

**Original Research Paper****Pattern of Referrals in a District Hospital & the Factors Responsible**

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Dr Shahid Anjum**Abstract**

Background: Regionalization envisages a two-way flow of Patients & Services designates as “Referral in” and “Referral out” cases. “Referral in” generally means Patients from Sub center, Primary Health Centre, & Community Health Centre Referred to District Hospital for Specialized care.” Referred out” generally means Patients from District Hospital to Higher Centers like Medical College & other Postgraduate Institutions for Super Specialized Treatment.

Methodology: A prospective study was undertaken at district hospital with data collected for a 12-month period (MAY 2013 - APRIL 2014) to study (1) the rate of Referrals in a District Hospital & (2) Factors responsible for increased Referrals.

Results: Absence of Radiologist, Lack of Anesthetist, Shortage of rare Blood groups in Blood bank, Lack of Sophisticated Ventilators support, Cardiac monitors, Dialysis facilities, etc. have been the Major Factors for increased “Referral out” cases to Medical College.

Conclusion: Too much “Referral in” cases from all the PHC’s & CHC’s to District Hospital Cause Exhaustion of local supplies & Quality of Patient care suffers. Frequent “Referral out” cases add up to Fuel wastage & Pilferage resulting in Professional Misconduct & misuse of Ambulance services.

Keywords: Hospital, Regionalization, Referral, Radiologist, Anesthetist, Ventilators, Pilferage.

Introduction

Hospitals play an important role in promoting Health, preventing Disease & providing Rehabilitating services. Some of these activities have been an essential part of Hospital work, however, the increasing prevalence of lifestyle-related & chronic-diseases require a more expanded scope & systematic provision of activities such as therapeutic education, effective communication strategies to enable patients to take an active role in chronic disease-management

or motivational counseling.^[1] “General Hospital” term covers many type of Institutions ranging from the Rural Hospital to the District Hospital to the Bigger Institutions like Medical Colleges with facilities for Teaching & Research. General Hospital provides Comprehensive Medical care to the Community.^[2] Referral can be defined as any process in which health care providers at lower levels of the health system, who lack the skills, the facilities, or both to manage a given clinical condition, seek the assistance of providers of a

clinical condition in a patient who are better equipped or specially trained to guide them in managing or to take over responsibility for a particular episode^[3] Furthermore, higher-level hospitals in developing countries do not treat only referred patients; tertiary hospitals are frequently the first point of contact with health services for many patients^[3,4].

Regionalization is a system of Technical & Administrative Decentralization by establishment of "Levels of Care" which range from Primary Health Centre at the Community level, to District Hospital & Specialized Polyclinic at the Intermediate level & culminating in Higher Medical Centers where the practice of all Specialties is carried out with Teaching & Research as major concern.^[2] Regional Planning envisages creating a Hospital system on a Three-tier basis. The Rural Community is served with Rural Hospital of approx. 30-100 Beds providing general, medical, surgical, & maternity care. The District Hospital of approx. 100-250 Beds serves as a Local Hospital for the population in its immediate vicinity & as a Referral Hospital for a group of Rural Hospitals in its region providing medical, surgical, obstetrical & other Specialized Treatment.^[1] At the Third-tier, the Regional Hospital catering to the Intermediate Hospitals in a geographical region is designated to provide complete range of treatment including such specialties as Radiotherapy, Neurosurgery, Thoracic surgery, Oncology & soon & such Hospitals are associated with a Medical College & Post-graduate Teaching Centre.^[2] A study was undertaken to evaluate (1) the rate of Referrals in a District Hospital & (2) Factors responsible for increased Referrals.

Materials and Methods

A prospective study was undertaken at District Hospital with Data collected for a 12-month Period. Written informed consent was taken from all healthcare providers, and performance was assessed maintaining confidentiality. The ethical approval was obtained from Medical

Superintendent of District Hospital where the study was conducted. The results obtained were assessed using appropriate statistical tests.

Results

District Hospital Rajouri is a 250 bedded Hospital with a Multistory building provided with Lift system & separate OPD, Inpatients Wards including Casualty & Labor room and Diagnostic section. It is facilitated with a separate Diagnostic section containing CT Scan set up, Digital & Plain CR Set up, USG machine, Laboratory set up with Blood analyzer, & Blood bank with strength of about 100 blood bags. Casualty section is strengthened with 40 bedded Casualty Ward & 20 bedded Disaster ward & Emergency OT Set up, where a Casualty Medical Officer is performing duty 24 X 7.

Inpatient section is composed of One Ward each of Medicine, Surgery, Orthopedics & Pediatrics containing 25 beds each with separate Male & Female Toilets & Nurses counter with room. Gynae & Obs. Section is composed of about 50 beds separated by Preoperative & Postoperative Labor patients. It is strengthened by well-established Labor room with Special New Born Care Unit (SNCU) containing 9 Phototherapy machines & 1 Incubator for Resuscitative care to the newborn in labor room. All these sections are especially cared & funded under NRHM. A well-developed Operation Theatre (OT) Complex for Gynae & Obs. Patients is adjacent to Labor room & SNCU section where Laparoscopic cases are also entertained on Weekly basis. Nurses room is facilitated by Asha Greh just adjacent to it for smooth conduct of deliveries & better Patient care. Antenatal care for pregnant women & Zero-dose Immunization is particularly strengthened & positioned just in the vicinity of Labor room. Separate OPD Complex facilitates all the Multispecialty patient care including Surgery. Orthopedics, Medicine, Gynae. & Obs., Pediatrics, Ophthalmology, ENT, & Clinical psychologist consultation.

There were 922 referrals during the study period with an average of 2.5 referrals per day. Gynecology and obstetrics constituted the most number of referrals with a figure of 47.28% (n= 436) and ophthalmology witnessed the least number of referrals for the year (n= 4). The specialty and month wise breakup of referrals is given in table number 1. Complicated pregnancies followed by rare blood group was the most common cause of referral in obstetrics.

Head injuries, complex fractures and polytrauma was the commonest cause for referral in surgery and orthopedics department. We observed that head injury per se was not the cause for referral but absence of radiologist and thence lack of immediate advanced imaging led to increased referral in more than half of such patients. The specialty wise indications for referral are given in table 2.

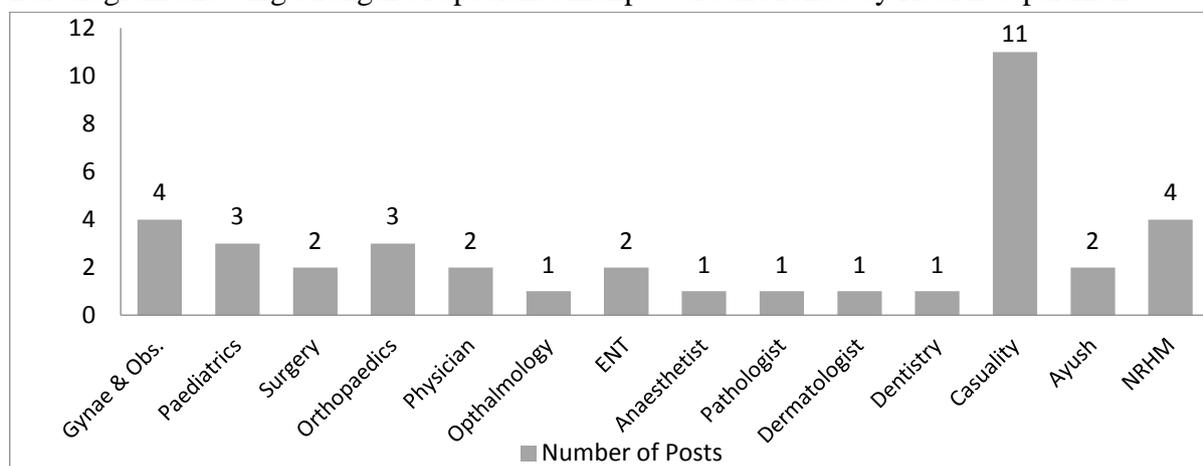
Table 1: Showing specialty wise break up of referral for the study period. (1 Year)

TABLE 1: OVERALL SPECIALTY-WISE REFERRALS													
S.NO.	SPECIALTY	May 2013	Jun 13	Jul 13	Aug 13	Sep 13	Oct 13	Nov 13	Dec 13	Jan 2014	Feb 2014	Mar 2014	Apr 2014
1	GYN. & OBS.	39	52	42	34	28	25	44	40	25	32	43	32
2	SNCU	05	23	03	04	05	07	10	08	05	08	10	05
3	SURG.	11	04	08	13	01	05	08	08	10	11	12	10
4	ORTH.	03	05	04	06	02	03	03	02	05	03	02	03
5	MED.	02	09	05	03	04	06	09	18	08	10	11	05
6	PAED.	02	04	01	02	02	04	03	10	10	04	07	02
7	EYE	-	01	-	-	-	-	01	-	-	01	01	-
8	ENT	01	01	-	-	-	-	02	-	01	01	02	-
9	CASUALTY	05	22	05	05	06	07	09	13	08	10	12	05
TOTAL (922)		68	121	68	67	48	57	89	90	72	80	100	62

Table 2: specialty wise causes for referral

CAUSES/REASONS OF REFERRAL OUTS		
S.NO.	DEPARTMENT	CAUSES
1	Gynae& Obs.	Complicated Pregnancies
		Rare Blood groups
2	SNCU & Paed.	Meconium aspiration syndrome
		Respiratory distress syndrome
		Birth asphyxia
3	Surgery	Severe head injury
		Blunt trauma Chest/Abdomen
4	Orthopedics	Complicated comminuted fractures
		Mangled limbs/ Mismanaged neglected trauma.
5	Medicine	Severe Cardiac problems
		Chronic Renal ailments requiring dialysis.

1. Bar diagram showing strength of specialist manpower sanctioned by Health department.



Discussion

The primary function of the referral hospital is to provide complex clinical care to patients referred from lower levels; however, no agreed international definition exists of which specific services should be provided in secondary or tertiary hospitals in developing countries. The exact range of services offered tends to vary substantially, even between tertiary hospitals within the same country, as much because of historical accident as deliberate design^[5]

Referral hospitals may perform a number of functions that provide population-level health benefits through direct involvement in public health interventions. Referral hospitals often prove to be a highly effective focal point for disease-specific health promotion and education activities. Bermuda's diabetes education program is centered in the main referral hospital and serves not only diagnosed patients but also families at risk. Large numbers of patients receive care in referral hospitals, and most survive with their suffering alleviated, having gained substantial benefit from the care they receive. Therefore, the aggregate direct personal health benefits from referral hospital care will almost certainly be high.^[5]

The most frequent subject in the research literature on referral hospitals in developing countries is the inappropriate utilization of higher-level facilities and the apparent failure of most referral systems in developing countries to function as intended. Broadly speaking, hospitals of all levels, up to and including national tertiary centers—especially in their out-patient departments—are overwhelmed by patients who could have been treated successfully at lower-level facilities, many of which reinforces the cycle and ensures that primary health care facilities remain underused and inefficient.^[6] Daily about 8-10 medico legal cases report to Casualty of District Hospital. Since no Radiologist is available in Hospital, for want of Authenticated Radiological reporting in X-ray, USG & CT Scan, majority of cases are being Referred out to Medical College for Radiological reporting. Blood

bank in District Hospital is also in Rudimentary shape which needs License for its proper shape & functioning. Many surgeries are postponed or "Referred out" to Medical College for deficiency of rare Blood groups like A-ve, B -ve, O -ve, AB -ve etc. Hence, Absence of Radiologist, Lack of Anesthetist, Shortage of rare Blood groups in Blood bank, Lack of Sophisticated Ventilators support, Cardiac monitors, Dialysis facilities, etc. have been the Major Factors for increased "Referral out" cases to Medical College. Since only one Anesthetist is available, it becomes very difficult to conduct Elective surgeries as Scheduled roaster but Emergency surgeries like Caesareans & Appendectomies etc. are however managed. This remains the major Lacunae for increased "Referrals out" cases to Medical College due to lack of Anesthetist to conduct Surgeries. The updated strength of specialists in a district hospital is given in bar diagram 1. Too much "Referral in" cases from all the PHC's & CHC's to District Hospital Cause Exhaustion of local supplies & Quality of Patient care suffers. Frequent "Referral out" cases add up to Fuel wastage & Pilferage resulting in inappropriate utilization & misuse of Ambulance services. Another important factor responsible for referral is lack of awareness among people and traditional bonesetters in rural areas, complicating the otherwise simple injuries to complex neglected trauma requiring specialist services for treatment⁷.

Conclusion & Recommendations

A restructuring of referral hospital services is certainly called for to improve appropriate referral and utilization, especially by remote and rural populations; to transform the inappropriate use of referral hospitals as primary health care providers; to improve efficiency; and to provide much better outreach and support to lower levels of care. We look more specifically at three areas for improving the efficiency of the hospital system: 1) interventions within the referral hospital, 2) the use of public-private partnerships, and 3) strengthening of the referral chain.

Improving the Efficiency of Referral Hospitals

^[8] ^[9] In summary, the key areas on which planners and managers should focus are as follows:

- Reducing inappropriate outpatient and inpatient use of referral.
- Improving systems to allow early discharge from the hospital.
- Ensuring that bed occupancy rates can be maintained as close as possible to optimal rates—namely, 85 percent for referral hospitals.
- Developing systems for booked outpatient appointments, admissions, and procedures to permit better planning of activity and staffing.
- Undertaking as much activity as possible on an ambulatory rather than an inpatient basis, supported by the use of “step-down” beds and patient hotels evaluating the staff skill mix and the potential for skill substitution, as well as efficient remuneration strategies, on a continuous basis.
- Evaluating and improving processes and systems, including cost-effective clinical guidelines for patient treatment.
- Ensuring that new or replacement referral hospitals conform as much as possible to available evidence on economies of scale—that is, that hospitals with fewer than 200 beds are likely to be scale inefficient and that diseconomies of scale are likely to become increasingly evident in hospitals with more than 600 beds.
- Adopting intelligent procurement processes and engaging ineffective negotiations with suppliers in relation to prices and service levels ensuring effective ordering, stock control, and distribution systems to minimize theft and wastage of key supplies.
- Undertaking planned preventive maintenance and programmed replacement of equipment and buildings.

Improving the Functionality of Referral System^[10]

An ideal referral system would ensure that patients can receive appropriate, high-quality care for their condition in the lowest cost and closest facility possible, given the resources available to the health system, with seamless transfer of information and responsibility as that patient is required to move up or down the referral chain. Improving the effective functioning of referral systems broadly requires progress in three areas: referral system design, facilitation of the smooth transfer of patients and information between levels, and what refer to as effective “referral discipline.”^[10] Improving referral system design must start with a detailed attempt to assess which services should be provided at which level of care, encompassing community- and home-based care, primary health care, district hospitals, secondary hospitals, tertiary hospitals, and specialized hospitals. From a physical planning perspective, planners should consider providing primary health care and district hospital walk in ambulatory services (emergency and general outpatients) in a physically distinct facility sited immediately next to the referral hospital. This arrangement not only enables triage and filtering of less severe cases (while proximity ensures that severe emergency cases can be transferred rapidly) but also enables rigorous enforcement of a referral-only policy within the referral hospital.

The development of effective patient transportation arrangements is also critical, not only to ensure that patients from remote areas have a fair chance of being successfully referred to a center of excellence (bearing in mind that most referral systems will almost certainly need to increase referral rates from rural areas), but also to ensure that patients can be discharged in a timely and well-planned fashion.

For reducing “Referred in” cases:

1. Mobile Medical Checkup camps should be conducted at CHC level to reduce the Load at District Hospital.

2. Screening Centers are to be set up at CHC level to avoid direct “Referred in” cases to District Hospital & thereby reducing load at District Hospital.

For reducing “Referral out” cases:

- 1) Strengthening Manpower like Radiologist, Anesthetist by providing Accommodation & further special incentives for filling the Lacunae at District Hospital level.
- 2) Up gradation of Blood bank facilities so that patients are not being referred out for want of rare Blood groups during Surgeries.
- 3) Improved Public behavior & attitude towards Doctors & avoiding violence incidents since majority of patients are being “Referred out” from District Hospitals to Medical Colleges to avoid undue obligations & local Leaders pressures over administration.
- 4) Proper & judicious use of 102 Services in cases of any Midway problems like Delivery or Death of patient to avoid any wastage of time & fuel.

Conflict of Interest: NIL

References

1. Groene O.; Barbero M.G.; Health promotion in Hospitals: Evidence & Quality Management; Europe; May 2005 ;page: 1-120.
2. Sakharkar BM; Principles of Hospital Administration & Planning; 2009; Vol.2; page:23-24.
3. Al-Mazrou, Y., S. Al-Shehri, and M. Rao. 1990. *Principles and Practice of Primary Health Care*. Riyadh: Al-Helal Press.
4. Mulligan, J., J. Fox-Rushby, T. Adam, B. Johns, and A. Mills. 2003. “Unit Costs of Health Care Inputs in Low and Middle Income Regions.” Working Paper 9, Disease Control Priorities Project, Fogarty.
5. National Department of Health, South Africa. 2003. “Strategic Framework for the Modernisation of Tertiary Hospital

Services”. National Department of Health, South Africa, Pretoria.

6. Stefanini, A. 1994. “District Hospitals and Strengthening Referral Systems in Developing Countries.” *World Hospitals* 30 (2): 14–19.
7. Rashid Anjum, Sharma V, Jindal R, Singh TP, Rathee N. Epidemiologic pattern of paediatric supracondylar fractures of humerus in a teaching hospital of rural India: A prospective study of 263 cases. *Chin J Traumatol*. 2017; 20: 158-160.
8. Barnum, H., and J. Kutzin. 1993. *Public Hospitals in Developing Countries: Resource Use, Cost, Financing*. Baltimore: Johns Hopkins University Press.
9. Muraleedharan, V. R. 1999. “Characteristics and Structure of the Private Hospital Sector in Urban India: A Study of Madras City.” Small Applied Research Paper 5, Abt Associates, Partnerships for Health Reform Project, Bethesda, MD.
10. Walford, V., and K. Grant. 1998. “Health Sector Reform: Improving Hospital Efficiency.” London: Department for International Development, Health Sector Resource Centre.