 2020).

If the baby is a pre-term baby, the mother secretes preterm milk that has more calories, fat, proteins, sodium, Immunoglobulins, Lactoferrin, Zinc, Macrophages, Less Lactose, Calcium & Phosphorus. It supplies more energy which is needed for rapid growth (Singh M, Saini S, PSM Book, 2020).

EIBF of newborns in UP

The Maternal & Child Health Nutrition report of UP mentions that the practice of breastfeeding within one hour of birth increased by 5 times in the end line where the base line figure was around 4% & the end line figure was 21.9% (GoUP, MCHN report, 2006). The report does not mention about tracking of other modalities on time related to EIBF. In another study in UP, breastfeeding practices are seen in detail under selected newborn care practices where the timing of the newborn's first feed is mentioned in hours & days. Among the respondent mothers, 2.4% responded that their newborn was never breastfed, another 5% were categorized as early breastfeeding where the mothers responded that the first breastfeeding was within six hours of birth while 0.8% responded that the feed took place within 7-23 hours after birth. Similarly, 6.5% mothers responded they breastfed their baby for the first time one day after birth. Another related indicator on EIBF reflected that 85.3% of mothers reported that their newborn was breastfed for the first time after 2 or more days after birth (Baqui A H et.al, 2007). Thus, the report shows that majority of the mothers did not adhere to the ideal practice of feeding colostrum within one hour of birth.

The Comprehensive Child Survival Program evaluation report mentions that as per the Eligible Women (EW), 58.4% of them received Kangaroo Mother Care services through the home visits of ASHAs. Further, 79.5% of EW reported giving colostrum to their newborns. Colostrum feeding of the newborn is related to nutrition care & KMC is also related to thermal care (GoUP, CCSP, 2013). Regarding timing of the colostrum feed to the newborn, 52.2% of Eligible Women (EW) reported that their newborn was breastfed within one hour of birth, 29% replied that they fed within 1-24 hours, 11.7% replied feeding within 2-3 days, 6.4% replied feeding after 3 days while 0.6% replied that they never breastfed their newborn (GoUP, CCSP, 2013).

The NFHS 4 report of UP under the indicator of nutritional practices of children mentions that 25% of newborns receive colostrum feeding within one hour of birth & 68% were put to the breast in the first day of life

(NFHS 4, 2016). The report does not talk about the days or hours of breastfeeding or colostrum feeding of the newborns as responded by their mothers. These are the issues that the current article deals with.

The ASHA evaluation report of 2013 in UP notes that 38.3% of newborns were visited by ASHAs 6 to 7 times while mentioning nothing about EIBF (GoUP, 2013).

Here, it is noted that among the above-mentioned studies, one study done in 2006 mentions only one indicator of EIBF. Another study in 2007 talked about breastfeeding practices through the hours & days while another in 2013 also mentions the hours & days of colostrum feeding. As it is a cultural practice, the current study done in the end of 2017 could bring out this issue to augment that the early breastfeeding practices for newborn still prevail in UP. The current article focuses upon the aspects of EIBF indicator of new-born & the above-said reasoning further substantiates the importance of the current article.

II. RESEARCH METHODOLOGY

Using purposive sampling technique, four districts were chosen from the four different economic regions of UP, namely Central, Eastern, Western and Bundelkhand. Further, the Government of UP in 2009 categorized the districts as per their development status using a composition of 36 indicators. Purposefully, the high developed district chosen for the study is Saharanpur from the western region, the medium developed district chosen for the study is Barabanki from the central region, the low developed district chosen for the study is Gonda from the eastern region and the very low developed district chosen for the study is Banda from the Bundelkhand region (GOUP, 2009).

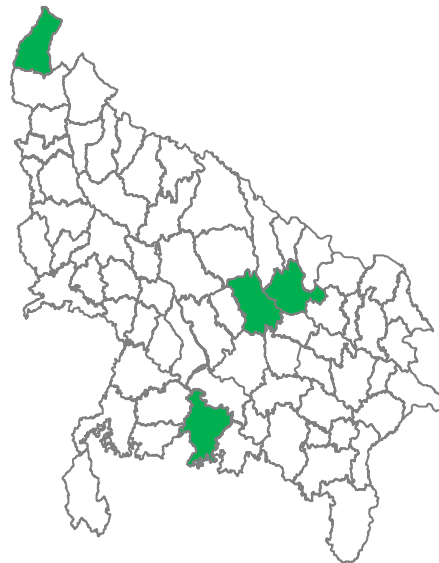
In the next step, purposefully two blocks were selected from each of the district and all the ASHAs in these blocks were chosen as the universe for the study. From the list of all the ASHAs in each of the two blocks, 31 ASHAs were chosen randomly from each block for the study. In this way, 62 ASHAs were chosen for the study from each of the districts. In Gonda district, 64 ASHAs were selected to make the total number of ASHAs for the study to 250. From the catchment area of each ASHA, two Recently Delivered Women (RDW) were chosen who had a child in the age group of 3-6 months during the time of the data collection for the study. In this way, 124 RDWs from three districts and 128 RDWs from Gonda district were chosen thus a total of 500 RDWs were selected for the study. In order to include the category of caste & inclusion issue in to the domain of the study, 5 Scheduled Caste (SC) mothers from each district were selected from the existing list of ASHAs. As each district has two selected blocks, three mothers were selected randomly from one block & the other two from the other block. The existing list of Recently Delivered Women (RDW) available with the ASHAs at the time of the survey was the universe for selecting the respondents. In this way, a total of 20 SC mothers were selected from the study. The criteria for choosing these mothers were that they had a 3 to 6 months old baby at the time of survey to fulfill the inclusion criteria of being an RDW for the current study or article.

The study had a last stage of the sampling as well. In the last stage, the four program managers looking after the program at the four selected districts and the state level manager were selected as respondents to include the perspective of the personnel of the public health system. In this way, 5 managers were selected in the study & the study also dealt with the responses of these 5 program managers.

The current article deals with the sampling stage till the selection of 500 RDWs from the four districts.

The following figure shows the four districts of UP in the map of the state of UP.

Figure 3- Selected districts of the study



Data analysis

The data was analyzed using SPSS software to calculate the percentage of RDWs giving responses for each of the indicators on Early Initiation of Breast Feeding of newborns. The quantitative data related to the details of all these type of responses through the three options for the four districts forms the basis of the results & discussions section of this article. The reference period of these responses was their entire experience with the health system & contacts with the ASHAs since their last delivery. These mothers were selected as respondents of the current study or article. Five hundred mothers or RDWs (as they are called for the current article) were selected from the four selected districts of UP.

Research tool

The RDWs were interviewed using a close-ended detailed interview schedule which included five sections. The article deals with the fifth section of the schedule. The response of the mothers was on the detailed description of their actions regarding EIBF component of Home Based New Born Care in their recent delivery. These descriptions included the timing aspects of EIBF of the child health & new-born program guidelines. The responses are based on one question of the schedule indirectly seeing the role of ASHAs in newborn care programs through the response of the mothers. The first option was the timing of the first breast feeding of newborns in hours followed by the first day of birth & thereafter the second day of birth. All these aspects were seen in the context of the RDW's entire experience & contacts with the health system & ASHAs with respect to their recent delivery. The responses included RDWs who had either institutional or home deliveries. Five hundred in-depth interview schedules were used for the study to interview 500 mothers at the four selected districts. The following section details out the results and discussions related to the study.

III. RESULTS AND DISCUSSIONS

There is one table in this section that mention three different activities regarding EIBF component of HBNC and the activities are in sequence. It starts with the response of the Recently Delivered Women (RDW) about breast feeding of newborns for the first time after birth. The first response is whether it was done in the first hour after birth. The next two activities are whether the breast feeding was done within a day or same day as birth or after the first day of birth. The responses revolve around whether their newborns received colostrum after birth followed by the actual time of receiving the colostrum. The three activities deal with identification of high-risk newborns as colostrum is crucial for Low Birth Weight babies.

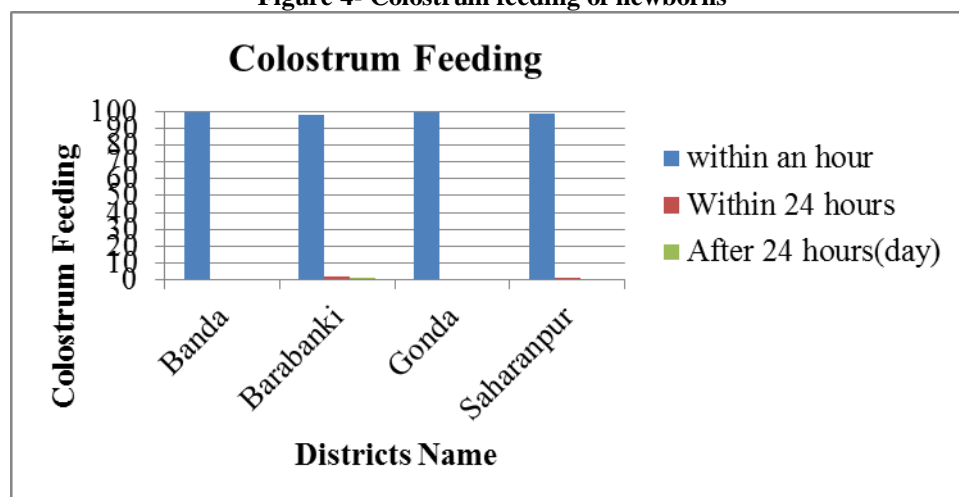
Table 1- EIBF & RDWs

Percentage of RDWs who initiated breastfeeding their newborn within one hour of birth				
Names of districts & Number of RDWs surveyed (N=500)	Banda (N=124)	Barabanki (N=124)	Gonda (N=128)	Saharanpur (N=124)
Immediately/ within an hour	100	98.4	100	99.2
Within 24 hours	0.0	1.6	0.0	0.8
After 24 hours(day)	0.0	0.0	0.0	0.0

The action of RDWs on EIBF across the 4 districts was the next part of this table. Here we found that only 2% RDWs in Barabanki and 1% in Saharanpur told that they breastfed their baby within a day of the birth of the baby. Majority of the RDWs in the 4 districts told that they breastfed their baby immediately/within an hour of birth. Here the performance of ASHAs was better in all the 4 districts.

The following figure was the graph related to the table and results.

Figure 4- Colostrum feeding of newborns



IV. CONCLUSIONS

The above results showed that the response of the RDWs is in favor of poor thermal care & not in favor of delayed bathing. The major problem is that culturally people still believe that the substances like Vernix Caseosa is dirty & will spread the infections in newborn. Large scale studies do not focus on this aspect any more as institutional delivery focus has reduced the focus on home deliveries. The opportunities, challenges & the future plans in newborn care programs should focus on thermal care as home deliveries still happen in spite of the scale up of the Janani Surakhya Yojana that promotes institutional deliveries.

The thermal care & weighing component of the programs like newborn & child health would only improve if the ASHAs & AWWs make home visits & follow up on the progress of the newborn within a day of delivery. This strategy would help in more delayed bathing care practices in home deliveries. The weighing process would identify the Low Birth Weight (LBW) babies & make the high-risk newborn referrals of the ASHAs effective & timely there by improving the program progress through the eyes of the community & the public health system.

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