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JUDICIOUS FINANCIAL MANAGEMENT DECISION ON HOSPITAL (PRIVATE WARD INFRASTRUCTURE) RENOVATION BOOSTS PATIENTS' WELFARE (HAPPINESS) COMBINED WITH PROFITABILITY -- CASE STUDY OF SANJAY GANDHI POST GRADUATE INSTITUTE OF MEDICAL SCIENCES: LUCKNOW, INDIA

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Abstract

Patient's satisfaction is one of the most important factors in the present healthcare scenario whether it is regarding the medical care, supportive services or related to the behavioral aspect of the doctors and the staff. This study is aimed to justify the effectivity of decision of renovation as well as the patient's perception about the facilities now being provided in the private wards. The effectivity of decision was analyzed on the basis of utilization of services, financial outcome as well as patient satisfaction. The study was carried out during September 2007-November 2007. Selected group of patients (50) was contacted for feedback on the facilities available in private rooms and their satisfaction. The study shows that the occupancy rate per month during fiscal year 1997-98 was as low as 21.25 per cent but it has been increased up to 56.18 per cent after renovation. Total revenue from May 2001 to March 2007 was found to be Rs. 89.36 million. Revenue generated after breakeven point was Rs. 58.31 million. Maintenance cost was Rs. 13.88 million and thus total profit was Rs. 44.43 million after renovation.

Key Words: Healthcare; Private wards renovation; SWOT analysis

JEL Classification: D61, I11, I31, O53,

Introduction

Health is a world-wide social goal, maintenance of which is a major social investment Health is multidimensional and stands as central idea to the concept of quality of life. Health on one hand is considered as a highly personal responsibility and on other hand a major public concern. It thus involves the joint effort of the whole social fabric, viz. the individual, the community and the state to protect and promote health. Hospital is a unique institution of man which, as an operating system could be seen as cohesive of various sub-systems, comprising of cure, care and minor sub-systems which in broad undertakes various components like administrative, circulation, environment and technical factors. The above mentioned elements of hospital system contribute in planning a contemporary hospital which is designed in a way to maximize the efficiency of system with the target to cater with felicity so as to serve quality health care.

Health care organizers and providers play a leading role in continuously improving the performance of

The authors own full responsibility for the contents of the paper.

medical care delivery system throughout world. In the present scenario health has evolved as a product of human biology, environment, ways of living, economic status and health services. The society's health is influenced by the accessibility, affordability, quality, availability and utilization of health services. The consumers of healthcare are demanding better services from healthcare institutions. The globalization and liberalization have developed the patients responsibilities as they are more organized, politically conscious of their rights and demanding by nature. This has forced all the hospital administrators to think about quality management and patient delight.[1] Health services when offered in hospitable environment, leads to a patient delight. Patient satisfaction, which being the base of quality health services in modern times, includes a vast a variety of services. And among all services provided by hospital, accommodation facility heads in achieving the very motive of patient delight. For this purpose the wards have now been standardized in categories from general to private ward, delivering better accommodation facilities thereby increasing cost of building and infrastructure. However, it is imperative for a health care organization to manage its assets like building, furniture, machines etc in an effective way so that it can serve the organization in the long run benefiting it with improved quality of care.[2]

The objective of a health care organization has always been to render services, which is now no more restricted to medical services only; its premises have been expanded to aim for improve patient care,with such facilities added and various assets acquired by the organization. In many cases they also generate sizeable amount of revenue for the organization concerned. For instance, the **approach of private ward built inside the hospital is to serve a quality patient care and providing accommodation to the relatives that can generate a considerable amount of revenue through per day charges of a room being taken for its use** and scientific management of such resources is of utmost importance.

Objectives

The significance of the study undertaken lies in its effort to surface the importance and need of redesigning the wornout infrastructure and poor management of private wards at Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPGIMS) Lucknow, UP, India.

With heavy capital investment already incurred on construction of private ward, the occupancy was not up to the mark , patients were dissatisfied with overall facilities and upkeep. Therefore renovation of private ward infrastructure was done primarily for patient satisfaction leading to increase in bed occupancy. Though earning a profit was not the objective of the Institute) it became necessary for the Administration to conduct the following study and measure its effectivity in its true sense with the following objectives :

- To study the available infrastructure and facility provided to the patient in private rooms;
- To find out expenditure incurred (renovation / recurring) etc in private rooms;
- To study the utilization pattern of private room and the pattern of revenue generation out of utilization;
- To draw out the conclusion whether the decision was in right direction or not;
- To recommend for further strengthening for more patient satisfaction.

Methodology Used

- The study was conducted during September 2007- November 2007
- The location and the available facilities in the private room were observed and were taken into account.
- The bed occupancy rate (BOR) for financial year 1997-1998 to 1999-2000 was collected
- Procedure of private room utilization was studied in detail in terms of bed occupancy and revenue generated during past 6 financial years (2001-2007). The revenue generation was compared with the expenditure incurred in renovation.
- The data related to cost of renovation done so far was collected from department. The revenue generation was compared with the expenditure incurred. The break-even point was calculated and observed that whether it was cost beneficial or not.
- Selected group of patients (50) was contacted for feedback on the facilities available in private room and their satisfaction, thus cost effectiveness was observed.
- Based on the above points recommendation is made for enhancing of private room facilities.

Research Findings

Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, U.P. is a 740-bedded tertiary level referral hospital. It comprises of 12 super specialties as clinical specialties and para-medical specialties. The hospital caters on an average 3000 patients from Monday to Saturday in Out Patient Department (OPD) including newly registered as well as follow-up patients. For inpatient services hospital comprises of ward facility, located in G block on 9 distinct floors. Each floor is divided into A and B segments. With the perspective for better patient care and comfort, wards are further categorized into private and general wards. The total strength of private wards is 108 in numbers which are divided into A and B segments, consisting 48 and 60 private rooms respectively.

The decision for private ward accommodation depends upon the choice and affordability of the patient and there is no compulsion to choose the private ward accommodation for any kind of treatment. The line of treatment is not affected by the choice of accommodation

- **Infrastructure**

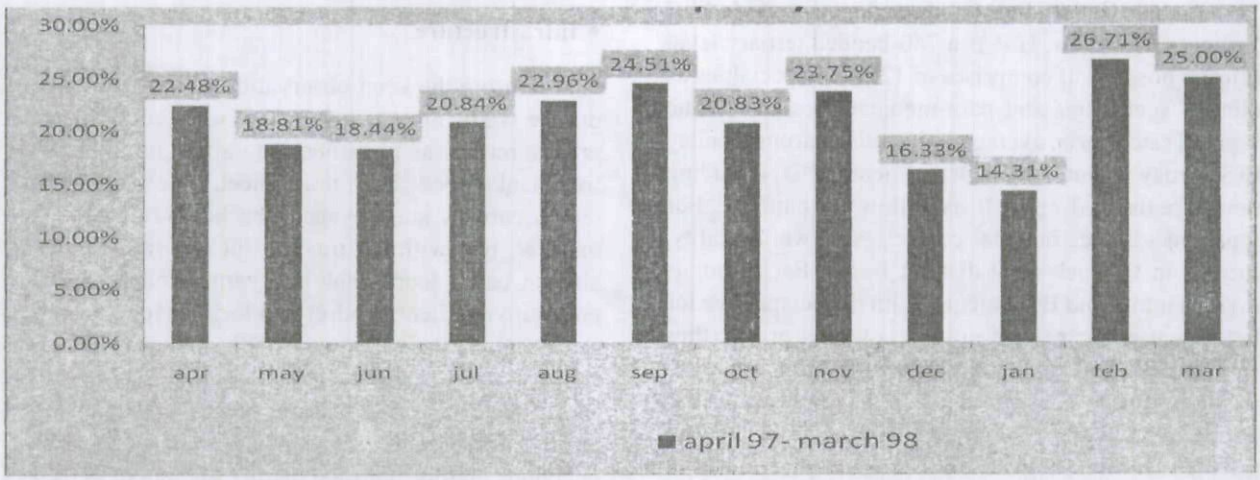
During the keen observation of infrastructure of private wards after renovation, it was found that each private room was furnished with all-required facilities like blanket, bed sheet, draw sheet, pillow with cover, towels, curtains, kurta, pyajama, bucket and mug,jug,glass tumbler, bed with mattress & locker, sofa-cum bed, almirah, basin, door & table mat, garment hanger & stand, mosquito repellent, Godrej pad lock, chappal (sandal), centre table, chair, bed side table & locker, T.V set, telephone, refrigerator, heat convector, dust bin, bathing stool and plastic stool. Various other facilities included attached bathrooms with hot and cold water supply, telephone facility, hot food facility for patient as well as any one of patient attendant.

To study the utilization pattern of private wards before renovation bed occupancy rate was calculated for the fiscal year 1997-98 as follows :

TABLE 1
PRIVATE WARDS BED OCCUPANCY RATE BEFORE RENOVATION : SGPIMS

Month	Maximum inpatient days	Total inpatient days	Bed occupancy rate (%)
April	2700	607	22.48
May	2790	525	18.81
June	2700	498	18.44
July	2790	583	20.89
August	2976	684	22.96
September	2880	706	24.51
October	2976	620	20.83
November	2880	684	23.75
December	2976	495	16.33
January	2976	426	14.31
February	2688	718	16.71
March	2976	744	25.00

FIGURE 1
BED OCCUPANCY RATE : 1997-1998



The **Figure 1** here depicts the occupancy rate per month during fiscal year 1997-98 .The average occupancy rate was found to be as low as 21.248 per cent during this period. Various problems which were considered as main reasons for underutilization were –

- Poor maintenance of the wards
- Poor air-conditioning facilities
- Seepage
- Worn-out rooms
- Insects/ cockroach
- Inefficient management

In order to put a check on above mentioned problems management took decision of renovation of private ward after situational analysis.

SWOT Analysis
(Strength, Weakness, Opportunity, Threat)

To reach the decision, SWOT analysis was done. Various strength, weakness, opportunities and threats were analyzed-

Strength

- Tertiary care hospital with qualified Doctors, Nurses and other paramedical staff.
- Modern sophisticated equipments
- High quality health care.
- Super specialized health care at subsidized price.
- Adequate funds in hand.

Weakness

- Lack of system approach.
- Inefficient private ward maintenance.
- Stumbling private ward infrastructure.

Opportunity

- Increased trend of hospital reporting and need for admissions.

Threat

- Under utilization of private ward facility even after renovation

With a view to increase strength and opportunities and with an expectation to decrease weakness in future, the management took final decision for renovation.

The process of renovation took place in two phases with the plan to renovate 60 rooms of segment B as a phase 1 action and 48 rooms of segment A as phase 2 action. The **entire process of renovation was done during period 2001-2003**. After renovation, the overall management of renovated private ward was separated from the ward sister-incharge and a hotel pattern was adopted. Since the rate fixed at Rs.750 per bed per day was very old and heavy capital expenditure was incurred for the renovation; therefore, it was decided to increase the room charges Rs. 1000 per bed per day.

As low-bed occupancy rate was one of the major reasons behind the decision of renovation it became an utter necessity for the management to assess the extent of utilization of resources after structural changes for which the fiscal year 2001-02 to 2006-07 was taken as the study period.

TABLE 2
BED OCCUPANCY RATE : 2001-2002 to 2006-2007

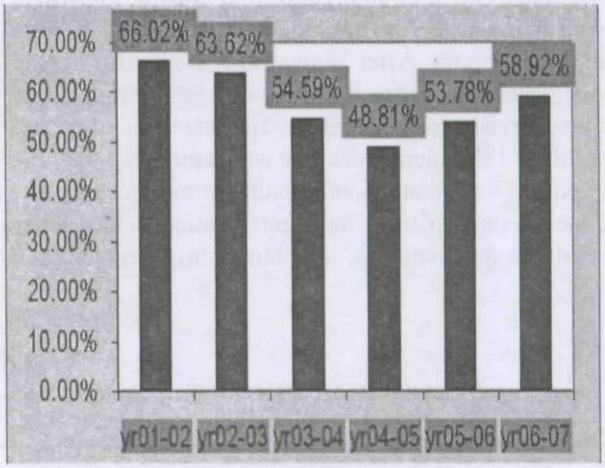
Time period	Maximum impatient days	Total impatient days	Bed occupancy rate (%)
2001-02	12581	8306	66.02
2002-03	21479	13667	63.62
2003-04	26623	14535	54.59
2004-05	34681	16927	48.81
2005-06	37266	20044	53.78
2006-07	37960	22367	58.92

The decreasing trend in occupancy rate seen in the graph from fiscal year 2001-05 could be justified in terms of various macro environmental factors; however same reason appears as justification of renovation for increasing trend from fiscal year 2005-07.

Pre- and Post- Renovation : Comparative Study of Resource Utilization

Bed occupancy rate (expressed in percentage)

FIGURE 2
BED OCCUPANCY RATE : 2001-2007

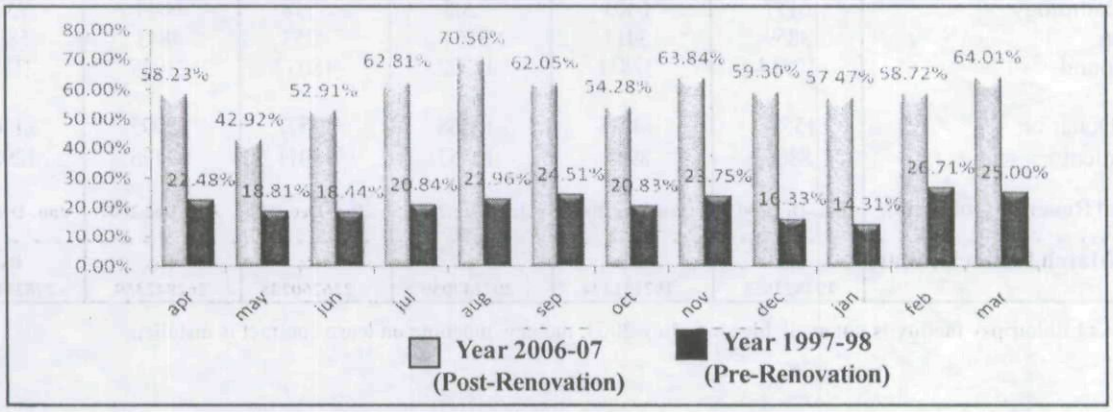


indicates the relationship between availability and utilization of hospital beds and facilities. Mathematically the formula can be expressed as:

$$\frac{\text{Total inpatient days}}{\text{Occupied inpatient days}} * 100$$

The bed occupancy rate shows tremendous increase from pre-renovation to post-renovation period. This could be observed through graphical representation, comparing fiscal year 1997-98 representing pre renovation period and fiscal year 2006-07 representing post-renovation period.

FIGURE 3
RESOURCE UTILISATION : PRE-AND POST-RENOVATION : SGPIMS



Besides renovation, system approach was adopted for the management of private wards. It demands that the management of an organization must be consistent with demands of organizational environment and the need of its members. After renovation, a specific person designated as Private Room In-charge was appointed for supervision of allotment and maintenance of private wards and allotment procedure was centralized, i.e., the allotment for private rooms relating to any specialty was done at a single place. Thus, centralization yielded better results in the context of maintained infrastructure and augmented utilization as compared with decentralization practices followed earlier.

However, renovation caused inevitable and heavy funds outgo. Though the monetary input was vast enough but it was essential in a manner to resort to reconstruction. So it was necessary for the management to know whether the decision of renovation was justifiable in economical terms also. Break-even analysis was found to be the best suited tool to study the financial suitability of renovation.

TABLE 3
STATISTICAL PROFILE OF SGPIMS: JANUARY 1, 2003 TO DECEMBER 31, 2008

	1st Jan. 2003 - 31st Dec. 2003	1st Jan. 2004 - 31st Dec. 2004	1st Jan. 2005 - 31st Dec. 2005	1st Jan. 2006 - 31st Dec. 2006	1st Jan. 2007 - 31st Dec. 2007	1st Jan. 2008 - 31st Dec. 2008
New Registration	37881	39290	43530	46566	52521	58894
Follow up Patients	120961	115790	132415	146355	168831	183687
Discharge	20421	22968	24337	25721	26518	27611
Bed Occupancy Rate	74.3%	63.2%	69.5%	68.0%	74.4%	76.1%
Surgery	6565	5891	6213	6296	7331	7680
Renal Transplant	105	116	97	113	115	115
Liver Transplant	02	02	NIL	3	1	0
Bone Marrow Transplant	02	04	04	4	1	0
Lithtripsy	376	122*	21*	326	295	125
Open Heart Surgery	346	366	433	519	474	478
M.R.I.	3583	4006	4664	5496	5984	6392
Hemodialysis	6643	7399	8342	10483	12555	16097
Peritonial Dialysis	507	431	417	354	156	57
Investigations	1220195	1177032	1277982	1426779	1587304	1658143
Endoscopic Procedures	8377	8531	8042	9452	10723	12588
Coronary Angiography	1657	1758	2004	2333	2396	2520
PTCA	680	786	922	1056	1081	1196
Histo-Pathology	6177	6403	7208	7718	9044	9506
CT Scan	3859	3411	3164	4253	4843	5889
Ultra Sound	10514	12831	14322	18037	21049	21358
Blood Donation	15521	14625	16768	17577	18995	21404
ERS Patients	8866	8945	10853	11011	12476	12985
Hospital Revenue Collection	**Jan.-Dec.2003**	**Jan.-Dec.2004**	**Jan.-Dec.2005**	**Jan.-Dec.2006**	**Jan.-Dec.2007**	**Jan.-Dec.2008**
(April-March Financial Year)	**Rs.**	**Rs.**	**Rs.**	**Rs.**	**Rs.**	**Rs.**
	194823855	192131474	207147959	226260238	262842359	278251815

Note : * As Lithiotripsy facility is not available since July 2004, the new machine on lease contract is installed.

Break-Even Analysis

The break-even analysis provides a dynamic view of the relationships between sales volume and profits. The break-even point is the point at which cost of expenses and income are equal, there is no net loss or gain and one has "Broken Even". For calculating the break- even point, mathematical relationships can be expressed as:

$$\text{Break-even point} = \frac{\text{Fixed cost}}{\text{Contribution ratio}}$$

where fixed costs are the costs that cannot be avoided and are essential for business. These remain fixed irrespective of the changes in volume. Fixed cost comprises cost of renovation and maintenance : the total fixed cost was found to be Rs. 23.60 million (as collected from records).

Contribution is the difference between selling price per unit and variable cost per unit. However, contribution ratio is defined as contribution divided by selling price.

$$\text{Contribution ratio} = \frac{\text{(Selling price - unit variable cost)}}{\text{Selling price}}$$

Selling price which is the price at which something is offered for sale. Selling price of private wards was Rs.1000 per room per day.

Variable cost may be defined as expenses which vary in direct proportion to the changes in volume. As per previous study, the variable cost was found to be:

Item	Per Bed (Rs.)
Stationery item	4.31
Electricity and water	61.15
CSSD	9.27
Laundry	5
Dietary	148.80
Medical gas	11.02

The variable cost was found to be: Rs.239.55 per bed per day.

Contribution ratio is calculated as-

(1000-239.55) / 1000 = 0.76

Break - even point in monetary terms is determined as-

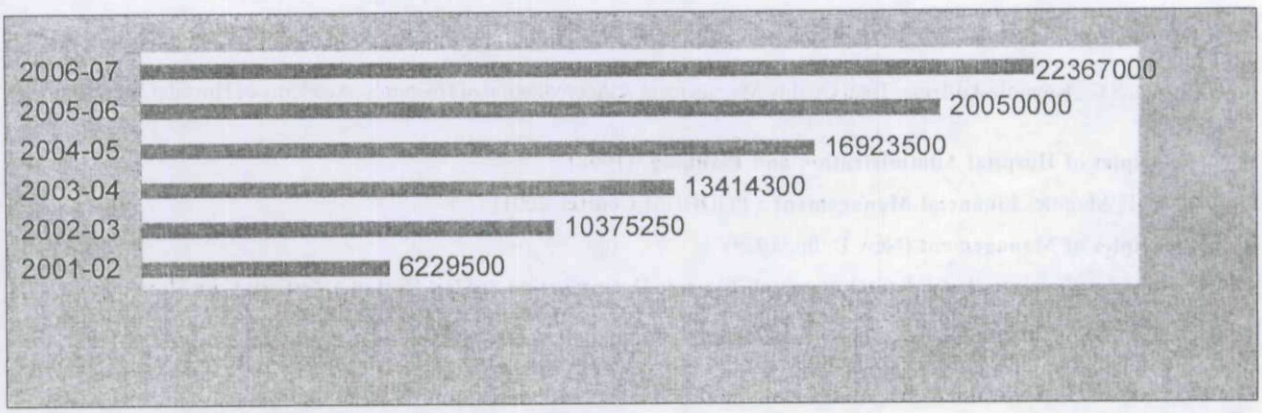
23.60 million/ 0.76 = Rs.31.05 million.

Thus, after recovering the revenue of above mentioned amount, break-even point was achieved.

Total Revenue Generated : 2001-2007

May 2001 was the period from when revenue began to be generated from the renovated wards. Total revenue was found to be Rs. 89.35 million generated from May 2001 to March 2007. The yearly revenue generated is shown in **Figure 4** representing the revenue generation for six consecutive years (after renovation).

FIGURE 4
REVENUE GENERATED FROM FISCAL YEAR 2001-2007 : SGPIMS



It is self-explanatory that there is an increasing trend in revenue generation. This could be explained by the enhanced room rate which was increased from Rs.750 to Rs.1000 till renovation was completed in 2003. As well as there has been a definite increase in number of bed complements and increasing inpatient days. Thus, the breakeven point in terms of revenue generation was achieved by the hospital in the fiscal year 2004-05 (by the month of April 2005).

Profit

Profit can be determined by the difference between revenue generated after break-even point and maintenance cost Revenue generated after breakeven point is determined by subtracting break-even point from total revenue generated which was found to be Rs. 58.31 million. Maintenance cost which is determined by multiplying variable cost with number of inpatient beds after break-even point was found to be Rs. 13.88 million. **Total profit was thus found to be Rs. 44.30 million.**

Patients' Feed Back

As the output of health care services are always calculated in cost effective terms, the feedback of patients is an effective tool to know the effectivity of facility in terms of patient satisfaction. One of the major indicators of service quality is the feedback received from patients. After so many years of renovation we tried to assess the effectivity of private room services. We tried to understand how patients felt regarding the quality of service rendered. Various aspects were considered which included dietary services (its quality, taste, and service of food), laundry services comprising frequency of change and quality of wash of linen; cleanliness and sanitation; air conditioning services; working of electric fixtures; civil fixtures; attending of complaints; behaviour and attitude of sanitation staff, ward boys, nurses and doctors; quality of nursing and medical care; handling and taking over of service; overall satisfaction; and suggestion. Although patients were satisfied with post-renovation services, there is ample scope for improvement in terms of staff behaviour, which could further add on to patient satisfaction

Conclusions

With this study in a tertiary-care hospital (SGPGIMS, Lucknow), we are bound to conclude that the quality of health care can't be assessed in terms of cost benefit alone. However, the study reveals that financial input in renovation has been beneficial as the organization has broken-even in terms of private ward facility and as a profit making wing. On cost effective analysis, we found it remarkable to see that thinking for redesigning of a process proved beneficial in achieving improvements in critical measures of performance.

A new approach of input in terms of renovation and reformed methodology in managing process of private wards was found to be output generating which yielded higher occupancy rate and increased patient satisfaction. Increase in utility of private wards proves that expenditure in restructuring the infrastructure could ultimately add to hospital efficiency, as today along with quality health services patients seek hospitable ambience and it has definitely become a major requirement of health industry.

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