Tracking Survival of Institutional Births for Neonatal Period-Feasibility at District Hospitals

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We assessed the feasibility of involving routine district health system personnel in tracking survival of institutional births for neonatal period in two district hospitals (Nagaur in Rajasthan and Chhatarpur in Madhya Pradesh) for the month of March 2010. A centralized district level tracking system was used in Nagaur, whereas in Chattarpur, block-wise tracking of births was performed. A total of 607 live births were tracked with 17 identified neonatal deaths. Prematurity and infections were commonest causes of deaths with majority occurring within first week of life. The block-wise approach resulted in identifying extra neonatal deaths.

Key words: *Feasibility, Neonates, Tracking, Survival.*

India faces a huge challenge of newborn survival with high neonatal mortality rates (NMR), more so in early neonatal period [1]. There is an increased thrust accorded to Institutional deliveries, especially after the launch of *Janani Suraksha Yojna* (JSY). Ensuring survival of all births taking place at health facilities and community will be vital to achieve gains envisaged as part of National Rural Health Mission. Mortality statistics in the neonatal period from health facilities usually captures events till discharge for normal babies or those who get admitted within 28 days of birth. Accurate data of neonates should reflect the status of all babies discharged from the hospital. Many of them never return to public hospitals, even during any episode of illness. This necessitates follow up of babies till the end of their neonatal period *i.e.*, 28 days. In the current state of poor community registration and recording of neonatal deaths, tracking survival status of discharged newborns by routine health personnel in public health delivery system remain a viable option to generate accurate levels of neonatal survival status.

METHODS

We carried out survival tracking of institutional births occurring in district hospitals (DH) for the month of March 2010 in two districts-Nagaur in Rajasthan and Chhatarpur in Madhya Pradesh, with a NMR of 42 and 51 per thousand live births, respectively [2]. Special registers were designed to note all the details for institutional births, taking place both in labour room and operation theatre. Details regarding family and nearest health centre contact along with name of concerned Auxiliary Nurse Midwife (ANM) were also noted.

Key personnel from district health system were identified for undertaking this activity - District epidemiologist at Nagaur and the District immunization officer at Chhatarpur. Training was provided for recording relevant details to all staff concerned.

The actual tracking was performed in two distinct ways. In Nagaur, phone calls were made from the district level at the end of neonatal period. If phone numbers were not available, then the concerned ANM was contacted to make house visits. In Chhatarpur, neonatal births were sorted block-wise. The Block Medical Officer in-charge and the concerned ANMs were given the responsibility to track the neonates within their geographic area of work by either making phone calls or house visits. The filled report from each block was collated at the district level.

A 20% sample was cross checked by the research team to validate the findings. The Indian Council of Medical Research Causes of Death by Verbal Autopsy, questionnaire for Neonatal Death [3] was used in carrying out interviews by research team and causes of death were ascertained by two study team physicians independently. Informed consent was obtained from participants before interviews. The ethical clearance for the study was obtained from Institutional ethical committee of Public Health Foundation of India.

RESULTS

Of the 321 recorded births at the DH Nagaur in the month

TABLE I NEONATAL SURVIVAL TRACKING STATUS IN STUDY DISTRICTS (MARCH 2010)

District	Total live births	Survival status tracked (%)	Missing data (%)	Alive out of total tracked (%)	Neonatal deaths	NMR (per 1000 live births)
Nagaur	313	247 (79)	66 (21)	241 (98)	6	24.3
Chhatarpur	398	360 (91)	38 (9)	349 (97)	11	30.6
Total	711	607 (85)	104 (15)	590 (97)	17	24

of March 2010, 8 were still births; the district personnel were able to assess survival status at completion of neonatal period in 79%. In Chhatarpur, out of total 415 recorded births in the study month, 17 were still births; 84% live births were tracked (*Table* I).

There were 17 neonatal deaths (6 in Nagaur and 11 in Chhatarpur) reported by the tracking, verbal autopsy was conducted for 13 deaths (*Table* II). In Nagaur, out of five neonatal deaths tracked, four were females and in Chhatarpur, out of 8 neonatal deaths tracked, five were females. Maximum deaths (12/13) took place within first 7 days in both the districts. Prematurity and infections were the commonest causes for deaths (*Table* II). Out of 13 deaths where verbal autopsy was done, care from any health facility was sought only in six neonates.

DISCUSSION

Based on the experience of undertaking the neonatal survival tracking exercise at the end of 28 days through involving local district officials, the strategy seemed feasible in identifying extra deaths taking place at community settings. In absence of special care newborn units functioning at time of conduct of this study in these districts, neonatal mortality estimates were generated only through labor room records and pediatric admissions, outcomes. Only relying on facility based records for reporting neonatal mortality through admitted newborns will possibly have a limitation of under-reporting and thus will not be in true sense a reflection of accurate NMR.

While only 38 neonates (9%) could not be traced in Chhatarpur, 66 neonates (21%) were not traceable in Nagaur. These were due to deficiencies in noting accurate contact details in the reporting register. Inaccuracies in recording contact details are also due to families citing false addresses for obtaining higher cash incentives under JSY. Larger missing data resulted from Nagaur than Chhatarpur, indicative of better yield of block-wise approach than centralized district approach for tracking.

The present study was limited in its scope as it included only district hospitals and was conducted only for one month. The utility of this approach can be in all institutional settings where deliveries are conducted and routine staff

TABLE II CAUSES OF NEONATAL DEATHS BY VERBAL AUTOPSY

Cause of death	Nagaur	Chhatarpur
Prematurity/low birth weight	2	4
Sepsis/diarrhoea/pneumonia	1	3
Asphyxia	1	–
Unknown#	1	1
Could not be traced/ interviewed*	1	3
Total	6	11

*# cause could not be ascertained; *at time of visit.*

can be assigned responsibility of tracking the outcomes at the end of neonatal period. Sustained regular use of the methodology will build confidence in the approach and integration within routine health system. Similar approach has been tested for newborns admitted in two special care newborn units of Madhya Pradesh where tracking for survival was performed at one year of age [4]. The tracking efforts if integrated within routine health systems will improve accuracy of neonatal and infant mortality data. This will also provide an opportunity to understand the social factors responsible for newborn deaths, which will be helpful in improving quality of care for newborns.

REFERENCES

1. Ministry of Health and Family Welfare. Family welfare statistics in India 2009. New Delhi: Government of India; 2009.
2. Government of India. Annual Health Surveys Bulletin. 2010-11. Available online at http://www.censusindia.gov.in/vital_statistics/AHSBulletins/ahs.html (Accessed 15 August, 2011).
3. Indian Council of Medical Research (ICMR), 2009. Study on causes of death by verbal autopsy in India, ICMR, New Delhi: 2009.
4. UNICEF. Tracking babies treated in Special Care Newborn Units at district level to see survival at one year of age. Available online at http://kcci.org.in/SitePages/new%20born%20care%20unit.aspx (Accessed 10 October, 2011).