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ECONOMIC ANALYSIS OF INSTITUTIONAL DELIVERIES IN PUBLIC HOSPITAL

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ABSTRACT

Nearly all maternal deaths occur in the developing world, making maternal mortality the health statistic with the largest disparity between developed and developing countries. Maternal causes are responsible for 18 percent of deaths in women in less developed countries. A key component of safe motherhood is the eradication of anemia during pregnancy. Several interventions coverage of basic pregnancy-related care, promoting institutional deliveries, expanding access to and quality of basic and Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) and maternal death audits. Two major reform initiatives are currently underway in Tamil Nadu; the Tamil Nadu Health System Development Project (TNHSDP) and the National Rural Health Mission (NRHM). Both initiatives address reproductive and child health as priorities. The present study was undertaken in Virudhunagar Head district hospital in Virudhnagar district with secondary data. TNHSP should be strengthening CEmONC centre in this Region. Anaemia is neglected problem and needs to be adult with on priority basis. Routine iron supplementation should be given to women of childbearing age in general, and during pregnancy and postpartum in particular, to cover losses during delivery and location.

Keywords: Maternal, Neonatal Deaths, Anaemia and Cost

Setting

The Millennium Development Goals (MDG) set a target of reducing Maternal Mortality Ratios (MMR) by three-quarters between 1990 and 2015 (UN, 2005). The World Health Organization (WHO) estimates that 536,000 women die in 2005 from pregnancy-related causes, and almost all

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of these deaths occur in developing countries (WHO, 2007). Nearly all maternal deaths (99 percent) occur in the developing world, making maternal mortality the health statistic with the largest disparity between developed and developing countries (Safe Motherhood Initiative, 2002). Maternal causes are responsible for 18 percent of deaths in women in less developed countries (World Bank, 1993). A recent study of trends in MMR from 1990 to 2005 found a significant decrease of 2.5 percent per year globally, but with no significant decrease in sub-Saharan Africa, which fell by 1.8 percent from 921 per 100,000 in 1990 to 905 per 100,000 in 2005 (Hill et al., 2007).

Lack of skilled care at delivery and maternal mortality and morbidity are key factors in these deaths. The high MMR, combined with high fertility rates, lead to a lifetime risk of dying in pregnancy of one in 16 in developing countries, compared to one in 2,800 in developed countries (WHO 2005). A recent analysis of maternal and child health strategies suggests that preventive interventions at the community level for newborn babies and at the primary care level for mothers and newborn babies are extremely cost effective (Adam et al., 2005). Skilled attendance at all births is considered to be the single most critical intervention for safe motherhood, as it allows a timely response to potentially fatal emergencies (UNFPA, 2007).

A key component of safe motherhood is the eradication of anemia during pregnancy. The WHO has produce estimates of the global burden of deaths attributable to anemia in women of reproductive age (Murray and Lopez, 1994). The total estimates are a minimum of 16,800 and maximum of 28,000 annually with a greater risk of anemia related death in younger women. Overall, about 20 percent of maternal and perinatal mortality in developing countries can be attributed to iron deficiency anemia (WHO, 2003). Anemia in pregnant women results in lower birth weights that have a higher risk of death. In the connection the present train the service deliveries in Public Hospital is examined with two fold objectives as to study the performance of institutional deliveries in Virdhunagar Head Quarters Hospital and to find out the cost of institutional deliveries in Virudhunagar Head Quarters Hospital in Virudhunagar District.

Methods

The present study was undertaken in Virudhunagar Head Quarters Hospital in Virudhunagar district. The study period was April 2012- April 2013 and with secondary data. There are nine government hospitals in Virudhunagar district, namely Virudhunagar head quarters, Aruppukottai, Tiruchuli, Kariapatti, Rajapalayam, Watrap, Srivilliputtur, Sattur and Sivakasi and for the present study virudhunagar head quarters hospital alone was selected. On an average above 1000 patients are coming every day. A modest childbirth assistance scheme, named after

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Muthulakshmi Reddy, Tamil Nadu's first women doctor and social activist, was launched in 1987 and is known as the Muthulakshmi Reddy Maternity Benefit Scheme (MRMBS). Initially, its beneficiaries were offered ` 300 to cover the expenses of childbirth. The amount was enhanced to ` 500 in 1995. In September 2006, the amount was raised significantly and clear set of guidelines were drawn to disburse the money. Between September 2006 and April 2011, cash assistance of ` 6000 was given to pregnant women living Below the Poverty Line (BPL) to compensate for the wage loss during pregnancy and for help in getting nutritious food to avoid low birth weight babies. The money was provided usually in two equal installments, the first in the seventh or later months of pregnancy and the second within three to six months after delivery. Now the state government announced its intention to double the support amount to ` 12,000.

The MRMBS was meant for the first two deliveries of BPL women, excluding those who owned mobile phones, motor vehicles and child. Over the year the eligibility criteria has undergone various changes. In its present version, all BPL women who access the services of a primary health centre are eligible for the benefits, but the annual household income limit has been raised to ` 24000 from ` 12000. Sri Lankan repatriate women are also eligible for the benefits. However, the scheme continues to cover only the first two deliveries. While there is no clause that states that only women who coverage by the scheme, procedural difficulties prevent private facility users from receiving the benefits.

Analysis and Discussion

Tamil Nadu has already attained the national goal of MMR below 100 based on the maternal death audit figures of the year 2006 itself. Even though pregnancy and labour are physiological events from which no woman is expected to die, statistically it is expected that 85 percent will deliver normally and 15 percent are likely to face a complication requiring some assistance. The cause of maternal deaths in Sivakasi regions (in Virudhunagar District) were hypertensive disorders of pregnancy 40 percent, sepsis related to pregnancy and child birth 7 percent, sudden deaths 13 percent, infectious diseases 7percent and liver disorders (DPH & PM, 2011). The following table reveals that services deliveries of Virudhunagar head quarter's hospital from April 2012 to April 2013.

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Table 1:- Health Services of Virudhunagar Head Quarter's Hospital from April 2012 to April 2013

Month / Year	Beds	Out Patients / Day	In Patients / Day	Diagnosed / Day	Surgery / Month	Caesarian / Month	Deliveries / Month
Apr 2012	328	1455	311	886	857	182	109
May 2012	328	1669	299	872	1424	178	100
Jun 2012	328	1585	327	877	839	174	269
Jul 2012	328	1569	314	863	806	142	91
Aug 2012	328	1558	307	612	647	152	251
Sep 2012	328	1373	333	845	739	192	301
Oct 2012	372	1318	308	799	495	179	288
Nov 2012	372	1462	328	686	392	211	352
Dec 2012	NA	NA	NA	NA	NA	NA	NA
Jan 2013	NA	NA	NA	NA	NA	NA	NA
Feb 2013	372	1504	308	912	540	131	216
Mar 2013	372	1403	245	732	625	171	298
Apr 2013	372	1205	342	723	647	172	276
Total		**16101**	**3422**	**8807**	**8011**	**1884**	**2551**

Source: Monthly Reports of CEmONC, Tamil Nadu Health System Project System, Chennai. Note: NA means Not Available. Within parentheses are averages.

The above table shows that the average bed strength in Virudhunagar head quarters hospital was 328. The total outpatients visit to this hospital per day was 16101 cases from April 2012 to April 2013, in patients were 3422 cases. The total surgery per month was 8011 cases andtotal caesarian per month was 1884 cases. It was observed that there were 8011 cases utilized this health facility for surgery and 1884 complicated women saved through caesarian deliveries under the scheme of MRMBS. The total screening or diagnosed cases was 8807 cases. The total deliveries per month were 2551 cases. Half of the bed utilized for caesarian cases. Surgery per month was

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greater than the availability of bed strength in this hospital. It can be understand remaining patient has been taking treatment without beds. It leads to increasing shortage of services deliveries in this hospital. Better services depend upon the availability of resources. Another important point is the services deliveries in this hospital well because the inpatient, new diagnosed cases, surgery and caesarian cases also increased.

Table 2:- Performance of Institutional Deliveries in Virudhunagar Head QuartersHospital from April 2012 to April 2013

Month	Total Maternity Admission	Complicated Admission	Normal Deliveries (1)	Assisted Deliveries (2)	Caesarean Deliveries (3)	Total Deliveries = (1)+(2)+(3)
Apr 2012	381	285	104	5	182	291
May 2012	348	246	98	2	178	278
Jun 2012	377	262	90	5	174	269
Jul 2012	308	252	85	6	142	233
Aug 2012	355	239	96	3	152	251
Sep 2012	408	277	104	5	192	301
Oct 2012	421	276	108	1	179	288
Nov 2012	474	308	137	4	211	352
Dec 2012	NA	NA	NA	NA	NA	NA
Jan 2013	NA	NA	NA	NA	NA	NA
Feb 2013	331	237	84	1	131	216
Mar 2013	445	325	122	5	171	298
Apr 2013	423	290	102	2	172	276
Total	**4271**	**2997 (70)**	**1130 (37)**	**39 (1)**	**1884(62)**	**(100) 3053**

Source: Monthly Reports of CEmONC, Tamil Nadu Health System Project System, Chennai. Note: NA means Not Available. Within parentheses are percentages.

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The total maternity admissions were 4271 cases from April 2012 to April 2013 in table 2. Among them 70 percent cases were complicated admission. The total deliveries were 3053 cases. The total normal deliveries were 37 percent, assisted deliveries were one percent and caesarian deliveries were 62 percent. It is observe that 62 percent of the women life saved through caesarian deliveries. It is not possible to save the women without MRMB scheme in Tamil Nadu. It notes that cash incentive scheme more effective in this region and whole Tamil Nadu. The newborns of women with higher socio-economic status have improved rates of neonatal survival compared with their lower status counterparts. However, as institutional births become more common it could be argued that differing patterns of health service use between rich and poor women will exacerbate and widen the mortality gap. Poor women are less likely to go to a facility to give birth, using services only as a last resort once complications arise.

Nearly 4 million neonatal deaths occur globally every year, and about one million of these occur in India (Lawn et al. 2005). Community health workers (CHWs) have long been used in child survival programmes. Improved neonatal health and reduction in mortality have been observed in many community-based health programmes using CHWs in India and in similar settings in neighbouring countries (Bang et al. 2005a; Bang et al. 2005b; Baqui et al. 2007; Haines et al. 2007; Baqui et al. 2008a; Kumar et al. 2008). The following table note that totaldeaths of maternal, neonatal and IUD in virudhunagar head quarters hospital.

Table 3: -Total Deaths of Maternal, Neonatal and IUD in Virudhunagar Head Quarter's Hospital from April 2012 to April 2013

Month	Anaemia	Maternal Deaths (1)	Neonatal Deaths (2)	IUD (3)	Total Deaths = (1+2+3)
Apr 2012	58	0	1	4	5
May 2012	38	0	2	6	8
Jun 2012	28	0	1	8	9
Jul 2012	55	0	0	6	6
Aug 2012	41	0	2	2	4
Sep 2012	40	0	1	5	6
Oct 2012	47	0	0	4	4

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Nov 2012	62	0	1	4	5
Dec 2012	NA	NA	NA	NA	NA
Jan 2013	NA	NA	NA	NA	NA
Feb 2013	59	0	2	5	7
Mar 2013	65	0	2	5	7
Apr 2013	47	0	0	7	7
Total	**540**	**0**	**12 (17)**	**56 (83)**	**68 (100)**

Source: Monthly Reports of CEmONC, Tamil Nadu Health System Project System, Chennai. Note: NA means Not Available

The total anaemia cases were 540 from April 2012 to April 2013. Basically in Virudhunagar district the female literacy very low compared with male literacy during last 30 years. Lack of the nutrition knowledge was one of the reasons for anaemia in this region. The MRMB scheme motivated women for institutional deliveries not give guarantee. The table 3 reveals that the CEmONC centre can save mother life not neonatal. The total Intra Uterine Death(IUD) was 56 (83 percent). Lack of ANC visit and health care knowledge are lead to anaemia, Neonatal death (17 percent) and IU death in this region. The total death such maternal, neonatal and IUD was 68 from April 2012 to April 2013. During Diravida Munnedra Kazhagam (DMK) period the case assistance of ` 6000 was given to pregnant women. Now the ruling party All India Anna Diravida Munnedra Kazhagam (AIDMK) increased this amount ` 12000 to pregnant women. Even though the anaemia cases, IUD and neonatal death were not declined only maternal death was declined to zero. It notes that pregnant women did not utilized this amountfor their health during pregnant and delay given to pregnant women at right time by government of Tamil Nadu.

Table 4:- Total Institutional Deliveries Costs of Virudhunagar Head Quarter'sHospital from April 2012 to April 2013

Months	Total Deliveries	Cost per Delivery	Total Costs
Apr 12 to Apr 13	3053	12000	36636000
Total	**3053**	**12000**	**36636000**

Source: Monthly reports of Virudhunagar Head quarters Hospital.

The total institutional deliveries of Virudhunagar head quarters hospital was 3053 cases from

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April 2012 to April 2013. The government of Tamil Nadu spend ` 3, 66, 36,000 crores for institutional deliveries under the MRMBS and spend ` 12000 per delivery. This amoun

Conclusion

While recognizing that health outcomes depend not just on the access to curative healthcare, but also on strengthening public health-related services, particularly access to clean drinking water, sanitation, and improved child-rearing practices, which in turn depend on education and empowerment of women, the Plan took some very important initiatives for increasing the outreach and quality of health services. The average bed strength in Virudhunagar head quarters hospital was 328. The total outpatients visit to this hospital per day was 16101 cases, in patients were 3422 cases. The total surgery per month was 8011 cases from April 2012 to April 2013, and caesarian per month was 1884 cases. 70 percent cases were admitted by complicated admission. The total deliveries were 3053 cases. The total normal deliveries were 37 percent, assisted deliveries were one percent and caesarian deliveries were 62 percent. It is observe that 62 percent of the women life saved through caesarian deliveries. The total death such maternal, neonatal and IUD was 68 from April 2012 to April 2013. The total Intra Uterine Death (IUD) was 56. The government of Tamil Nadu spend ` 3, 66, 36,000 crores for institutional deliveries under the MRMBS and spend ` 12000 per delivery.

It is understood that MRMB scheme motivate the pregnant women for institutionaldeliveries, not give their life guarantee to mother and child. TNHSP should be strengthening CEmONC centre in this region. Anaemia is neglected problem and needs to be adult with on priority basis. Routine iron supplementation should be given to women of childbearing age in general, and during pregnancy and postpartum in particular, to cover losses during delivery and location. Pregnant women should be utilized case assistance for their health. TNHSP spread health awareness through local NGO among womens in this region.

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