

## SHORT ARTICLE

**A Study of First Referral Units in Border District of Uttar Pradesh, India.**

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**Abstract**

**Background:** Health services are designed to meet the health needs of the community through the use of available knowledge and resources. Secondary Level of Health Care essentially including Community health centers (CHCs) constituting the First Referral Units (FRUs) and the Sub-district and district hospital, designed to provide referral health services. **Aims & Objectives:** To assess the available resources and minimum services at FRUs as per IPHS Standards in District Agra. **Material & Methods:** A Cross-sectional study was conducted in Four FRUs of Agra District, from June 2015 – August 2016. All four FRUs were evaluated for infrastructure, drugs and consumables, equipment, manpower, as per IPHS standards and minimum services provided by first referral units (FRUs). Status of FRUs as against revised (2012) IPHS Standard. **Results:** All the four FRUs (100%) have their own government building. Availability of drugs and consumable, equipment, were good which was 100% while 25% of FRUs had blood storage facility. 50% of FRUs had general surgeon, dental surgeon, gynecologist and anesthetist while 100% of FRUs had medical superintendent, medical officer and availability of staff nurse and pharmacist were 75% and 91.7% respectively among all four FRUs. **Conclusion:** Physical infra-structure, drugs and consumables, equipment, availability found adequate in all FRUs.

**Keywords**

Community Health Centers; First Referral Units; Indian Public Health Standards

**Introduction**

Health services are designed to meet the health needs of the community through the use of available knowledge and resources. In 1977, the government of India launched a rural health scheme, based on the principle of placing people health in people's hands. It is a three tier system of health care delivery in rural areas based on the recommendation of the Shrivastva Committee in 1975, namely Primary, Secondary and Tertiary. Secondary level of Health

Care essentially including Community Health centers (CHCs) constituting the First Referral Units (FRUs) and the Sub-district and district hospital, designed to provide referral health services for cases from PHCs and for cases in need of specialist case approaching the centers directly (1).

As envisaged under NRHM health delivery system in rural area are to be up-graded from its present level to level of a set of standard called Indian Public Health Standard, was released in early 2007 to

provide optimal specialized care to the community to achieve and maintain of acceptable quality care. The Indian Public Health Standard (IPHS) are the benchmark for quality expected from various component of public health care organization and may be used for assessing performance of health care delivery system (2).

Provision of adequate and timely emergency obstetric care (EmOC) has been recognized as the most important intervention for saving lives of pregnant women who may develop complications during pregnancy or childbirth. The operationalization of First Referral Unit at sub-district/CHC level for providing EmOC to pregnant women is a crucial strategy of RCH-II but still India has high maternal mortality ratio 167 per lac live births against the target of MMR 100 as in national policy (SRS-2013) (3)

### Aim & Objective

To assess the availability of the Infra-structure, manpower and services provided at First Referral Units (FRUs).

### Material & Methods

This cross-sectional study was carried out at all the First Referral Units (FRUs) of District Agra. The population of the District Agra is 4.3 million with 2.3 million of rural population (census 2011) (4). The study comprised survey of the Physical Infra-structure, manpower, services offered in all four FRUs namely CHC- Kirawali, CHC-Khairagarh, CHC-Etmadpur, CHC- Bah. Data were collected from June 2015 – August 2016. all the first referral units were taken as a study area. For data collection Structured standard revised IPHS 2012 facility survey format for CHC was used. (2) Before start of the data collection informed written consent from Chief Medical Officer of Agra, and Medical Officer in charge of concerned FRU were taken. The eligible participants (Medical Superintendent) were explained the purpose of study and were motivated to participate and reveal the correct information. The question were focused on availability of infrastructure, drugs and consumables, Equipment and Blood Bank and also availability of Essential and Emergency medical services. To reveal correct information physical verification was done. The information collected on the study schedule was transferred on the pre-designed classified tables and analyzed accordingly. Quantitative Data analysis was done to draw the valid inference.

## Results

[Table 1](#) showed all of the four FRUs (100%) have their own government building, which is completed in all aspects except one FRU, where the residential portion was not constructed. All the Items (drug dispensary and drug store, separate wards, labor room, O.T, separate public utility, lab facility, electricity with power back-up etc. which are necessary for the establishment of FRUs were available in all the FRUs which was 100% except that the cold chain infrastructure (25%)

One of the four (25%) FRUs did not have X- ray facility. Overall availability of necessary equipment in all four FRUs and satisfactory However only one (25%) FRU have Blood storage units and none of the FRUs had O.T light mobile, multipara monitor and pulse oxymeter. Availability of drugs and supplies are good in all FRU which was 100%; only drugs related to MTP i.e. mifepristone were not available in 50% of FRUs. [Table 2](#) shows that none of FRUs fulfills the minimum criteria for availability of both Medical and Supporting staff. However, one FRU is about to near match with IPHS Standards.

[Table 3](#) depicted availability of laboratory facility in all four FRUs; none of them was having required minimum laboratory facility. One FRU has better laboratory facility. None of FRUs fulfills the minimum services available as per IPHS norms i.e. emergency obstetric care, Newborn care & emergency care of sick children, blood bank/ blood storage facility. Except 24-hourly delivery and Full range of family planning services including safe abortion services which was available at all four FRUs (100%). Only FRU bah have blood storage facility. However, transport facilities (in the form of 102 and 108) available in all FRUs. ([Table 4](#)).

## Discussion

In present study, we assessed the available resources and services at FRUs against IPHS standard (revised 2012 guidelines). Physical infra-structure available at all FRUs fulfilled all the norm except blood storage unit which was present only in one FRU, all FRUs had a designated government building and their catchment population within the radius of 30 kms. Similarly, Sharma K *et al* (5) in his study reported that more than ninety percent of FRUs having adequate infra-structure. Chauhan R *et al* (6) reported that 80% CHCs had own building but only 85.7% have residential accommodation and labor room which is in accordance with our study finding. Present study

showed that none of the FRUs fulfill the minimum criteria for both medical and Para-medical staff with two FRUs having gynecologist specialist and general surgeon and only one FRU having pediatrician. None of FRUs had public health specialist however supporting staffs were near to standard in all FRUs except lab technician which was present only in one FRU. Chauhan R *et al* (6) found in his study 100% CHCs were without specialist doctor and supporting staffs like radiographer, pharmacist, lab technician were present only in 42.8%, 57.2% and 57.2% respectively. Chandrasekhar V *et al* (7) study at Nellore found surgeon only in 6% of CHCs, availability of gynecologist specialist in 47%, lab technician were only in 46.6% and staff nurse in 56.7% and radiographer in 53.3% of CHCs. Sharma K *et al* (5) had also met the similar observation with accordance to our study. Most of FRUs lacked blood storage system except one FRU. None of the FRUs had O.T light, mobile, multipara monitor and pulse oxymeter while all necessary equipment related to MCH care were available at all FRUs i.e. delivery kit, family planning kit, general anesthesia kit and general equipment. Chandrasekhar *et al* (7) showed that availability of surgical equipments was poor except standard surgical set. Availability of equipments related to the normal delivery was adequate however IUD insertion kit was available in 93% CHCs, anesthetic equipment available upto 60%, neonatal resuscitation kit in 33% and blood transfusion kit present only in 27% of CHCs. Sharma K *et al* (5) study at bharatpur district of Rajasthan found only 3.8% CHCs had radiant warmer, our findings were better as we included upgraded CHCs.

Quality of maternal health services not only dependent on availability of infra-structure, equipment and man power but also depends on adequate regular availability and supply of consumables and laboratory services. In our study complete desirable maternal laboratory services related to maternal health services that is Hb estimation, urine pregnancy test, blood group and Rh typing, blood sugar and urine for albumin and sugar were available at only one FRU. Only urine pregnancy test (UPT) was available at all four FRUs. Consumables related to maternal health were available at all FRUs, except drug used for MTP that is misoprostol and mifepristone, available at only 50% of FRUs. Sahu KK *et al* (8) study at Lucknow reported consumables availability range from 33 to 66% and Ray SK *et al* (9) reported in his study from

West Bengal, that only ABO and RH typing of antenatal mother were carried out as investigation. Sahoo PK *et al* (2014) (10) at Jharkhand also reported the availability of misoprostol (57%) and other consumables like parental antibiotic and oxytocin were 86% and 57% respectively.

An existing facility can be declared as fully operational FRUs only when it is fully equipped, provide round a clock services for emergency obstetric and newborn care in addition to all emergencies that any hospital is required to provide. Minimum ten services, three of them are critical that is availability of surgical intervention, new born care and blood storage facility on a 24 hourly basis. (11). Present study showed that only 24 hourly normal delivery and full range of family planning services and referral services were available at all four FRUs, other services were deficit in all four FRUs. DLHS-3(3) survey by government of India data for Uttar Pradesh revealed that in Uttar Pradesh only 88.5% of O.T are functional, 71.8% have new born care services and only 1.3% of FRUs have the functional blood storage facility which is in accordance to our study.

### Conclusion

Physical infra-structure, drugs and consumables, equipment, availability found adequate in all FRUs. Availability of specialist doctor markedly lacking in all FRUs however Paramedical staffs position was better, none of the FRUs meets the minimum criteria for service available at FRUs as set by IPHS standard.

### Recommendation

For making functional FRUs man power should be made available at facility 24 x 7. Health department should take the measure to fulfill vacancies and ensure, quality, services meant for FRUs laid down by IPHS (2012) standard. Similar studies need to be conducted in various parts of the country to evaluate the maternal health services.

### Limitation of the study

The FRUs were purposively selected for study and the sample size is small to represent the whole state.

### Relevance of the study

India being signatory to Alma Ata Declaration is committed to attaining health for all through the primary Health Care Approach. To strengthen the public health system, primary health care delivery needs to reinvent itself only then can India aim for universal health coverage (UHC). In view of the above it is important to study the First Referral Units

operationalization of which is important for basic and emergency services.

### Authors Contribution

All the authors had made substantial contributions to conception, design, data collection, analysis and interpretation of data; drafting the article, revising it critically for important intellectual content; and final approval of the version to be published.

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### Tables

**TABLE 1 INFRA STRUCTURE AVAILABLE AT FRUS**

Items	Percentage
Physical Infra structure	100%
Regular availability of essential drugs and consumables	100%
Equipment's	
Surgical set	100%
IUD set	100%
Normal delivery set	100%
Anaesthesia set	100%
New-born resuscitation set	100%
Blood transfusion set	25%

**TABLE 2 AVAILABILITY OF HUMAN RESOURCES AT F.R.U**

MANPOWER	IPHS NORM	Number	Percentage
Medical Staff-			
Physician	4	0	0%
OBG	4	2	50%
Anesthetist	4	2	50%
Pediatrician	4	1	25%
General Surgeon	4	2	50%
Dental Surgeon	4	2	50%
-Medical Superintendent	4	4	100%

M.O(Allopath)	8	13	162.5%
M.O (Ayush)	4	6	150%
Supporting Staff-			
Staff Nurse	40	30	75%
Public Health Nurse	4	0	0%
Lt	8	1	12.5%
Pharmacist	12	11	91.7%
-Allopath	8	9	112.5%
-Ayush	4	2	50%
Ophthalmic Assistant	4	3	75%
Dental Assistant	4	1	25%
Cold Chain & Vaccine Logistic Assistant	4	3	75%
OT Technician	4	1	25%
Multi Rehabilitation/Community Based/Rehabilitation worker	4	0	0%
Counselor	4	3	75%
Radiografer	4	3	75%
Public Health Program Manager	4	3	75%

**TABLE 3 AVAILABILITY OF LAB FACILITIES RELATED TO MCH CARE AT F.R.U**

INVESTIGATIVE FACILITY	IPHS NORM	Availability (%)
Hemoglobin	Available	75%
Pregnancy testing kits	Available	100%
CBC	Available	0%
Blood grouping & Rh typing	Available	25%
Urine albumin & sugar	Available	75%
Blood sugar	Available	50%
RPR (Rapid plasma regain) Test-VDRL	Available	0%
Malaria (PS or RDT) Test	Available	75%
T.B (Sputum for AFB)	Available	100%
HIV(RDT)	Available	50%
HEPATITIS- B	Available	50%
Liver function test(LFT)	Available	0%
Kidney function test(KFT)*	Available	0%

**TABLE 4 STATUS OF SERVICES OFFERED AT FRUS**

Services	IPHS NORM	Availability (%)
Normal delivery	Available	100%
Assisted delivery	Available	0%
Emergency obstetric care* i.e. LSCS and other medical interventions.	Available	0%
New-born care & emergency care of sick children	Available	0%
Full range of family planning services including safe abortion services	Available	100%
Blood storage facility.	Available	25%
Blood bank	Available	0%
Essential laboratory services	Available	25%
ECG	Available	0%
X-RAY	Available	75%
USG	Available	0%
Referrals (transport) services	Available	100%