Research Paper

Volume : 2 | Issue : 2 | Feb 2013 • ISSN No 2277 - 8179

Medical Science

KEYWORDS : Maternal health, Emergency obstetric care, Caesarean Section Rate(CSR)

Maternal Health Beneficiary Scheme: Impact on Emergency Referred Cases at Tertiary Referral Hospital

Dr. Arti J. Patel — Professor and Head of the unit, obstetrics and gynaecology department, Smt.N.H.L. Municipal Medical College

Dr. Hardik P. Chauhan — 3rd year resident doctor, obstetrics and gynaecology department, Smt.N.H.L. Municipal Medical College

ABSTRACT

This is a preliminary prospective analysis on to analyse the impact of maternal health beneficiary scheme on emergency referred cases at tertiary referral hospital and to study the feto-maternal outcome in of the same cases. Data were analysed in two phases, after implementation of maternal health care beneficiary scheme from September2012 to November2012 and also before implementation of maternal health beneficiary scheme from June2012 to august2012. After implementation of the scheme,most of these patients were referred to our tertiary care centre for antepartum, intrapartum or postpartum complications, to get the advantage of maternal health beneficiary scheme at our tertiary care hospital. After implementation of the scheme, leading causes of reference in emergency were pregnancy induced hypertension (42.9%), eclampsia (10.3%), anaemia (49.6%), antepartum haemorrhage (12.6%), postpartum haemorrhage (20.9%) and financial incapability (20.5%). In PIH and related complications, incidence has increased from 58.4% to 81.7%. In anaemia, incidence has increased to 49.7%. In APH, incidence has increased from 10.1% to 25.3%. In PPH, incidence has increased from 11.7% to 41.8%. There is significant increase in caesarean section rate up to 45.7%. This is preliminary prospective study can give vision that the scheme needs to be strengthened by modifying its some aspects with more emphasis on parity, prior registration and postnatal follow up to improve fetomaternal outcome. Further studies are required to access the technical difficulties or qualities of the care, mortality impact of referred cases and overall burden to the medical and paramedical staff of tertiary health care centre.

OBJECTIVE:

- To analyse the impact of maternal health beneficiary scheme on emergency referred cases at tertiary referral hospital
- To study the feto-maternal outcome in of the same cases.

STUDY DESIGN:

- Preliminary prospective analysis of defined subject.

BACKGROUND:

Women play a pivot role in the family, and pregnancy care should culminate in healthy mother with a healthy baby. Maternal morbidity and mortality is a vital index of the effectiveness of prevailing obstetric services and socioeconomic affluence of a country [1, 2]. Various social, cultural, and political factors determine the status of women, their health, fertility and health seeking behaviour.

It is estimated that about 1.2 million children in the Gujarat state are born each year, including both institutional and domiciliary deliveries. Given that the mortality rate for the state is estimated at 172 per 100000 live births (3), an estimated 2,064 of these mothers die from maternal cause. The primary reasons for these maternal deaths are that the majority of deliveries are not attended by skilled persons, lack of availability of emergency obstetric care, and less postnatal follow up. It is argued that most of these maternal deaths are avoidable with adequate intervention, such as skilled birth attendance, referral services, and access to emergency obstetric care (4-7). Families below poverty line are most vulnerable since they face significant risk due to their poor socioeconomic status and limited access to healthcare services (8).

Institutional mortality and morbidity rates are higher as compared with field surveys because most of the seriously ill patients are referred to the nearest tertiary care centres. The government has launched various schemes to promote institutional deliveries and reduce maternal morbidity and mortality. We undertook this study to evaluate the impact of recently implemented scheme on the referral cases, maternal morbidity, and maternal mortality at tertiary health care centre.

MATERIAL AND METHOD:

This is a preliminary prospective analysis of all obstetric patients getting benefits of maternal health care beneficiary scheme in obstetric department of SMT. S.C.L.GENERAL HOSPITAL affiliated to SMT.N.H.L.MUNICIPAL MEDICAL COLLEGE, AHMEDABAD.

All patients admitted in labour room and getting benefits of maternal health care beneficiary scheme were included in the study.

Data were analysed in two phases, 1st prospectively after implementation of maternal health care beneficiary scheme from September2012 to November2012 and also retrospectively before implementation of maternal health beneficiary scheme from June2012 to august2012.

Each record was scrutinised for age, parity, prior hospital registration,, indication for admission at our tertiary care centre, taken antenatal care or not, any associated antenatal high risk factors, associated intrapartum or postpartum complications, modalities of treatment offered at our centre and their feto-maternal outcome as per proforma. Two groups were compared to find out any changing trend in feto-maternal morbidity and mortality.

OBSERVATION AND DISCCUSSION:

TABLE-I DEMOGRAPHIC PROFILE OF THE PATIENTS

PROFILE	GROUP-I AFTER IMPLEMENTATION		(%)		GROUP-II BEFORE IMPLEMENTATION		(%)	
	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES
AGE IN YEAR								
<20	218	16	21.5	22.9	182	22	20.4	33.8
21-30	590	40	58.12	57.1	568	25	63.7	38.5
>30	207	14	20.4	20	141	18	15.8	27.7
GRAVIDITY								

G1	96	11	9.5	15.7	94	8	10.5	12.3
G2	268	13	26.4	18.6	246	10	27.6	15.4
G3	413	28	40.7	40	271	26	30.4	40
MULTIGRAVIDA	238	18	23.4	25.7	280	21	31.4	32.3
RESIDENCY								
RURAL	88	08	8.6	11.4	70	6	7.9	9.2
URBAN	927	62	91.4	88.6	821	59	92.1	90.8
ANTENATAL CARE								
YES	612	38	60.3	54.3	659	22	74	33.8
NO	403	32	39.7	45.7	232	43	26	66.2

- Above table shows demographic profile of the patients attending obstetric department of Smt.S.C.L.General Hospital during study period.
- Group I includes patients after and group II includes before implementation of maternal health beneficiary scheme.
- In both groups, most of the patients (>50%) were belonging to 21-30 years of age group.
- In group- I majority of patients were third gravida while in group- II majorities of patients were multigravida.
- In both groups majority of patients were from urban population
- Total 59.9% of patients in group -I had taken antenatal care while in group-II, 71.2% patients had taken antenatal care. This changing trend of increasing emergency referral to our centre is because of implementation of this beneficiary scheme.
- In group-I, 60.3% patients out of total registered patients and 54.3% out of total emergency patients had taken available and accessible regular antenatal visits.
- In group-II, 74% patients out of total registered patients and 33.8% out of total emergency patients had taken available and accessible regular antenatal visits.
- In group-I emergency patients showed higher rate of antenatal care in available and accessible health care centres. Most of these patients were referred due to associated antepartum, intrapartum or postpartum complications, to get the advantage of maternal health beneficiary scheme at our tertiary care hospital.
- Sharma [9] and the ICMR Task Force Study of 1993-1994 reported an almost similar demographic profile [10].
- Not only more number of patients but critically more ill patients have been referred for operative interventions, blood transfusion, or for utilisation of NICU facilities.

TABLE-II INDICATIONS FOR EMERGENCY REFERRAL

INDICATIONS	GROUP-I		(%)		GROUP-II		(%)	
	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES
PREGNANCY INDUSED HYPERTENSION(PIH)	278	43	24.4	61.4	190	28	19.9	43.07
ECLAMPSIA	7	14	0.68	20	7	10	0.8	15.4
ANAEMIA	254	52	25.0	74.3	210	51	23.6	78.5
ANTEPARTUM HAEMORRHAGE(APH)	11	17	1.08	24.3	10	6	0.98	9.23
POSTPARTUM HAEMORRHAGE(PPH)	18	28	1.8	40	10	7	0.98	10.8
BLOOD TRANSFUSION	100	22	9.9	31.4	87	19	9.8	29.2

- Above table shows correlations of major indications of emergency referral in both registered and emergency patients of both groups.
- In group-I, 25% of total registered and 81.4% of total emergency patients had preeclampsia and eclampsia. Where in group-II, 20.7% of total registered and 58.47% of total emergency patients had preeclampsia and eclampsia. ($P<0.05$) Significant increase in referral to tertiary centre of patients with PIH and related complications after implementation might be because of inability to manage imminent complications associated with PIH to mother and baby.
- Anaemia is another major indication for referral at tertiary health care centre. In group-I, 25.02% of total registered and 74.3% of total emergency patient had anaemia, where as in group-II, 23.6% of total registered and 78.5% of total emergency patient had anaemia($P<0.05$).
- In group-I, though higher number of patients with regular antenatal care, due to unevaluated iron supplementation during antenatal period, incidence of anaemia is higher. This may be because of nutritional deficiency or low standard of living, warm infestation, other chronic infectious disease. According to WHO, incidence of anaemia in pregnancy ranges widely from 40-80% in developing countries.
- According to National Family Health Survey data, Gujarat has progressed, although slowly towards the use of better maternal healthcare in the last decade [11].
- In modern obstetrics haemorrhage is still a major complication either antepartum or postpartum. In group-I, 24.3% of total emergency cases referred for APH and 40% for PPH where as in group 2, 9.2% for APH and 10.8% for PPH ($P<0.001$).
- Difficulties in availability of blood and its components, financial constraints, maternal critical condition resulting from this haemorrhagic condition requiring ICU facilities may be the cause of emergency referral to tertiary centre from private sector.
- Antepartum, intrapartum, postpartum complications rate was higher in emergency referred cases in group-I as compared to group-II.
- Not only more number of patients but critically more ill patients had been referred for operative interventions, blood transfusion, or for utilisation of NICU facilities.

Volume : 2 | Issue : 2 | Feb 2013 • ISSN No 2277 - 8179

TABLE-III MATERNAL OUTCOME

	GROUP-I		(%)		GROUP-II		(%)	
	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES
VAGINAL DELIVERY	690	38	67.98	54.3	654	42	73.4	64.6
CAESARIAN SECTION	325	32	32.01	45.7	237	23	26.6	35.4
HYSTEROTOMY	0	0	0	0	2	1	0.2	1.5
MATERNAL MORTALITY	1	3	0.098	4.3	0	0	0	0

• Above table shows comparison of maternal outcome in registered and emergency patients in both groups. Higher rate of caesarean section was in group-I (38.9%) as compared to group-II (31%), rising especially in emergency referred cases. Increase maternal mortality rate of our institute after implementation of maternal health beneficiary scheme.

• Higher rate of caesarean section in emergency referred cases after implementation of this scheme was due to high rate of referral associated with obstetric complications from private sectors as well as from lower centres [12].

• Rising maternal mortality rate at our tertiary care centre does not show alteration of obstetric care provided at our institute but it is directly reflecting higher number of referred moribund obstetric patients ending into maternal mortality.

TABLE-IV FETAL OUTCOME

	GROUP-I		(%)		GROUP-II		(%)	
	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES	REGISTERED CASES	EMERGENCY CASES
PREMATURE DELIVERY	48	14	4.7	20	50	15	5.6	23.07
STILL BIRTH	1	1	0.98	1.4	2	0	0.2	0
INTRAUTERINE DEATH	15	6	1.5	8.6	29	5	3.3	7.7
BABY NEEDED NICU ADMISSION	264	47	26	67.1	207	33	23.2	50.8
NEONATAL DEATH	8	11	0.8	15.7	7	9	0.8	13.8

- Above table shows comparison of fetal outcome in registered and emergency patients in both groups.
- In group-I, NICU admission rate was 26% of total registered and 67.1% of total emergency cases, where in group-II, NICU admission rate was 23.2% of total registered and 50.8% of total emergency cases.
- Neonatal death rate was also rising from 13.8% in group-II to 15.7% in group-I in emergency referred cases.

CONCLUSION:

This is a preliminary prospective study on MATERNAL HEALTH BENEFICIARY SCHEME: IMPACT ON EMERGENCY REFERRED CASES AT TERTIARY REFERRAL HOSPITAL. This scheme includes free delivery irrespective of their parity, prior registration, associated complications, mode of delivery and hospital stay resulting into considerable increase in emergency referral patients at the tertiary referral centre. Present study reflects the perception of emergency referral load after the implementation of Recent innovative of maternal health beneficiary scheme in Gujarat state irrespective of their financial status.

Majority of the patients (58.12%) are of age group 21-30 years, multigravida (64.9%), and from urban population (90%).Reason for reference after implementation of the same has significantly increased. In PIH and related complications, incidence has increased from 58.4% to 81.7%. In anaemia, incidence has increased to 49.7%. In APH, incidence has increased from 10.1% to 25.3%. In PPH, incidence has increased from 11.7% to 41.8%. There is significant increase in CSR up to 45.7%. The leading causes of reference in emergency were PIH (42.9%), eclampsia (10.3%), anaemia (49.6%), antepartum haemorrhage (12.6%), postpartum haemorrhage (20.9%) and financial incapability (20.5%).

Referral made by private practitioner/PHC/CHC should be analysed to ensure that they are doing so to avoid more expensive treatment or because of limitations of management in their setup. Further studies are required to access the technical difficulties or qualities of the care, mortality impact of referred cases and overall burden to the medical and paramedical staff of tertiary health care centre.

This is preliminary prospective study can also give vision that the scheme needs to be strengthened by modifying its some aspects with more emphasis on parity, prior registration and postnatal follow up to improve fetomaternal outcome.

REFERENCE

1. Shankar J,Sheetharam S Maternal Mortality: 10 years review a decade of safe motherhood. J Obstet Gynecol India. 2001; 51; 108-10. | 2. Kulkarni Sunanda R, Huligol A. Maternal mortality;10 years study. J Obstet Gynecol India. 2001; 51; 73-6. | 3. Registrar General Of India ;1997-2003; trends,causes and risk factors; New Delhi; Registrar General Of India;2006 | 4. Malvankar DV, Rosenfield A.Maternal mortality in resource- poor settings; policy barriers to care. Am J Public Health. 2005;95;200-3 | 5. Resenfield A, Main D, Freedman L, Meeting MDG5, lancet, 2006;368;1133-4 | 6. Koblinsky M., Matthews Z, Hussein J, Mavalankar D, et al. Going to scale with professional skilled care, Lancet.2006;368;1377-86 | 7. Mavalankar D, Singh A, Bhatt R, Desai A, Patel SR. Indian public private partnership for skilled birth attendance .Lancet 2008;371;631-2 | 8. Department for International Development. Reduse maternal deaths; evidence and action ;a strategy for DFID.London; department for International development;2004 | 9. Sharma N. Maternal mortality; a retrospective study of 10 years. J Obstet Gynecol India. 2001; 51:60-2. | 10. Bedi N, Kambo I, Dhillon BS, et al. Maternal deaths in India- preventable tragedies (An ICMR Task Force Study). J Obstet Gynecol India. 2001;51:86-92. | 11. International; Institute for Population Sciences, National Family Health Survey II;Gujarat report; maternal and child health .Bombay: international institute for population science ;2000 | 12. Khare S, Singh KN, Kalkur S. Maternal mortality in Jabalpur Medical College. J Obstet Gynecol India. 2002:52;51-2 | 13. Jayaram Kamala V. Review of maternal mortality. J Obstet Gynecol India. 2001; 51:80-2. | 14. Patel DA, gangopadhyay S, Vishnav SB, et al. Maternal mortality at Karamsad- the only Rural Medical College in Gujarat. J Obstet Gynecol India. 2001;51:63-6 | 15. Bhattacharyajee S. A study on maternal mortality in Silchar Medical College and Hospital. J Obstet Gynecol India. 2001;51:67-70 | 16. Verma A. Minhas S, Sood A. A study on maternal mortality. J Obstet Gynecol India. 2008;58:226-9 | 17. Sahu L, Rani R, Soundararaghavan S. Changing trends in maternal mortlity. . J Obstet Gynecol India. 2008;11:24-9 | 18. Veille J-C. Maternal mortality. Prog obstet gynecol. 2008;18:125-42. | 19. Ramesh Bhat, Dilip Mavlankar J Health Popul Nutr, 2009 april 249-258 | 20. Department of health and family welfer:2009, State programme implementation plan:reproductive and child health II . |