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STUDY OF MATERNAL AND FETAL OUTCOME IN REFERRED AND BOOKED CASES AT GRMC, GWALIOR

Gynaecology

Preeti Sharma Assistant Professor, G.R. Medical College, Gwalior District, Madhya Pradesh.

Sanjeev Kumar Sharma* Associate Professor, Department of Radiodiagnosis, S. S. Medical College, Rewa, Madhya Pradesh. *Corresponding Author

ABSTRACT

INTRODUCTION: Provision of adequate and timely emergency obstetric care (EmOC) has been recognized as the most important intervention for saving lives of pregnant women who may develop complications during pregnancy or childbirth. The operationalisation of First Referral Unit at sub-district/CHC level for providing EmOC to pregnant women is a crucial strategy of RCH-II, which needs focused attention. In antenatal period early registration regular visits, improvement in maternal nutrition, high risk identification, institutional deliveries by skilled birth attendants, prompt and timely referral to a hospital for appropriate interventions and management would be the measures needed to make motherhood safe.

AIM: To study the demographic profile of referred and booked pregnant women in labour, the maternal and perinatal outcome, indication of referral, mode of delivery and the rate of operative interference in referred verses booked cases.

MATERIAL AND METHOD: Present study is a prospective hospital based, randomized observational study conducted in Department of Obstetrics and Gynaecology, GRMC, Gwalior MP from July 2017 to September 2018. The present study comprises demographic profile of 72 referred versus 72 booked pregnant women in labour who were admitted. Documentation related to referral from PHC, CHC or district hospital was obtained from referral slips and relatives to ascertain her to be a referred case. Booked cases were taken randomly as control.

RESULTS: In referred group 50.92% and 65.27 % in booked were between 21-25 yrs of age group. While 30.5% referred and 18.0% in booked were between 26-30 yrs. In referred group 5.5% women were brought in very poor condition and needed resuscitation. Condition was not satisfactory in 18.0% referred and 12.0% in booked cases also. In referred group indication of CS was 17.44% in obstructed labour, 10.46% due to fetal distress, 9.30% previous section, 15.11% breech and 9.30% CPD. In referred group 74.07% babies were born as alive & healthy, 1.38% was fresh still born, 6.48% IUD. 14.81% babies required nursery care, 3.24% babies died within 7 days. In referred group total perinatal deaths were 11%, while 1.85% in booked. In refereed group (45.0%) were referred from PHC, (30.0%) from CHC and (24.46%) from district hospital. 91.20% of cases had 1st referral. Only 8.79% of cases had 2ndreferral.

CONCLUSION: We need to ensure every woman the right to safe motherhood. In making pregnancy safer, three factors are vital- 1. Every pregnancy should be wanted. 2. All pregnant women must have access to skilled care. 3. All pregnant women must be able to reach a functioning health care facility when complications arise.

KEYWORDS

Pregnant women, Booked and Referral cases, Maternal and Fetal Outcome.

INTRODUCTION:

"Efficient antenatal care is preventive medicine at its best" (Alexander GR et al)[1]. Antenatal care which had its beginning in 1901 when Ballantyne published his 'Plea for a promaternity hospital'. Effective antenatal care (ANC) can improve the health of the mother and give her a chance to deliver a healthy baby.

Provision of adequate and timely emergency obstetric care (EmOC) has been recognized as the most important intervention for saving lives of pregnant women who may develop complications during pregnancy or childbirth. The operationalisation of First Referral Unit at sub-district/CHC level for providing EmOC to pregnant women is a crucial strategy of RCH-II, which needs focused attention.

Each year in India, roughly 30 million women experience pregnancy and 27 million have a live birth (MoHFW, 2003c)[2], of these, an estimated 136,000 maternal deaths and one million newborn deaths occur each year. In addition, millions more women and newborns suffer pregnancy and birth-related in health. Thus, pregnancy - related mortality and morbidity continues to take a huge toll on the lives of Indian women and their newborns, (Registrar General India, Survey of causes of death (rural), 1998[3].

According to UN 2010 only five years left until the 2015 deadline to achieve the MDGs. Globally the annual percentage decline in MMR between 1990 and 2008 was only 2.3%. MMR with gradual decline in developing countries with good referral system.

In antenatal period early registration regular visits, improvement in maternal nutrition, high risk identification, institutional deliveries by skilled birth attendants, prompt and timely referral to a hospital for appropriate interventions and management would be the measures needed to make motherhood safe.

In India recently advances have been made available to the urban population in India, but they still remain beyond the reach of most of the rural masses. Who are still unaware of the benefits of modern obstetrics and continue to live in presemmelwiess era.

More than 75% of the population of India and Gwalior region lives in villages and below poverty line. Majority of the obstetric problems in rural area are due to poverty, ignorance, customs, religious beliefs, social tabboes and non-availability of quality obstetric care.

The lack of medical facilities, trained doctors and nursing staff further contribute to the obstetric problems. The poor transport facilities though improved in past 1½ years play an important role in delay or non utilization of obstetric services available in peripheral block hospitals as recently called BEmONC, CEmONC.

AIMS:

To study the demographic profile of referred and booked pregnant women in labour eg. age, distance, residence, education, occupation and number of referrals. To study the obstetric profile of referred and booked pregnant women in labour. To study the factors influencing the maternal and perinatal outcome eg. distance from tertiary care centre, literacy, and general condition on admission, stage of labour, fetal heart status on admission and history of interventions. To study the indication of referral, mode of delivery and the rate of operative interference in referred verses booked cases.To compare the maternal and fetal outcome in both the groups. To suggest recommendations to improve present status of parturients.

MATERIALAND METHOD:

Present study is a prospective hospital based, randomized observational study conducted in Department of Obstetrics and Gynaecology, GRMC, Gwalior MP from July 2017 to September 2018. The present study comprises demographic profile of 72 referred versus 72 booked pregnant women in labour who were admitted. Documentation related to referral from PHC, CHC or district hospital was obtained from referral slips and relatives to ascertain her to be a referred case. Booked cases were taken randomly as control. All pregnant women with severe anemia, pregnancy induced hypertension and gestational diabetes are included in either of the groups. There

were no exclusion criteria.

The outcome of pregnancy in 144 cases, 72 cases in referred and booked group each was studied. These two groups were compared regarding their age, parity, distance from hospital, literacy status, socioeconomic status, mode of delivery, intrapartum, postpartum complications and fetal outcome. An attempt was made to find the quality of care received at different levels of Maternal and Child Health care delivery system and further suggest measure to improve it.

Examination of patients: General Examination were Routine physical examination which included nutritional status, height, weight, pallor, pulse, temperature, blood pressure, oedema, and clubbing was noted. A thorough systemic examination was carried out for evidence of any disease involving the CVS, CNS, RS and abdominal examination for evidence of liver and spleen enlargement was noted. Obstetric Examination: Height & Shape of uterus above pubic symphysis in terms of weeks was noted. Lie, position, presentation and presenting part engaged or not was noted. Presence or absence, Rate, rythym, intensity of fetal heart sound was recorded. Quantity of liquor assessed clinically.

Investigation:

1. Hb, urine examination, blood sugar, urea, serum billirubin, HIV done in all cases.
2. Complete hemogram in cases with severe anemia. Blood sugar, serum uric acid, serum creatinine, SGOT, SGPT, platelet count in cases with eclampsia, PIH.
3. Urine culture and sensitivity in cases with UTI.
4. Fundus examination in cases with preeclampsia, eclampsia, diabetes.
5. USG in some high risk cases.

Nature of Labour:

Nature of delivery was noted whether spontaneous, augmented by oxytocin or operative interference. In case of operative interference, indication of operation and type of anaesthesia was noted.

Complications of third stage of labour like- PPH, perineal injuries, laceration in cervix and vagina, retention of placenta, inversion of uterus were also noted.

Examination of Baby:

Baby was examined for approximate gestational age, sex, and weight. If still birth whether fresh or macerated. Cry whether immediate or delayed, evidence of congenital anomaly, birth trauma was noted. Baby was examined for respiration jaundice, cyanosis, when needed resuscitative measures were carried out and babies were shifted for nursery care accordingly.

Puerpeurium:

Patients were observed for temperature, pulse, involution of uterus, nature of lochia, fever, and bleeding, lactational status, wound infection of episiotomy and postoperative complications. The data thus collected were tabulated, results obtained were compared with those given by several other workers from different parts of India and abroad.

RESULTS:

Table-1 Demographic profile of patients

Residence	Referred (n=72)		Booked (n=72)	
	No.	%	No.	%
Urban	16	22.22	28	38.80
Rural	56	77.77	44	61.20
Distance in KM				
<25	19	26.39	44	61.11
25 to 50	28	38.89	21	29.16
51 to 75	16	22.22	07	9.73
>75	09	12.50	-	-
Age (in years)				
15 to 20	05	6.94	10	13.88
21 to 25	36	50.00	46	63.88
26 to 30	22	30.55	13	18.05
31 to 35	06	8.35	03	4.16
>35 yrs	03	4.16	-	-
Literacy				
Illiterate	27	37.50	09	12.50
Primary	16	22.22	21	29.17
8th Standard	19	26.38	19	26.38
High School	10	13.88	12	16.67
>HSC	-	-	11	15.28
Gravidity				
Primi Gr	37	51.38	48	66.66
2nd Gr	20	27.77	19	26.38
3rd Gr	08	11.11	03	4.16
4th Gr	04	5.55	02	2.77
5th Gr & Above	03	4.16	-	-
General Condition of Mother on Admission				
Fair	43	59.72	63	87.50
Not Satisfactory	14	19.44	09	12.50
Poor	11	15.27	-	-
Very poor	04	5.55	-	-
Condition of fetus				
FSH normal	54	75.00	68	94.45
FSH abnormal	08	11.11	03	4.16
FSH absent	10	13.89	01	1.39
Stage of Labour				
1st Stage	60	83.33	70	97.22
2nd Stage	08	11.11	02	2.78
3rd Stage	01	1.39	-	-
4th Stage	03	4.16	-	-

43 (59.72%) in referred and 63 (87.50%) of cases in booked had fair condition at the time of admission. The condition of 13 (18.05%) in referred group and 9 (12.50%) patient in booked group was not satisfactory at the time of admission. 4 (5.55%) of cases in referred group were brought in very poor condition.

In the present study 83.33% in referred group and 97.22% in booked came in 1st stage of labour, while 10.64% in referred and 2.77% in booked were admitted in 2nd stage of labour. In referred group 4.62% cases were referred in 4th Stage of labour.

Table-2 Diagnosis at the time of admission

Diagnosis at the Time of Admission	Referred (n=72)		Booked (n=72)	
	No.	%	No.	%
PROM	12	16.66	08	11.11
Mal Presentation	11	15.27	07	9.72
S. anemia (Hb <6gm%)	08	11.11	01	1.39
Pre-eclampsia	07	9.72	04	5.55
Eclampsia	03	4.16	-	-
Obstructed labour	06	8.33	01	1.39
PPH	04	5.55	-	-
Preterm labour	04	5.55	01	1.39
Previous LSCS	03	4.16	02	2.78
CPD	01	1.39	04	5.55
Twins	02	2.78	01	1.39
S. oligohyramnios	01	1.39	01	1.39
Placenta Previa	01	1.39	01	1.39
Post dated	01	1.39	03	4.16
Rupture Uterus	01	1.39	-	-
Miscellaneous	04	5.55	04	5.55
No complication	03	4.16	34	47.22

Table-3 Distribution of patients according to mode of delivery

Mode of Delivery	Referred(n=68)		Booked(n=72)	
	No.	%	No.	%
LSCS	28	38.88	07	9.72
NVD	20	27.77	54	75.0
SVD	07	9.72	04	5.55
Assisted breech	03	4.16	03	4.16
Preterm Delivery	03	4.16	01	1.39
Instrumental deliveries	01	1.39	01	1.39
Certified undelivered	01	1.39	-	-
Twin deliveries	02	2.78	01	1.39
Vaginal birth after caesarian	01	1.39	01	1.39

Caesarean Hysterectomy	01	1.39	-	-
Exploratory lap f/b repair of uterus	01	1.39	-	-
Indication of CS	**Referred(n=26)**		**Booked (n=08)**	
	No.	**%**	**No.**	**%**
Obstructed labour	05	6.94	-	-
Breech	04	5.55	01	1.39
Fetal distress	03	4.16	02	2.78
Previous LSCS	03	4.16	02	2.78
CPD	03	4.16	01	1.39
Transverse LIE with hand with cord prolapse	02	2.78	-	-
Compound presentation	02	2.78	-	-
Placenta Previa	01	1.39	01	1.39
Severe oligo hydramnios	01	1.39	01	1.39
Antepartum Eclampsia	01	1.39	-	-
Twins	01	1.39	-	-

Most of the babies, 39 (54.16 %) in referred and 48 (66.66 %) in booked had birth weight between 2.5-2.99 kg. 06 (8.33%) in referred and 10 (13.88%) babies in booked had birth weight between 3.0-3.49 kg.

In the present study 53 (73.61%) babies in referred and 65 (90.27%) in booked were born alive & healthy. Perinatal deaths were 8 (11.11%) in referred whereas 01 (1.39%) in booked.

Table-4 Frequency of puerperal complications

Complications	**Referred (n=72)**		**Booked (n=72)**	
	No.	**%**	**No.**	**%**
Fever	21	29.16	06	8.33
Distension	12	16.66	01	1.39
Wound Sepsis	11	15.27	01	1.39
RTI	07	9.72	03	4.16
Wound gaping	04	5.55	01	1.39
UTI	01	1.39	01	1.39
No complications	16	22.22	59	81.95

Table-5 Perinatal outcomes

Types	**Referred (n=72)**		**Booked (n=72)**	
	No.	**%**	**No.**	**%**
Alive Healthy Babies	54	75.0	64	88.88
Nursery care	11	15.27	06	8.33
IUD	04	5.55	01	1.39
Fresh still birth	01	1.39	-	-
Early neonatal deaths	02	2.78	01	1.39

Severe anemia was the most common indication of blood transfusion in both referred as well as booked. 05 (38.46%) in referred and 01 (1.39%) of patients in booked had severe anemia as in indication of blood transfusion. 3 (4.16%) of patients in referred had PPH as indication of blood transfusion. 06 (43.58%) in referred and 04 (66.66%) patients in booked group had only one blood transfusion. 14 (35.89%) patients in referred and 6 (33.33%) patients in booked group had two blood transfusion. Only in referred group 8 (20%) moribund cases required 3rd & 4th blood transfusion.

DISCUSSION:

In the present study, out of 72 cases in referred group 77.77% of cases were from the rural area and 22.22% of cases from urban area, while in booked group 38.80% of cases were from rural and 61.20% of cases were from urban area. (Table 1) These findings are similar to those made by WHO 30 cluster survey in India from June to Oct.1999, where 72.9% booked cases belonged to urban group and 27.1% cases belonged to rural population.

Pendse V and Bansal[4] (1989) found 95.6% of booked pregnant mothers from urban and only 56.6% of referred pregnant mothers from rural area. In referred group most of the pregnant women (38.89%) came from 25-50 kms while in booked group majority of pregnant women (61.11%) were from <25 kms. 12.50% of pregnant mothers in referred group came from > 75 kms. Most of the cases referred were serious and complicated and they require blood transfusion and operative interference. (Table 1) In the present study majority of the pregnant women in both referred and booked group were between 21-25 yrs of age group which were 50.00% of cases in referred group and 63.88% of cases in booked group were between 21-25 yrs of age group. 30.55% of cases in referred and 18.05% of cases in booked were between 26 to 30 yrs of age group. (Table 1) 51.38 % of cases in referred group and 67.59 of cases in booked group were primigravidae. Grand multipara constituted 4.16% among referred group only. (Table1) D.B. Dumir et al[5] (1984) found 44.04% of primigravidae and 15% of multiparas in referred cases, Limaye et al[6] (1980) noted 32.4% of primi and 15.2% of multipara. V. Pendse et al[4] (1989) noted 38% of primigravidae among the rural admission. (table 1)

In our study we observed that 37.50% 0f pregnant women in referred group and 12.50% of pregnant women in booked group were illiterate. 26.38% of cases both in referred and booked group were studied upto middle school. (Table 1) 59.72% of cases in referred group and 87.50% of cases in booked group had fair condition at the time of admission. The condition of 19.44% of cases in referred group and 12.50% of patient in booked group was not satisfactory at the time of admission. 5.55 % of cases in referred group were brought in very poor condition. (Table 1)

In referred group, 13.89% of cases had absent FHS on arrival to hospital, 11.11% had abnormal FHS and 80.29% had normal FHS. While in booked group, only 1.39% had absent FHS and 94.45% had normal FHS. (Table 1)

Limay et al[6] (1980) also noted 13.6% cases with absent fetal heart sound. High risk mothers being unrecognized of their risk factors is an important cause of such fetal jeopardy.

In our study we observed that in referred group 83.33% of pregnant women were admitted in 1st stage, 11.11% of women were brought in 2nd stage and 4.16% of cases were admitted in 4th stage of labour. Whereas in booked group 97.22% of cases were admitted in 1st stage and 2.78% of cases were admitted in 2nd stage of labour. This shows delay in seeking advice, failure to timely recognition of high risk factors and delay due to distance and lack of transport facility. Maximum cases belong to rural area. (Table 1)

PROM was the most common diagnosis at the time of admission in both referred and booked, 12 (16.66%) in referred and 08 (11.11%) in booked. 2nd most common finding was Malpresentation 11 (15.27%) in referred and 7 (9.72%) in booked group.3rd most common was Preclampsia 08 (11.11%) and Eclampsia 3(4.16%) in referred group. 08 (11.11%) in referred had severe anemia while only 1 (1.39%) in booked group had severe anemia. (Table 2)

Out of 68, 20(27.77%) in referred and 54 (75.0%) in booked group had normal vaginal delivery. 28 (38.88 %) in referred and 7 (9.72%) in booked had LSCS. 1(1.39 %) in referred group were certified undelivered. (Table 3) The incidence of normal vaginal delivery in referred group was 30.04% which is close to findings of Owolabi AT et al[7]. (38.8%) (2008).

Limaye et al[6]. (1980) noted 42.8% vaginal deliveries,9.6% forceps in referred cases. D.C. Dutta[8] (1978) noted incidence of 3.7% CS in rural obstetric practice.

A comparative study in Tikur Anbessa hospital by Barley K et al[9] (2004) has shown that the caesarean section rate increased from 7.7% in 1986/1987 to 25.6% in1998/1999 with a change in common indication from previous caesarean section to fetal distress.

In above table Obstructed labour 15(18%) was the most common indication of CS in referred group while fetal distress 8 (38.09%) was the most common indication of CS in booked group. Our results are similar to Belgrave S. et al.[10](2003), Sheikh L et al.[11](2010). (Table 3)

Fever was the most common puerperal complication, in referred 21(29.16%) as well as in booked 6 (8.33%) cases. Other common complications were postoperative distension and wound sepsis, 16.66% & 15.27% in referred as compared to 1.39% & 1.39% in booked group respectively. P.W. Howie (1988) observed fever as a common early perpeural complication in 56.2% of cases. Ajibayo Akinkujbe[12] (1996) observed that abdominal pain reported by 37.1% of study population and majorities were managed conservatively with mild analgesic and dietary advice. (Table 4)

In the present study in referred group 75.0% of babies were born alive & healthy baby, 15.27% of babies required nursery care, 5.55% of IUD babies, 2.78% of babies died within 7 days, 1.39% were fresh still born.

(8.33%) Perinatal deaths were observed in referred group. Surabhi Sharma et al[13] (2007) reported 74.01% live births, 25.98% still births and 9.25% neonatal deaths and total perinatal mortality of 30.63% in the referred cases. It shows that perinatal outcome has improved in our health system in terms of good referral system, improved operation theatre and anaesthesia facility.

At D.K. Hospital, Raipur (1990-91) the perinatal mortality in the referred cases was 49.7%.

Gadhiali et al[14] (1980) reported a perinatal mortality of 28.20%.

In the M.Y. hospital Indore study (1997 - 98), the total perinatal mortality was 39.89%.

Most of the babies, 39 (54.16%) in referred and 48 (66.66 %) in booked had birth weight between 2.5-2.99 kg. 06 (8.33%) in referred and 10 (13.88%) babies in booked had birth weight between 3.0-3.49 kg.

53 (73.61%) babies in referred and 65 (90.27%) in booked were born alive & healthy. Perinatal deaths were 08 (11.11%) in referred whereas 1 (1.39%) in booked.

SUMMARY:

In the present study, out of 72 cases in referred group 77.77% of cases were from the rural area and 22.22% of cases from urban area, while in booked group 38.80% of cases were from rural and 61.20% of cases were from urban area. In referred group most of the pregnant women (38.89%) came from 25-50 kms while in booked group majority of pregnant women (61.11%) were from <25 kms. 12.50% of pregnant mothers in referred group came from > 75 kms. In the present study majority of the pregnant women in both referred and booked group were between 21-25 yrs of age group which were 50.00% of cases in referred group and 63.88% of cases in booked group were between 21-25 yrs of age group. 30.55% of cases in referred and 18.05% of cases in booked were between 26 to 30 yrs of age group. In our study we observed that 37.50% 0f pregnant women in referred group and 12.50% of pregnant women in booked group were illiterate. 26.38% of cases both in referred and booked group were studied upto middle school. In referred group, 13.89% of cases had absent FHS on arrival to hospital, 11.11% had abnormal FHS and 80.29% had normal FHS. While in booked group, only 1.39% had absent FHS and 94.45% had normal FHS. In our study we observed that in referred group 83.33% of pregnant women were admitted in 1st stage, 11.11% of women were brought in 2nd stage and 4.16% of cases were admitted in 4th stage of labour. Whereas in booked group 97.22% of cases were admitted in 1st stage and 2.78% of cases were admitted in 2nd stage of labour. PROM was the most common diagnosis at the time of admission in both referred and booked, 12 (16.66%) in referred and 08 (11.11%) in booked. 2nd most common finding was Malpresentation 11 (15.27%) in referred and 7 (9.72%) in booked group.3rd most common was Preclampsia 08 (11.11%) and Eclampsia 3(4.16%) in referred group. 08 (11.11%) in referred had severe anemia while only 1 (1.39%) in booked group had severe anemia. Out of 68, 20(27.77%) in referred and 54 (75.0%) in booked group had normal vaginal delivery. 28 (38.88 %) in referred and 7 (9.72%) in booked had LSCS. 1(1.39 %) in referred group were certified undelivered. In above table Obstructed labour 15(18%) was the most common indication of CS in referred group while fetal distress 8 (38.09%) was the most common indication of CS in booked group. Fever was the most common puerperal complication, in referred 21(29.16%) as well as in booked 6 (8.33%) cases. Other common complications were postoperative distension and wound sepsis, 16.66% & 15.27% in referred as compared to 1.39% & 1.39% in booked group respectively. In the present study in referred group 75.0% of babies were born alive & healthy baby, 15.27% of babies required nursery care, 5.55% of IUD babies, 2.78% of babies died within 7 days, 1.39% were fresh still born. (8.33%) Perinatal deaths were observed in referred group.

CONCLUSION:

There are many factors which determine the pregnancy outcome. By providing the standard maternal and child health services, much can be done for the betterment of parturient. It is evident from the present study, the maternal and perinatal morbidity and mortality can be reduced by adequate antenatal care facilities to the pregnant mothers. Improving the literacy status of women and providing proper transport and communication, help in better utilization of antenatal health care services. Referral centers must be well equipped with blood transfusion and anaesthesia facilities, proper instruments, trained paramedical staff and specialist services.

We need to ensure every woman the right to safe motherhood. In making pregnancy safer, three factors are vital

a. Every pregnancy should be wanted.
b. All pregnant women must have access to skilled care.

All pregnant women must be able to reach a functioning health care facility when complications arise.

Few recommendations are made to reduce the maternal and perinatal morbidity and mortality-

- There should be an increased emphasis on health education. All resources of mass media should be employed to educate people regarding important parameters. The rural population must be made aware of various complications of pregnancy, delivery, self surveillance and importance of early booking and regular antenatal checkup. They should be told about the myths and false beliefs.
- Screening and selection of high risk antenatal cases in the community is essential. Adequate SBAs and supervision during all deliveries should be provided and greater mobility of back up facilities.
- Sincere efforts are required to improve the quality of MCH care at the rural community level (proper history taking, palpation, blood pressure, risk factor screening and referral). The birth attendants and health workers should be trained to identify danger signs in pregnancy and labour.
- We need to improve quality of care at the primary health care level (emergency care and proper referral). All PHC to be upgraded, to be made in to BEMoNc.
- There should be provisions for proper communication and early transport for emergency referrals e.g. flying squad services should be made available at all centers.
- Facilities for blood bank and blood transfusion services need to be developed at periphery.

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