



A RETROSPECTIVE STUDY TO DETERMINE THE EFFECT OF "REFERRAL-IN" ADMISSIONS ON THE FUNCTIONING OF GYNECOLOGY & OBSTETRICS DEPARTMENT IN A TERTIARY CARE HOSPITAL OF NORTH INDIA.

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ABSTRACT

Introduction: Regionalization envisages a two-way flow of patients & services designated as "Referral-in" and "Referral-out" cases. "Referral-in" generally means patients from Sub Center, Primary Health Center, Community Health Center & District Hospitals Referred to Tertiary Care Hospital for Specialized care. "Referred-out" Generally means patients from Tertiary Care Hospitals to Higher Centers like Apex Institutions including AIIMS (New Delhi), SKIMS(Srinagar), PGIMER(Chandigarh, SGPGI(Lucknow), etc. for Super specialized treatment.

Objective: To determine the effect of Referral- in admissions on the functioning of Gynecology & Obstetrics Department in a Teaching Hospital.

Methodology: An Observational study was conducted over a period of 12 months from February 2019 to January 2020 in a 750 –bedded Tertiary Care Hospital of Jammu(UT) popularly Known as Shri Maharaja Gulab Singh(SMGS) Hospital, Jammu.

Observations & Results: A detailed description of academic as well as functional status of Gynae & Obs. Department including Faculty-position, OPD patients, Inpatients admitted, Deliveries conducted(LSCS & MLE), Surgical Operations(Major as well as Minor) along with Bed-Occupancy Rate(BOR) & Referred-in Admissions during the study duration was reconciled & put forth in Tabulated Form after collecting from the Medical Records Department of the Hospital & displayed Statistically in Bar-Charts & pie-Chart.

Discussion: Excessive Referral-in admissions to Teaching Hospital from PHC,SDH,DH & AH Level results in Overcrowding/Congestion in Hospital Wards culminating in Exhaustion of Resources like Drugs, Medicines, Reagents & other logistics. Supportive Services like Sanitation, Ambulance Transportation & Dietary facilities get worsened thereby exaggerating the Sepsis as well as nosocomial infection rate. There are increased chances of Corruption, & Violence/Verbal Scuffles between Hospital Staff & Attendants of patients.

Conclusion & Recommendation: Instead of irrationally referring the patients to Teaching Hospitals from Lower level Health Care Facilities(HCF), they should be first sent to Associated Medical College Hospitals established at different Districts before being referred to Provincial Tertiary care Hospital thereby reducing the extra-load over Teaching Hospitals resulting in rapid depletion of resources as well as Medico- Social and Law & Order problems.

KEYWORDS : Regionalization, Specialized, Inpatients, Deliveries, Transportation, Nosocomial, Sepsis.

INTRODUCTION:

A Hospital is an integral part of a Social and Medical organization, the function of which is to provide for the population complete Health care, both Curative and Preventive, and whose outpatient services reach out to the family and its home environment; the hospital is also a centre for the training of health workers and Biosocial research.^[1]

Primary, Secondary and Tertiary care: Treatment services are categorized as primary, secondary and tertiary care. Primary care is the entry point into the health system and usually obtained through family physicians and through the hospital-based ambulatory outpatients services— besides the community health workers and multipurpose workers at the grass-roots level. WHO defined Primary Health Care as "essential health care based on practical, scientifically sound and socially acceptable methods and technology made Universally accessible to individuals and families. It is the First level of contact of individuals, the family and the community and constitutes the first element of a continuing health process." Secondary care services are at an Intermediate level in the chain of hospitals. The services of smaller Peripheral hospitals and General hospitals would fit in this category. Tertiary care refers to highly specialized care in specialist hospitals and specialty services provided in Superspeciality centre and Research centre.^[1]

Any hospital, including a District hospital, will receive referrals from lower levels of care.

Indeed, 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 who are better equipped or specially trained to guide them in managing or to take over responsibility for a particular episode of a clinical condition in a patient (Al-Mazrou, Al-Shehri, and Rao 1990).^[2]

The Referral process does not simply entail transferring a patient from a lower to a higher level of care, nor does it end when a patient is discharged from a referral hospital. An effective Referral system requires good communication and coordination between levels of care and support from higher to lower levels to help manage patients at the lowest level of care possible. However, Referral hospitals should offer significant support to personnel in lower-level facilities, and specialist staff members should ideally spend a significant portion of their time providing advice and support beyond the walls of their own hospital, either in person or through various modes of Telecommunication.^[4]

The functions of Referral Hospitals may broadly be Categorized into (a) the Direct clinical services provided to individual patients within the hospital and the community and (b) a set of broader functions only indirectly related to patient care.^[1]

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 Walford and Grant (1998,) refer to as effective "Referral discipline."⁽³⁾

Hospitals overcrowded with patients who could be more cheaply treated in Smaller facilities is a common feature of poorly functioning Referral Systems.⁽⁸⁾

OBJECTIVE:

To determine the effects of Referral-in admissions on the functioning of Gynecology & Obstetrics Department in a Teaching Hospital.

METHODOLOGY:

An Observational-study was conducted over a period of 12 months from February 2019 to January 2020 in a 750 –Bedded Tertiary Care Hospital of Jammu(UT) popularly Known as Shri Maharaja Gulab Singh(SMGS) Hospital, Jammu.

Data was collected from Medical-Records Department of SMGS Hospital Jammu including OPD patients, Inpatients admitted, Deliveries Conducted (LSCS/MLE), Surgeries performed(Major/Minor)as well as "Referred-in" Patients & Bed-Occupancy Rate(BOR) during the Study-period was displayed Statistically as per the records provided .Ethical approval was taken from the Institutional Ethical Committee. Data were entered & analyzed using SPSS version 20.

SMGS Hospital is a 750-Bedded Referral Hospital established on 6th May 1940 by His Excellency Maharaja Hari Singh ji. It is a Tertiary-Level Hospital comprising of Four(4) Clinical Specialties including Gynecology & Obstetrics, Pediatrics, ENT(Otolaryngology) & Dermatology. It is particularly providing Maternal & Child Health Services to all the 10 Districts of Jammu Province. The Entire Hospital is divided into 21 Wards labeled as Ward 1 to Ward 21 for the Inpatients admitted. The Critical patients are admitted in Intensive-Care Units like Recovery ICU in Gynae/Obs. & NICU-A, NICU-B, NICU-C. & PICU in Pediatrics department.

Department-wise Bed Strength Of SMGS Hospital Jammu.

| S.No. | DEPARTMENT | TOTAL BEDS |
|--------------|-------------------------|------------|
| 1 | Gynecology & Obstetrics | 240 |
| 2 | Pediatrics | 400 |
| 3 | ENT(Otolaryngology) | 40 |
| 4 | Dermatology | 70 |
| TOTAL | | 750 |

OBSERVATIONS & RESULTS:

An Observational-study was conducted over a period of 12 months from February 2019 to January 2020 in a 750 –Bedded Tertiary Care Hospital of Jammu(UT) popularly Known as Shri Maharaja Gulab Singh(SMGS) Hospital, Jammu.

A detailed description of Academic as well as Functional status of Gynae & Obs. Department including Faculty-position, OPD patients, Inpatients admitted, Deliveries conducted(LSCS & MLE), Surgical Operations(Major as well as Minor) along with Bed-Occupancy Rate(BOR) & Referral-in Admissions during the study duration was recon ciliated & put forth in Tabulated-form by the Medical Records Department of the Hospital & displayed Statistically in Bar-Charts & Pie-Chart.

Bed-Occupancy Rate(BOR):

Is the ratio of actual patient days expressed as a percentage of maximum possible patient days(based on Bed Complement) during any given period.

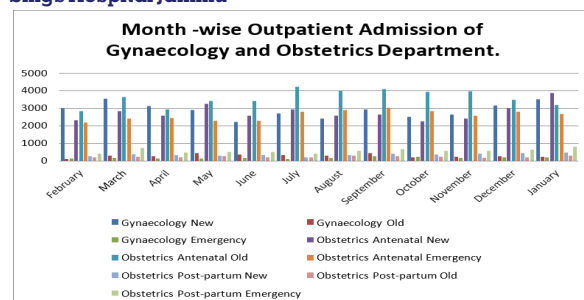
BOR = Number of Patient days during a given period(Based on discharge)X 100

Bed- Complement X Days during same period

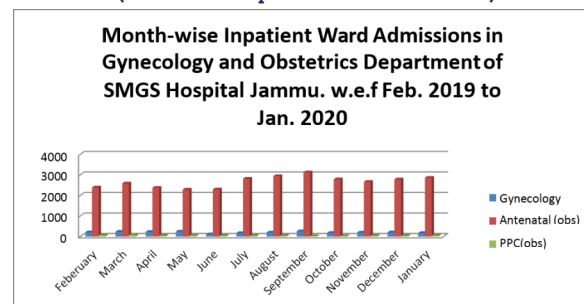
Designated- list of Faculty-Members of Gynecology & Obstetrics Department in SMGS Hospital Jammu.

| FACULTY | GU-1A | GU-1B | GU-II | GU-III | GU-IV | GU-V |
|----------------------|-------|-------|-------|--------|-------|-------|
| Professors | 1 | ----- | 1 | 1 | 1 | ----- |
| Associate Professors | 1 | 1 | 1 | 1 | ----- | 1 |
| Assistant Professors | 1 | 1 | 1 | ----- | 1 | 1 |
| Lecturers | 1 | ----- | ----- | 1 | 1 | ----- |
| Registrars | 2 | 2 | 3 | 2 | 3 | 2 |
| NHM Consultants | 1 | ----- | 1 | 1 | ----- | ----- |

Barcharts Related To Study On Referral-in Admissions In Smgs Hospital Jammu



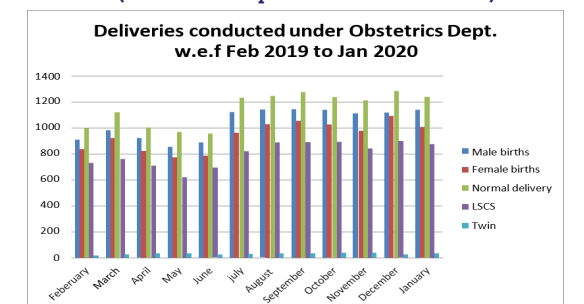
Barchart-1 (Schematic Representation Of Table-1)



Barchart-2 (Schematic Representation Of Table-2)

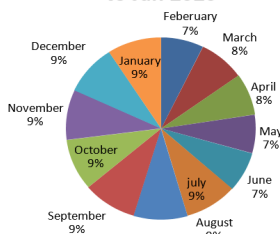


Barchart-3 (Schematic Representation Of Table-3)



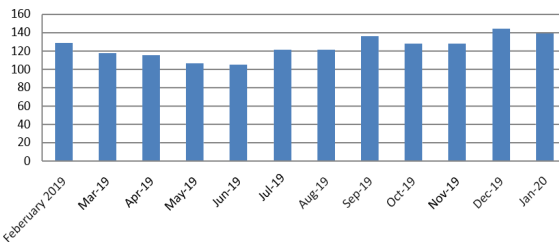
Barchart-4 (Schematic Representation Of Table-4)

List of "Referral- in" Patients Received and Admitted under Gynaecology & Obstetrics deptt. w.e.f. Feb 2019 to Jan 2020



Barchart-5 (Schematic Representation Of Table-5)

Bed-Occupancy Rate (BOR) in Patient Wards of Gynecology & Obstetrics Department in SMGS Hospital w.e.f. Feb. 2019 to January 2020



Barchart-6(Schematic Representation Of Table-6)

Tables Related To Study On Referral-in Admissions In Smgs Hospital Jammu

Table-1

Month-wise Outpatient(OPD) Admissions of Gynecology & Obstetrics Department in SMGS Hospital Jammu w.e.f Feb.2019 to Jan.2020

| Month | Gynecology | | | | Obstetrics | | | | | | | | G.Total |
|-----------|------------|------|-----------|-------|------------|-------|-------|--------|-------------------|------|-------|--------|---------|
| | New | Old | Emergency | Total | Antenatal | | | | Post-partum cases | | | | |
| | | | | | New | Old | Emeg | Total | New | Old | Total | | |
| February | 3017 | 94 | 132 | 3243 | 2306 | 2820 | 2194 | 7410 | 243 | 194 | 437 | 11090 | |
| March | 3541 | 287 | 158 | 3986 | 2819 | 3651 | 2421 | 8891 | 394 | 339 | 733 | 13610 | |
| April | 3129 | 275 | 126 | 3530 | 2580 | 2941 | 2434 | 7955 | 312 | 178 | 490 | 11975 | |
| May | 2890 | 462 | 135 | 3487 | 3254 | 3414 | 2292 | 8960 | 285 | 245 | 530 | 12977 | |
| June | 2225 | 355 | 171 | 2751 | 2587 | 3416 | 2305 | 8308 | 317 | 179 | 496 | 11555 | |
| July | 2699 | 310 | 109 | 3118 | 2930 | 4226 | 2810 | 9966 | 212 | 191 | 403 | 13487 | |
| August | 2401 | 287 | 166 | 2854 | 2569 | 3985 | 2892 | 9446 | 309 | 283 | 592 | 12892 | |
| September | 2927 | 462 | 246 | 3635 | 2653 | 4099 | 3033 | 9785 | 404 | 270 | 674 | 14094 | |
| October | 2497 | 207 | 222 | 2926 | 2249 | 3922 | 2826 | 8997 | 348 | 216 | 564 | 12487 | |
| November | 2653 | 225 | 153 | 3031 | 2403 | 3943 | 2590 | 8936 | 410 | 168 | 578 | 12545 | |
| December | 3149 | 260 | 195 | 3604 | 3005 | 3477 | 2811 | 9293 | 443 | 204 | 647 | 13544 | |
| January | 3511 | 228 | 207 | 3946 | 3882 | 3195 | 2683 | 9760 | 488 | 305 | 793 | 14499 | |
| G.Total | 34639 | 3452 | 2020 | 40111 | 33327 | 43089 | 31291 | 107707 | 4165 | 2772 | 6937 | 154755 | |

Table-2

Month-wise Inpatient Ward Admissions in Gynecology & Obstetrics Department in SMGS Hospital Jammu w.e.f. Feb.2019 to Jan.2020

| S. No. | Month | Gynecology | Antenatal (Obs.) | PPC (Obs) | G.Total |
|--------|-----------|------------|------------------|-----------|---------|
| 1 | February | 204 | 2388 | 61 | 2653 |
| 2 | March | 234 | 2585 | 76 | 2895 |
| 3 | April | 224 | 2371 | 47 | 2642 |
| 4 | May | 241 | 2284 | 48 | 2573 |
| 5 | June | 107 | 2294 | 40 | 2541 |
| 6 | July | 168 | 2818 | 36 | 3022 |
| 7 | August | 193 | 2939 | 38 | 3170 |
| 8 | September | 258 | 3125 | 21 | 3404 |
| 9 | October | 175 | 2786 | 24 | 2985 |
| 10 | November | 194 | 2664 | 41 | 2899 |
| 11 | December | 201 | 2785 | 40 | 3026 |
| 12 | January | 169 | 2863 | 52 | 3084 |
| | G.Total | 2468 | 31902 | 524 | 34894 |

Table-3

Month-wise Gynecological Surgical Operations performed under Gynecology Department of SMGS Hospital Jammu w.e.f.Feb.2019 to Jan.2020.

| S. No. | Month | Major | Minor | Emeg. (Major) | Emeg. (Minor) | G.Total |
|--------|-----------|-------|-------|---------------|---------------|---------|
| 1 | February | 145 | 237 | 806 | 56 | 1244 |
| 2 | March | 155 | 276 | 765 | 37 | 1233 |
| 3 | April | 164 | 259 | 746 | 21 | 1190 |
| 4 | May | 160 | 260 | 659 | 61 | 1140 |
| 5 | June | 105 | 268 | 710 | 47 | 1130 |
| 6 | July | 105 | 217 | 817 | 54 | 1193 |
| 7 | August | 126 | 281 | 922 | 20 | 1349 |
| 8 | September | 155 | 323 | 936 | 23 | 1437 |
| 9 | October | 155 | 238 | 880 | 48 | 1321 |

| | | | | | | |
|----|----------|------|------|------|-----|-------|
| 10 | November | 160 | 199 | 829 | 43 | 1231 |
| 11 | December | 155 | 237 | 886 | 33 | 1313 |
| 12 | January | 140 | 276 | 887 | 36 | 1339 |
| | G.Total | 1725 | 3071 | 9843 | 479 | 15118 |

Table-4

Month-wise Deliveries under Obstetrics Department in SMGS Hospital Jammu w.e.f.Feb.2019 to Jan.2020.

| S. No | Month | Total Birth | | | Total Deliveries | | | Twin | Triplet |
|-------|-----------|-------------|--------|---------|------------------|----------------|-------|------|---------|
| | | Male | Female | G.Total | Normal(ML S) | LSC Deliveries | Total | | |
| 1 | February | 909 | 838 | 1747 | 999 | 730 | 1729 | 18 | ---- |
| 2 | March | 981 | 925 | 1906 | 1118 | 761 | 1879 | 25 | 1 |
| 3 | April | 921 | 821 | 1742 | 1002 | 709 | 1711 | 31 | ---- |
| 4 | May | 855 | 773 | 1628 | 968 | 623 | 1591 | 33 | 2 |
| 5 | June | 889 | 785 | 1674 | 956 | 691 | 1647 | 24 | 1 |
| 6 | July | 1122 | 962 | 2084 | 1235 | 821 | 2056 | 29 | ---- |
| 7 | August | 1138 | 1030 | 2168 | 1249 | 889 | 2138 | 30 | ---- |
| 8 | September | 1144 | 1055 | 2199 | 1275 | 891 | 2166 | 31 | 1 |
| 9 | October | 1142 | 1026 | 2168 | 1236 | 893 | 2129 | 37 | 1 |
| 10 | November | 1112 | 977 | 2089 | 1213 | 840 | 2053 | 36 | ---- |
| 11 | December | 1118 | 1094 | 2212 | 1287 | 896 | 2183 | 25 | 2 |
| 12 | January | 1140 | 1007 | 2147 | 1238 | 875 | 2113 | 34 | ---- |
| | G.Total | 12471 | 11293 | 23764 | 13776 | 9619 | 23395 | 353 | 8 |

Table-5

List of "Referred in" Patients Received & Admitted under Gynecology & Obstetrics Department in SMGS Hospital Jammu w.e.f. Feb 2019 to Jan.2020.

| S.No. | MONTH | NUMBER OF PATIENTS |
|-------|-------|--------------------|
|-------|-------|--------------------|

| | | |
|----|----------------|------|
| 1 | February-2019 | 135 |
| 2 | March-2019 | 599 |
| 3 | April-2019 | 532 |
| 4 | May-2019 | 396 |
| 5 | June-2019 | 417 |
| 6 | July-2019 | 268 |
| 7 | August-2019 | 377 |
| 8 | September-2019 | 274 |
| 9 | October-2019 | 514 |
| 10 | November-2019 | 463 |
| 11 | December-2019 | 598 |
| 12 | January-2020 | 542 |
| | G.Total | 5115 |

Table-6

| Bed-Occupancy Rate(BOR) IN Wards of Gynecology & Obstetrics Department of SMGS Hospital Jammu w.e.f.Feb.2019 to Jan.2020. | | | |
|---|-------------|------------|---------------------|
| S.No | MONTH | TOTAL BEDS | BED OCCUPANCY RATE% |
| 1 | February | 240 | 129% |
| 2 | March | 240 | 117% |
| 3 | April | 240 | 115% |
| 4 | May | 240 | 106% |
| 5 | June | 240 | 105% |
| 6 | July | 240 | 121% |
| 7 | August | 240 | 121% |
| 8 | September | 240 | 136% |
| 9 | October | 240 | 128% |
| 10 | November | 240 | 128% |
| 11 | December | 240 | 144% |
| 12 | January | 240 | 136% |
| | Grand Total | | 123.83% |

DISCUSSION:

Health Service coverage is considered as a concept expressing the extent of interaction between the Service & the people for whom it is intended, this interaction not being limited to a particular aspect of service provision but ranging over the whole process from Resource allocation to Achievement of the desired objective.^[9]

Certain "Avoidable Factors" in Maternal Mortality based on the standards realistic under prevailing country conditions: patient factors or inaccessible health services and failures in the health services delivery system. Patient Factors are defined as those actions by the patient that are faulty: delayed arrival or non arrival at a health facility, failure to seek legal abortion or interference with pregnancy, nonuse of prenatal care, and transportation problems. Conditions in the Health services delivery system which exacerbate a woman's condition are shortage of trained personnel, lack of equipment and supplies, and poor patient management. Prevention and control of Maternal Mortality is dependent on structural factors and women's resources such as their time, money, information they have, and their authority over decision making.^[10]

Excessive Referral-in admissions to Teaching Hospital from Primary Health Care Facilities(HCF) including Allopathic dispensaries(AD),Primary Health Centres (PHC),Community Health Centres (CHC)/Sub- District Hospitals(SDH),District Hospitals(DH) & Associated Hospital(AH) Level results in Overcrowding/Congestion in Hospital Wards culminating in Exhaustion of Resources like Drugs, Medicines, Reagents & other logistics.

Supportive Services like Sanitation, Ambulance Transportation & Dietary facilities get worsened thereby exaggerating the Sepsis as well as Nasocomial infection rate.

There are increased chances of Corruption, & Violence/Verbal Scuffles between Hospital Staff & Attendants of patients.

Manifold rise in Bed-Occupancy Rate(Doubled/Triples)due to exuberant rise in Referral-in admissions in Teaching Hospitals results in Shortage in Logistics for Patient-care like Beds, Trolleys, Wheelchairs, etc.

Transportation facilities like Ambulances also suffer badly.

Overcrowding of Patients results in Long waiting Queues at Registration-Counters thereby affecting Patient-care. Prolonged Operation- dates for Elective Surgeries result in worsening of Critical patients.

Overburdened Emergency & Wards of Hospitals result in Premature exhaustion of available resources like Drugs, Medicines, & Reagents with shortage of Buffer-stock.

Supportive services like Sanitation & Hygiene suffer badly & get worsened due to Overcrowding/Congestion of Referral-in patients resulting in exacerbation of Nasocomial infection rate thereby increasing the Overall Sepsis rate in the Hospital. Consequently, it will adversely affect the Morbidity Indicators of the Hospital resulting in rise of Parameters of Infant Mortality Rate(IMR) as well as Maternal Mortality Rate (MMR) in Maternal & Child Hospital.

Dietary services are also affected due to depletion of perishable/non-perishable consumables due to excessive Overcrowding resulting from massive Referral-in admissions of patients in Teaching Hospitals.

Fall in the Morale values among Staff-members & general Public coming to Hospital due to Overcrowding/Congestion problem created due to excessive Referral-in admissions results in Illegal activities like Theft, Pilferage, Corruption, Violence, Scuffle, etc.

CONCLUSION & RECOMMENDATIONS:

Strong Referral Hospitals can distort priorities & undermine basic services, but they also provide important Health benefits to large number of patients whom they treat successfully.^[4]

Referral Hospitals provide essential support to Lower levels of the System, which cannot function effectively without access to Upward Referral, & they are frequently the most functional component of the Health System, paying greatest attention to Quality of Care.^[4]

A Restructuring of Referral Hospital Services is certainly called for to improve appropriate Referral & utilization, especially by remote & rural population; to transform the inappropriate use of Referral Hospitals as Primary Health Care providers; to improve efficiency; & to provide much better Outreach & support to Lower level of Care.^[4]The main Objective of the Referral Studies is to improve the Current pattern of seeking prior case before arriving at a Health Centre or Hospital as a key aspect of Referral System of Primary Health Care unit in different regions of India.^[6]

To establish the proper Standards of Optimal Referral of Emergencies in District Referral System, the Pre- requisites for an Ideal Referral patients include(a)Referred patient accompanied by a Referral- Form(b)Availability of well-equipped Ambulance 24 X 7 hrs(c) Proper communication between Institutions involved whenever patient is referred to Higher Centre.^[5]

Different Referral studies are aimed to determine the Referral-rate, the Characteristics of the Patients referred, the reasons for Referral & its ultimate outcome. On analysis, it has been

authenticated that more than half of Referrals are for Treatment whereas Others are only for Investigation purposes.^[7]

Recommendations:

proposed for reducing the Complications arising due to extra-load of Referral- in Admissions at Teaching Hospitals Level:

- (1) Patients from the respective areas in the periphery should be referred to the concerned Medical College of the District catering that area.
- (2) During referral of the patient, any delay in the Treatment can increase morbidity & mortality.
- (3) Referral System in Hospitals may improve by Allowing Early Discharge of Patients from Hospitals after Treatment.
- (4) Decreased load of Referrals to the Teaching Hospital, results in improvement of the Quality of patient care.
- (5) With reduced Referrals, Doctors in the Hospital can treat patients by using Innovative Techniques & Sophisticated Technology, thereby imparting better Surgical skills to the future generation.
- (6) With reduced load of Referrals to the Teaching Hospital, patients get better medical facilities including Bed & Nursing care.
- (7) Bed-Occupancy Rate(BOR) should be maintained close to the Optimal Level i.e 85% for Referral Hospitals.
- (8) For justified Referrals, Hospital Authorities are held accountable for any delay or negligence in the treatment.
- (9) With reduced Referrals to the Teaching Hospitals, the crowd of attendants/visitors decrease, resulting in reduced rate of Nasocomial infections & ultimately zero sepsis.
- (10) Referral Hospitals should follow practices of effective Ordering, Stock control & Distribution systems to minimize Theft & Wastage of key supplies.

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