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Conditional Cash Transfer Programme and Newborn Care in an under-Served Community

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Conditional Cash Transfer Programme and Newborn Care in an under-Served Community

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Methods: This prospective observational study has been conducted at a referral hospital in a rural area over five months. The newborns were referred by the primary health centre (PHC), located 5 km from the referral centre, and 50 km from the district headquarters. The PHC area has 38 villages with a total population of 60,000. Forty percent of people are tribal, and 30% are below the poverty line. Approximately 20% of the PHC area is very remote, and the terrain is hilly. The subjects of the study were 30 consecutive high-risk newborns referred from the designated PHC area. The Zilla Parishad (ZP), the district council, routed remuneration through the PHC for disbursement at the referral centre. Neonatal survivals and ease of cash transfer were studied.

Results: Of the 30 high-risk newborns admitted, 22 were transferred in utero and eight after birth; three (10%) expired. The disbursement of INR 140,000.00 (USD 2000) in funds from the ZP was smooth.

Conclusion: It is feasible for a private facility to extend neonatal referral services in rural areas with CCT in place.

I. Introduction

Millennium Development Goal 4 (MDG 4), a two-thirds reduction in under-5 child mortality between 1990 and 2015, has not been realized since neonatal deaths, which account for 44% of the world's under-5 mortality (1), have not declined substantially. Over half of neonatal deaths globally occur in preterm babies (2). The availability and accessibility of neonatal referral services need to be enhanced to improve the care of preterm babies to reduce under-5 mortality. The estimates suggest that the interventions at a health facility can reduce neonatal mortality by 23-50% in different settings (3). Community hospitals and district hospitals appear to be appropriate to deliver these level II newborn care services. A study that assessed the functioning of such centres concluded that although it is feasible to establish these technically intensive and expensive services, their maintenance is challenging (4).

Curative care in some countries such as India may be highly skewed towards the private sector. The private providers extend more than 80% of outpatient care and nearly 60% of inpatient care (5). Involving such providers in newborn care is essential for the spread of services. A low-income individual may find them unaffordable. However, the conditional cash transfer (CCT) scheme may be helpful in such a situation. CCT may extend this benefit to the deprived individuals without delay or intermediation and with transparency (6). CCT provides monetary transfers to households on the condition that they comply with some pre-defined requirements. More people can avail the neonatal referral services with the involvement of the private sector.

This study shows how a referral centre, a local district council and a primary health centre (PHC) in a remote area came together to carry out a CCT programme as a pilot project.

II. Methods

a) Design and setting

The NICU of the Maharashtra Institute of Medical Education and Research (MIMER) and General Hospital (GH), Talegaon Dabhade, a rural medical college, located 45 km away from the city of Pune conducted this prospective observational study (1/7/2013-30/11/2013). GH is a private sector organization. The GH is a designated centre for newborn referral services under the Sharada Gram Arogya Yojana (SGAY) of which, safe motherhood and child survival are the important components. The Zilla Parishad (ZP) of Pune, a district council, the GH and the PHC, Kamshet, jointly implemented the programme.

b) Participants

The present study pertains to the care of high-risk newborns from the Kamshet PHC area born at PHC headquarters, at the GH or home. The distance between PHC headquarters and GH, and the district headquarters is 5 km and 50 km respectively. The PHC area has 38 villages and a total population of approximately 60,000, of which 40% is tribal, and 30% is below the poverty line. Around 20% of the PHC area is extra-remote and has mountainous terrain. It is difficult to reach the PHC headquarters, particularly in the rainy season, from these areas. The farthest village is 25 km from the PHC headquarters. Two general duty medical officers, seven auxiliary nurse midwives (ANMs) and two health assistants (HAs), the supervisors provide the medical care. Forty accredited social health activists (ASHAs), who are pay-for-performance workers, facilitate the programme. The PHC headquarters

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witnesses 25-30 deliveries every month. The labour room of the PHC aims to stabilize a baby before transfer to the first referral unit. This programme emphasizes that the baby must reach the FRU within an hour of birth. The Styrofoam box [Beardsell India] is useful as a transport incubator (7). Each ASHA has one Styrofoam box to be used for this purpose. Most often, the PHC vehicle is available for transportation.

c) Interventions

i. *Newborn care*

The NICU serves as the FRU for nearby PHCs and private maternity homes. Warmth, feeding, and antibiotic and oxygen administration receive primary attention. Circulatory support is extended in form of inotrope and pulmonary vasodilator administration. The established protocols, revised over time, following monthly death audits guide the management. As a routine, complete blood counts are performed at the time of admission. In case of respiratory distress, a chest X-ray is obtained. A portable X-ray machine is available for this purpose. Continuous positive airway pressure (CPAP) is delivered by a "homemade," inexpensive (USD 2.5), and easy-to-use version of the CPAP delivery system (8, 9), when indicated. Blood gas analysis, surfactant administration, mechanical ventilation, and mechanized CPAP delivery units are not available. At best, the centre may be called a level 2+ neonatal unit. The mechanical ventilation facilities are available at Pune. For an average bed-occupancy of 13 babies, two staff nurses are on duty round-the-clock. One junior and one senior resident are present per 8-hour shift, supervised by three consultants. All doctors are responsible for pediatric outpatient and inpatient care. The consultants are also involved in undergraduate and postgraduate teaching.

ii. *The CCT*

The management of MIMER & GH and the ZP administration arrived at a subsidized price structure though discussions. A system of benefit transfer, cashless to the families, was outlined. The ZP pays the charges for maternal and baby care to the GH through the PHC. The training of ASHAs ensured an early transfer, directly to the NICU rather than to the emergency rooms to avoid delays in management. The programme also stresses that admission formalities must be easy for parents and should not burden the ASHAs.

d) Outcome variables studied

The clinical profile of the babies, including outcome (survival), ease of money transfer and difficulties encountered in the study, if any, were noted. The survival rate for these babies was targeted to be equivalent to the existing survival rate in the NICU.

The study conformed to the Helsinki Declaration and to local legislation. The ethics committee of MIMER Medical College and Hospital granted permission to conduct the study.

III. Results

There were 32 admissions to the NICU during the study period. Of these, three (10%) expired (table). Eight (26.8%) babies were very low birth weight (VLBW). The birth weights ranged from 850 to 3300 g. eighteen (60%) babies were born preterm. The gestation ranged from 27-41 weeks among the admissions. The distribution of referrals was as follows: in utero (32), and after birth (8). Of the latter, 6 delivered at the PHC headquarters, and 2 at home. All the transfers, except one, reached the GH within an hour of birth. Birth asphyxia and respiratory distress respectively were noted in 5 (16.7%) and 23 (76.7%) babies. Of the three babies who expired, 2 were extremely low birth weight (ELBW) babies with severe respiratory distress. One baby, 1300 g at birth, with no asphyxia or respiratory distress died unexpectedly on day 8; a suspected sudden infant death syndrome. Five babies required second-/third-generation antibiotics, which were not available under the programme and had to be purchased by the parents. The GH received a total sum of INR 140,000 (one hundred forty thousand) for the care of these 30 babies, which was an average of INR 4660 (approximately USD 76) per baby. Overall, the cash transfer was smooth. Second-generation antibiotics were not available under the programme. Two babies required tertiary care, but the parents could not afford it.

IV. Discussion

Both arms of the programme, effective newborn care, and hassle-free CCT, were feasible at a modest expense. The survival among these babies was in line with earlier reports from our centre (10). In the absence of CCT these babies may not have presented to GH for referral care. The expenditure for the ZP was "modest." Importantly, our study offers an option for the community to choose between public and private facilities for newborn care depending upon convenience. The availability of second line of antibiotics and access to tertiary care may have been desirable additions.

The present study is also an example of a public-private partnership (PPP) with CCT in which access to newborn care at a private health facility is negotiated in advance. CCT, by its immediate and direct impact, may offer some parity in the accessibility of neonatal referral services in the public and private sectors. Well-designed CCT may complement essential public health services. There is consistent evidence that some CCT programmes have facilitated significant improvements in nutrition and increased utilization of health and education services (11). CCT has also played

a role in supporting care and treatment for people living with HIV and AIDS. In a systematic review of studies on CCT that report maternal and newborn health outcomes, including studies from 8 countries, it was noted that the CCT programmes have increased the uptake of maternal and neonatal health services such as antenatal visits, skilled attendance at birth, delivery in a health facility, and tetanus toxoid vaccination for mothers. Unfortunately, health agencies have remained relatively passive observers of CCT schemes rather than active participants in their design, implementation, and evaluation, possibly because most CCT schemes are "owned," intellectually and operationally, by economists working outside the health sector (12).

CCT also stimulates demand for health services and must be complemented by the supply side, such as strengthening health services to provide high-quality health care at a reasonable cost in programme areas. CCT is not an alternative to improvements in primary services. Thus, the expansion of capacity to deliver level II care at the community hospital level may be the top priority.

To conclude, it is feasible to enhance referral neonatal services in rural areas by involving private medical facilities through a public-private partnership. The real test lies in the ability of such a programme to function well under different conditions and in a larger population and to address a broader range of challenges.

What is known?

Under-served communities may not be able to access newborn referral care in the private sector, even when no other options are available to them.

What does this study add?

Conditional cash transfer may make it possible for under-served communities to receive services at private health facilities.

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Table 1: Frequency distribution of variables

Variable	Frequency	%
Place of birth		
Inborn	22	73.3
Out born	8	26.7
Birth weight (g)		
Up to 1000	02	6.7
1000-1500	06	20
1510-2500	12	40
More than 2500	10	33.3
Gestational age (weeks)		
Up to 28	05	16.7
29-34	05	16.7
35-37	08	26.7
More than 37	12	40
Sex		
Male	14	46.7
Female	16	53.3
Mode of delivery		
Vaginal	20	66.7
C-section	10	33.3
Liquor		
Clear	15	50
Meconium-stained	15	50
Birth asphyxia		
Yes	05	16.7
No	25	83.3
Respiratory distress		
Yes	23	76.7
No	07	23.3
Outcome		
Discharged	27	90
Expired	3	10
Hospital stay		
Up to 7 days	04	13.3
More than 7 days	26	86.7