



An evaluation of first referral units in border districts of West Bengal

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OBJECTIVE(S) : To assess the facilities and manpower available in the first referral units (FRUs) for mothers and childcare, and the functioning of the existing manpower.

METHOD(S) : The study was conducted in seven FRUs of three districts of West Bengal bordering Bihar and Orissa. Data was collected by interviewing the district officials, analysing information available in the districts, direct observation of the FRUs and review of maternal morbidities.

RESULTS : Only two thirds of the FRUs had adequate manpower but the rural hospitals were declared as FRUs without facilities and manpower support. FRU kit N was available but not used. Specialists lack training in child survival safe motherhood (CSSM), reproductive and child health (RCH) and baby friendly hospital initiative (BFHI). Blood banks ceased to function beyond afternoon. Type I and II delay were found to be predominant in obstetric emergencies.

CONCLUSION(S) : FRU, need to be made functional for the clients with face lifting and ensuring 24 hours services, especially of the blood bank.

Key words : FRU, border districts, manpower

Introduction

The Government of India and UNICEF India Country office proposed an interstate border district strategy for betterment of maternal child health (MCH) related indicators in some selected districts with an ultimate goal to reduce maternal, infant and child mortality rates by half within a few years. As a part of the strategy, it was necessary to assess the existing health systems.

This study was carried out with the following aims —

- To assess the availability of manpower which provided the services to the mothers and children in the First Referral Units (FRUs) of selected districts.
- To assess the facilities available in the selected FRUs regarding mother and child care.
- To evaluate the functioning of the existing manpower
- To find out the obstacles in providing maternal and

newborn care so that remedial measure could be adopted.

Material and methods

FRUs are district or sub-district health care facilities where there are specialists like obstetrician and gynecologist, anesthetist and pediatrician, and facilities for cesarean section and blood transfusion. Interstate border districts are the districts that had some commonality with regard to some health indicators and as these districts are close to each other, transfer of patients occurs from one part of the district to the FRU of adjacent district, even of adjacent state. In West Bengal, the four districts, viz Purulia, Bankura and East and West Midnapur (the then Midnapur and Tamluk FW districts) were selected as these districts were bordering Bihar and Orissa. Visits were paid to all the districts and the following methodology was adopted at different phases to reach the objectives —

- District level meeting was organized with the senior officials of health and ICDS, Sabhadhipati and Swasthya Karmadhyaksha of Zilla Parishad and local NGOs at all districts.
- Analysis of data available in the districts with regard to manpower at FRU.
- Visit of 2 FRUs in each district to observe directly the

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functioning of FRUs.

- Review of maternal morbidity in two of the FRUs in each district.

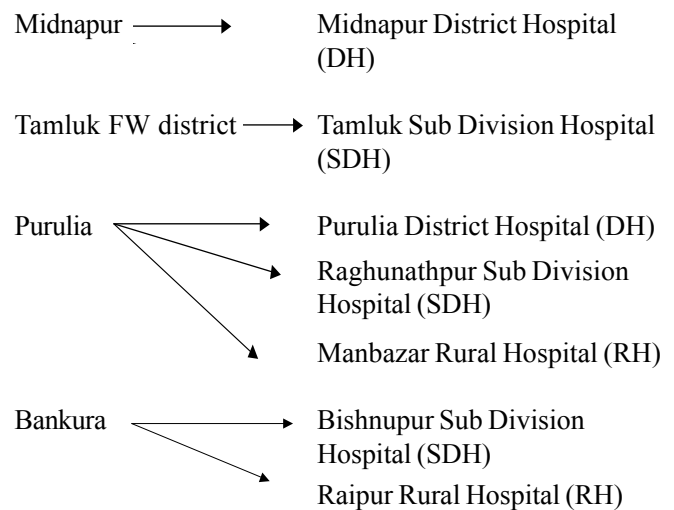
During the visits, data were generated through a small proforma, direct observation and interviews with key informants like superintendent, gynecologists, pediatrician and anesthetist of the FRUs. The study was carried out from July to October 1999.

Results and Discussion

Purulia, Bankura and Midnapur, three border districts were selected for the study. Midnapur being a large district had two family welfare divisions viz. Midnapur and Tamluk. There were 4 FRUs each in Midnapur and Tamluk and seven each in Purulia and Bankura as per the report of the district level meeting and available data.

From the available data of the districts (Table 1) it was observed that in Purulia only three and in Bankura only two FRUs were functioning and apparently there was no shortage of manpower. But there was neither any sanctioned post of specialists in the rest of the FRUs nor was there any General Duty Medical Officer (GDMO) with specialist degree. In Midnapur, data regarding manpower was only available from Midnapur District Hospital where gross manpower deficit was observed whereas in Tamluk manpower was found to be in excess. But in both the areas poor availability of the anesthetist existed and medical officers (MOs) trained in anesthesia was the only solution. Facility of blood bank was available, only in the district hospitals.

Six FRUs were evaluated in three districts with an additional one in Purulia. The FRUs assessed were —



Two thirds of FRUs had adequate manpower like gynecologists, pediatricians, anesthetists and also an administrative superintendent. But Raipur RH and Manbazar RH were declared as FRU without appropriate manpower support. Raipur RH had no specialists as per FRU stipulation. Manbazar had only one gynecologist and Raghunathpur SDH had shortage of specialist doctors for round the clock service. Biswas et al ¹ in their assessment of newborn care at FRU of West Bengal in 1998 had similarly observed that although there was no shortage of manpower in district and subdivision hospitals, rural hospitals, which were declared as FRUs had remarkable absence of sanctioned specialist posts. In all the FRUs, general duty medical officers who had training in anesthesiology were utilized as anesthetists.

All the FRUs evaluated had their own building, but in many cases it was broken and damp with water leaking through the roof. Electricity and tap water facility were available for 24 hours but the wards were untidy with unclean toilet floor soiled with fecal matter.

Table 1. Availability of manpower including specialists in First Referral Units (FRUs) of these districts

Manpower available	Tamluk No. (excess/ deficit) ^a	Midnapur No. (excess deficit)	Bankura No (excess deficit)	Purulia No (excess/ deficit)
Gynecologist	8 (+33%)	3 (-50%)	4 (0)	9 (+200%)
Anesthetist	5 (-37.5%)	3 (-50%)	2 (0)	5 (+67%)
Pediatrician	7 (-75%)	3 (-25%)	1 (0)	4 (+300%)
Nursing staff	4 (0)	NA	45 (0)	207 (+5%)
Lab technician	6 (NA)	NA	2 (0)	2 (0)
(Blood Bank)				

^a Excess /Deficits compared to sanctioned posts, NA= Not available

Except Raipur RH (30 bedded) and Raghunathpur SDH (68 bedded), all the FRUs had indoor bed capacity of 200 or more and DH had a strength of 500. But all the hospitals were overcrowded and average daily patient load was more than twice the sanctioned bed strength. Biswas et al¹ and Biswas² have made similar observations. Moreover, none of the FRUs had beds specifically meant for obstetric emergency.

All the hospitals had separate pediatric and maternity wards, but nowhere except at Bishnupur SDH, these wards were located on the same floor. No separate arrangement for keeping the sick newborns was seen in any of the hospitals except in Midnapur DH. In Purulia DH, sick neonates were kept in a space, which was seen broken down and unhygienic and provided only with the facility of one 200 watt bulb for treatment of hypothermia and one oxygen cylinder. But crisis of oxygen cylinders was more marked in Purulia DH where on many occasions the relatives of the patients had to hire the oxygen cylinders from outside to fulfill the patients' need. The manufacturers also failed to meet the demand of oxygen cylinders.

Among the seven FRUs studied, the blood bank facility was not available in three FRUs viz. Manbazar RH, Raipur RH and Raghunathpur SDH. In other hospitals the blood banks were working till evening and thereafter blood was available in emergency conditions only through on call service of the MOs and technicians. Biswas et al¹ made a similar observation that blood bank facilities were not available in rural hospitals and blood banks ceased to function after evening in the district and subdivision hospitals. Biswas² also found that blood banks were functioning only in two FRUs in the district of North 24 parganas of West Bengal in 1995-96. All the blood banks had scarcity of MOs and technicians, and had inadequate and irregular supply of reagents. These blood banks supply blood only in exchange of donation and some of the banks had no vehicle for collection of blood. In Midnapur, technicians had extra work load performing VDRL tests and ABO-Rh typing of antenatal mothers, which could be arranged by the technicians of the pathology units. At the time of the study, HIV testing was not mandatory. FRU kit (E-P supplied by UNICEF) was present in almost all the FRUs. FRU kit could not be seen at Bishnupur, as concerned personnel were not aware whether it was supplied or not. At Purulia, doctors informed that FRU kit was not supplied. But most of the FRUs were not using the kits. In some areas, the gynecologists did not like the items in the kit. Kit N (for essential newborn care) was not used by any of the FRUs, although it was supplied to all. The reason behind not using kit N was mainly lack of space in labor

room. Some of the pediatricians also did not recommend its use and it was very astonishing to note that some pediatricians and gynecologists did not have any knowledge about importance of radiant warmer. Biswas et al¹ had found that about 50% FRUs were not using radiant warmer. However it was observed that the nursing staff of Raipur RH were effectively using the radiant warmer with their own initiative.

Similar to the observation of Biswas et al¹, the present study revealed that training status especially of child survival safe motherhood (CSSM), baby friendly hospital initiative (BFHI) and skill training was observed to be poor in all the FRUs. Only the specialists of Midnapur DH and pediatricians of Raghunathpur SDH were trained in CSSM and BFHI, but this was very much lacking in other group of medical officers. Among the nursing personnel, very few of the nursing staff of Midnapur DH and Purulia DH were trained in (CSSM), reproductive child health (RCH) and BFHI.

The out patient, indoor and emergency services of all the FRUs were overloaded with patients due to referral from BPHC and PHC and also by patients from nearby rural and adjacent areas attending directly for treatment. The beneficiaries preferred those FRUs, where they could get all the facilities. The patient load was not so marked in Raipur RH where facility for cesarean section did not exist. About 25% of the cases were delivered by cesarean section in district hospitals. Cesarean section facility was available in all the FRUs except Raipur RH and Manbazar RH. In Raipur RH no specialist was posted although infrastructure for obstetric intervention was present. In Manbazar RH, only one gynecologist was posted. It was very surprising to note that he was performing all the gynecological operations by open ether anesthesia, except cesarean section for which he needed a trained anesthetist since he was very conscious about the Consumer Protection Act.

According to gynecologists of the FRUs, the most common causes of cesarean section were obstructed and prolonged labor as a result of neglected home deliveries and septicemia due to illegal abortions was a common problem. In their opinion, multigravid mothers suffered more as they were more readily handled by TBAs and quacks at home thinking that these deliveries would be easier to perform.

Type of delay in obstetric emergencies was also noted. It differed from district to district. Type I delay (delay at home) was most prevalent in all the districts due to low level of literacy, poor economy, misbelief, delay in decision making at home level and interference by quacks. But the most important reason was poor knowledge of when and where

to refer for obstetric emergencies. Type II delay (delay during transportation) also constituted a problem in Purulia due to poor communication facility, difficult terrain and absence of functioning FRU close to the community. But it was not so much of a problem in Midnapur where communication was better due to trucker services. Type III delay (delay at health facility) was found to be minimum in all the FRUs as stated by the health personnel. This sort of delay mostly occurred due to a shortage of operation theatre (OT) tables and nursing and paramedical manpower, especially in the odd hours of the day for simultaneous arrangement of obstetric and surgical interventions. The suture material supplied in the OT was also insufficient and of low quality as stated by the specialists.

Most common causes of neonatal morbidity and mortality were septicemia and low birth weight as revealed by the pediatricians of the FRUs. Deaths were common due to bronchopneumonia associated with measles, while birth asphyxia was rare. Cases of neonatal tetanus were also admitted in the FRUs, though these cases were not reported by the health workers of the adjacent blocks.

Table 2 gives six case studies with reasons for delays and recommendations to overcome the delays. Figure 1 summaries the recommendations ensuing from our study aimed at improving the functioning of FRUs.

Table 2. Case studies and types of delay and reasons behind it in obstetric emergencies admitted at First Referral Units (FRUs)

Case Study No.	Type I delay	Reason	Type II delay	Reason	Type III delay	Reason	Conclusion and recommendations
1	3 hours	Poor knowledge of TBA about appropriate referral in PPH	7 ½ hours	No knowledge about where blood is available, so time wasted in transferring to FRU	1 hour	Long admission procedure, Emergency blood transfusion not possible	Predominantly type I and II delay Awareness generation of opinion leaders and training of TBA and rapid transfusion of blood.
2	24 hours	Too long intervention by a quack in a case of eclampsia due to poor knowledge and intention to keep clientage	1 hour	Time spent on transfer was not much	½ hour	Permissible but blood transfusion started after 12 hours due to administrative and managerial reasons and also due to non-availability of blood in time	Predominantly type 1 delay. Awareness generation of community and sensitization of quack. Rapid blood transfusion at FRU.
3	24 hours	Same as case study 2	Negligible	Permissible	Not much delay	Peak hour of hospital and manpower available.	Type 1 delay Recommendations as in case study 2
4	2 hours	Poor knowledge of TBA about referral	16 hours	Lack of knowledge about where to take the patient with PPH and non-availability of transport	Not much delay	Permissible but blood transfusion started after 16 hours	Predominantly type II delay Informing people about FRU, and providing community based transport. Rapid blood transfusion to prevent irreversible shock
5	1 hour	Arrangement for transport. But gross negligence by health worker of subcentre who never checked BP even when edema over the legs was present	1 hour	Permissible	1 hour	Permissible	Emphasis on proper antenatal care by health worker with reorientation training
6	1 hour	Permissible	4 ½ hours	Lack of knowledge about where to take the patient with APH and cost of transport	3 ½ hours	Delay due to sending call books to the doctor, but cesarean section was done early	Mostly type II delay, which could be minimized by informing people about FRU.

Plan of action of FRU



Figure 1. Recommendation for improving the functioning of first referral units

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