

Original Research Article

To study the impact of design considerations on customer satisfaction in a dialysis facility of a super-specialty tertiary care hospital in Delhi, India

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ABSTRACT

Background: In recent times, patient focused hospital architecture is gaining attention. The current scenario demands to provide living spaces for families rather than ware houses for the sick. Attitudes, aspiration and values of the society must be clearly understood while planning a facility.

Methods: This prospective cross sectional observational study was carried out over a period of one year at the Dialysis unit of a tertiary care, super specialty hospital in North India with the objective to establish that minor structural changes can enhance customer delight which includes patients and their attendants of a chronic disease patient population visiting a health care facility and satisfaction of the staff of the facility. The tool used was a structured 5 point Likert scaled questionnaire including unstructured interviews. These were held with 200 patients availing treatment in the old and new dialysis unit each and who have at least had three dialysis treatments within 6 months in the both the units. Also, for staff satisfaction, 25 staff working for at least one month in the old unit and new unit each. Data was analysed using SPSS 17.0 software.

Results: Good design and quality of care were regarded important for patient experience. For patients, overall functioning and efficiency of the processes in the facility dependent on the design of the building was most important. Just over half of all surveyed patients felt that design impacted their relationship with their doctor and the quality of the care received. For attendants, waiting area including billing facility fetched the highest parameter for satisfaction. For staff the importance of access to support services, safety and provision of basic facilities resonated with the patient views presented above. Privacy, confidentiality and patient safety through careful design of waiting room, reception and consulting room were high staff priorities. Design that facilitated communication between team members also emerged as an important area although the change in design did not make much difference in emotional wellbeing and work life balance of the staff.

Conclusions: This study did not yield sufficient data to confirm or refute either concept, though clearly this merit further investigation. Some unexpected findings were reported. Specifically, the survey data rated privacy and the availability of comfortable physical conditions as the highest priority for both staff and patients.

Keywords: Customer delight, Design, Dialysis, Patient satisfaction, Staff satisfaction

INTRODUCTION

Health care facilities are among the most complex, costly and challenging buildings to design, construct and manage for its efficient working where patient is the focus of all

activities, their needs coupled with those of visitors and staff. Research has proved that well designed hospital environment can have a substantial impact on patient recovery and welfare.¹ According to LH Sullwai, "A building being an embodiment of life should be

conceived as the sum of all material, spiritual, intellectual and emotional activities within the building."² Much of the hospital architectural strength comes from the intense regards for the need of patients, staff and visitors. A hospital is not a factory in which the assembly line dictates all aspects of design but is a community in which the patient is fundamental to the successful working of the whole setup.³ In any modern hospital, a dialysis unit is an important and indispensable area of care because of the high incidence of kidney diseases due to lifestyle changes in today's modern world. It not only requires extraordinary attention in constructing, equipping, staffing but also requires round the clock availability of high calibre, highly trained technical and clinical manpower to run it, taking care of aseptic precautions as patients under dialysis are immunocompromised.⁴

In India, there is a rising burden of chronic diseases like hypertension and diabetes. The increase in number of Chronic Kidney Disease (CKD) patients can be partially attributed to the epidemic of chronic diseases and the aging population. In an analysis by Agarwal, only 3-5% of all patients with End Stage Renal Disease (ESRD) in India receive some form of RRT (Renal Replacement Therapy).⁵ The density of Nephrologist and hemodialysis units in India as compared to various countries (Table 1).⁶

Table 1: Density of nephrologists and haemodialysis units across the world.

Nephrologists	Per million
Indonesia	0.2
India	0.7
Singapore	9
United States	23
Hemodialysis units	
India	0.4
Japan	20

There was an urgent need to upgrade the existing dialysis unit in a tertiary care hospital of the National Capital. To achieve this, an in-depth analysis of the existing dialysis unit at our hospital was performed and thereafter suitable measures were instituted to plan a new dialysis unit with increased patient handling capacity which was commensurate with increasing logistics with respect to practice of aseptic techniques and engineering controls.

METHODS

This prospective study with a cross sectional observational design was undertaken with the objective to establish that minor structural changes are responsible for enhancing customer delight and satisfaction of chronic disease patients visiting a health care facility along with the satisfaction of the staff over a period of one year at the Dialysis unit of a tertiary care, super speciality trust hospital in North India with more than 600 beds. In the initial 3 months as a prelude to the study, a general

survey was carried out to know the organization, functions and layout of the unit. The existing facilities at the main building were noted and in discussion with head of the unit, other physicians, technicians, nurses as well as with hospital engineers and administrators, the new facility was planned for at the new location in the same hospital premises.

The study instrument to measure patient and staff satisfaction was a structured 5 point Likert scaled questionnaire which was developed after extensive review of literature regarding satisfaction levels. A pilot study was conducted with the Clinicians and staff of the department of nephrology. The views were incorporated in the questionnaire. The patient satisfaction questionnaire had 4 Sections having a total of 33 questions and an open-ended question about the experience of the customers, if any.

These questions were based on parameters such as experience of the patients and their attendants accompanying their dear ones undergoing dialysis at least 8 to 12 hours per week, location in relation to the overall design of the hospital, the time taken for overall dialysis from admission till discharge, waiting areas in particular reference to the attendants, procedural parameters and their acceptance with the patient community of a chronically ill disease type.

The Staff Satisfaction survey consisted of 20 questions about the working environment of the unit as a whole, processes at the unit including work culture, division of labour, relation with superiors, work-life balance. The study instrument was further refined by a group of domain experts. The same questionnaire was applied to the study population in the old and the new unit.

Simple random non-purposive sampling was done for patients who have undergone dialysis at least 3 times in the past 6 months of the study and Staff working in the Dialysis unit for at least one month each in the old and the new dialysis unit. A total of 400 patients were administered the questionnaire, 200 patients availing treatment in the old Dialysis unit and 200 patients who had undergone at least three dialysis treatments after a gap of 6 months after commencement of the new unit.

The questionnaire was administered during all the three shifts to compare the facilities and processes during peak and lean hours, elective or emergency dialysis. Care was taken that the questionnaire was filled in the same visit to the hospital. 25 staff working for at least for one month duration in the old unit and for 6 months in the new unit were enrolled in the study.

The survey was carried out over a period of 1 month in the old unit and after about 6 months of shifting in the new unit as the patients coming to the unit could relate to and document the difference in opinion with confidence. Structured interviews were held to find out the patients

outlook to the condition and facilities in the unit. Patients undergoing dialysis in other parts of the hospital like intensive care units, the clinical condition and stage of the disease were excluded.

Formal interviews were held with various functionaries of the department to determine the present staffing of the unit, the various activities of the unit as well as programmes run by it, its work load, the adequacy of physical facilities, equipment and layout of the unit, spacing and its setting vis-a-vis affiliated departments and services. In the final result, the parameters of none, agree and strongly agree are taken collectively as a positive result and disagree and strongly disagree as negative result.

Based on the above observations and their results, consensus was arrived with regards the adequacy of the services, plan and design of the unit and the organization following it. The survey responses were entered into an Excel spreadsheet and descriptive statistics were analysed using SPSS 17.0 software. Continuous variables are presented as mean±SD. Categorical variables are expressed as frequencies and percentages. Nominal

categorical data between the groups were compared using Chi-squared test. P<0.05 was considered statistically significant.

RESULTS

In this three-decade old building, it was imperative that the area to be renovated should accommodate the increasing work load and provide basic facilities to its customers, whether external or internal. During the phase 3 renovation of the hospital, the dialysis unit was given preference as it is a day care area with high bed occupancy and a short average length of stay. In addition, the concept of customer delight has gained more attention recently, mainly in the private hospitals and the art of designing a building is redesigned as the view of the end user is also being considered. Visiting a hospital twice or thrice a week is very time consuming, challenging both mentally as well as physically both for the patients and the accompanying person. So, ideally the hospital should be able to provide enhanced experience to the patient in terms of reduced hospital time and a comfortable area with basic necessities. So, that each visit to the hospital is not considered a burden.

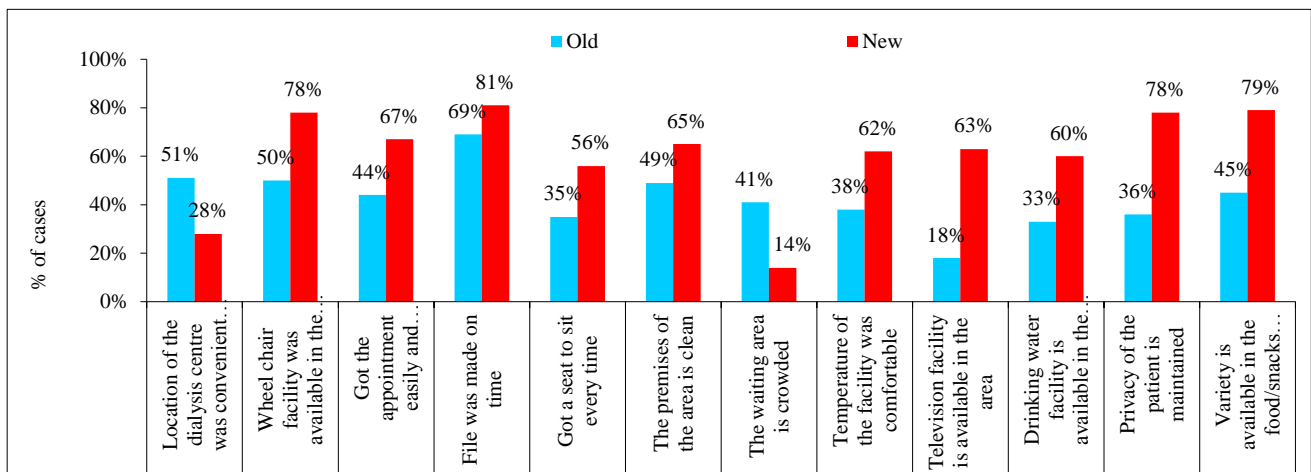


Figure 1: Patient satisfaction: comparison before and after the functioning of the new facility.

Based on available space, maximum numbers of beds were accommodated rather than judging the future expected patient load. This far sightedness of the nephrology team and the administration, lead to increase in the bed strength by 200%, a decrease in the incidence of postponed appointments, late night dialysis and overtime of the staff. No significance difference in satisfaction was noted in the parameter's common to the services provided in the hospital like presence of signage's, ease of parking, behaviour of security guards. Whereas presence of signage's were a cause of satisfaction, distance of the unit to parking was noted as a

major cause of dissatisfaction amongst the patients. Creation of a dedicated area to park wheel chairs in the new unit and being able to get appointment as per the choice of schedule due to increase in the number of beds was a reason for enhanced satisfaction (Figure 1). Whatever cancellation occurred, were due to either patient requirement or his clinical condition and not due to deficient hospital services. With increase in patient load, in order to make the admission and discharge process swift, billing was initiated in the unit itself with recruitment of additional staff. This led to prompt documentation.

Table 2: Difference in terms of a few parameters physical facilities, manpower, equipment, policies and procedures in the new and the old dialysis unit.

Area	Old unit	New unit
Physical facilities		
Total number of beds	16	28
Average total number of patients/ day	50-55	100-110
No. of appointments cancelled each day	8 to 10	Nil to 1
Waiting area for attendants common with the lobby	Available: 300 sq. ft.	Available: 340 sq. ft.
Waiting area for patients	Available: 80 sq. ft.	Available: 120 sq. ft.
Administrative area	Not available	Conference room
		Head of the dept. Office
		Director, dialysis unit office
		Transcriptionist area along with toilet and pantry for the doctors and staff total area of 500 sq. Ft.
Conference room	Available: 185 sq. ft.	Included in the administrative area
Hemodialysis area for negative patients	Available: One area: 1163 sq. ft.	Two nightingale type wards: 1000 sq. ft. Each
	Available: Other area: 271 sq. ft.	
No. of beds in negative unit	8 beds and 4 beds, total 12 beds	12 beds and 11 beds, total 23 beds
Isolation room	Available, 271 sq. ft.	Available,450 sq. ft.
No. of beds in positive unit	4	5
Change room	Available: Common with pantry	Separate for male and female staff 10 sq. ft each
Pantry		Available separately, 8 sq. Ft.
Dry storage room	Available: Common 180 sq. ft.	Available: 85 sq. ft.
Dialyzer reprocessing room	Available: Common with the storage room 190 sq ft.	Separate for positive and negative patients
Dialyzer storage room	Common for positive and negative patients	Separate for positive and negative patients
Sterile set room	Not available separately	Available separately with covered storage cabinets
Toilet for doctors	Not available	Available, common for doctors and staff
Toilet for staff	Not available	
Toilet for patients	Available	Available, separate for males and females
Toilet for attendants	Not available	Available, separate for males and females
Procedure room	Main OT complex in the adjacent building is used for making AV fistula	Available in the new unit itself, 320 sq. ft. with a scrub station and change room along with anesthesia trolley for making AV fistula
Recovery room	Not available	Available with 5 recliner beds
Doctors duty room	Not available	Available
Peritoneal dialysis area	Not available	Available
Plumbing	Plastic pipes for dialysis effluent	uPVC pipes used
Air Conditioning and ventilation	Window Air-conditioners in dialysis area No air-conditioning in the waiting areas	Centralized air conditioning available throughout the unit
Flooring	Tiles used	Ward area: Poly Vinyl flooring
		All other areas: Mosaic flooring
Walls	No dadoing on the walls	Dadoing on walls present
Fire fighting	Fire exit absent	Fire exit present
	Fire door absent	Fire door present
Recreation and entertainment	Not available	LCD TV with cable facility
Environment	Readily accessible from the main entrance of the hospital	Not readily accessible from the entrance of the hospital
	Not cordoned off from the corridor, common passage for the ward nearby	Cordoned off from the attendant waiting area
Safety	One entry and exit (common)	Entry and exit are separate for the unit
Security	No security staff is available	Two tier security system is provided
	Access control is not possible	Access control is possible
Patient movement	Width of the corridor is 1.5 m	Width of the corridor is 2.0 m
Renal ward	Renal HDU not separately available	Renal high dependency ward is located adjacent to the

		unit
Waste disposal	No separate corridor for transport of waste	A separate exit for the waste transport is available
Disposal of Dialyzers	Given to the waste management agency as such	Crushed in house and given to the waste management agency
Sanitation	No toilet facility for the staff as well as attendants	Separate toilet facility for the staff, patients as well as attendants
Signage	Extensive signage is not provided	Extensive signage is provided
Zoning	Lies in the outer zone of the hospital (immediately accessible) to the public	Inner zone of the hospital (not readily accessible) to the public
Functionality		
Services	Relationship with old dialysis unit	Relationship with the new dialysis unit
Parking	2	4
Housekeeping	3	3
Maintenance	4	4
Dietary	3	1
CSSD	X	3
Operation theatre	X	3
High dependency unit	3	1
Laboratory	3	3
Manpower		
Director, dialysis unit	Not dedicated	Dedicated for the unit
Residents		
Senior	9	9
Dialysis Medical Officer	1	4
Technicians		
Patient: Technician ratio	5:01	5:01
Senior Technical Officer	1	1
Technical Assistants	3	6
Dialysis Technicians	7	16
Nurses		
Patient: nurse ratio	4:01	6:01
Sister In-charge	1	1
Staff Nurses	15	18
Housekeeping staff		
Patient: Housekeeping staff	9:01	9:01
Nursing orderly	6	14
Sweepers	4	8
Overall responsibility	Head of the Department, Department of Nephrology	Senior consultant, appointed as Director dialysis unit
Duty medical officer	Posted only for general shift	Posted round the clock
Receptionist	Available: 1	
Medical transcriptionist	Not available	Available: 2
Equipment		
Total dialysis machines	16	28
Negative unit	12	23
Positive unit	4	5
Dialysis machines:		
Urea kinetic modelling system	Not available	Available
Sodium variability	Not available	Available
Use of Bi-carts	Not available	Available
UV filters	Not available	Available
Monitors	Not available	Available separately with each machine
Reverse osmosis (RO) system	Properly maintained with pre-treated water	Is a single pass reverse osmosis unit system which is a dynamic water saving device.
Water storage tank	Stainless steel	Poly vinyl chloride
Water distribution system	Piping made of PVC (poly vinyl chloride)	Piping made of PEX (cross-linked polyethylene system)
Dialyzer reprocessing system	1	2
Medical Gas pipeline	Only wall mounted oxygen supply is available with each bed	Wall mounted bed panel contains supply for oxygen, vacuum, air and inlet and outlet drainage for the dialysis

		machines
Crash cart	Not dedicated to the unit, has to be shared with the nearby nursing station	Dedicated for the unit
Policies and procedures		
Administrative meeting of dialysis staff	Not done	Done, every Wednesday
Billing	Done in the main cash counter	Done in the dialysis unit reception

Two satisfaction parameters have been very important with respect to the attendants. First, duration spent within the hospital and secondly, the facilities for them. Thereafter, stress was laid down to provide the attendants with basic facilities such as proper waiting area, cold/ hot water and washroom facilities (separate for males and females), air-conditioning, provision for reading material, television with cable connection, so that people can spend their time in a comfortable manner. There was a significant increase in the satisfaction level of external customers with an exception to Wi-Fi which was nonfunctional during the study period, leading to dissatisfaction up to the level of 80%.

Interiors of the new unit were revamped with dadoing on the walls, easy to maintain vinyl flooring; wall embedded plumbing installation, manifold facilities, etc. Minimum interbed distance of 4 feet and presence of curtain track has given a sense of privacy to the patients. Nevertheless, it is yet not comparable to ultra-modern dialysis units where the units are recliner type with an in-built television system.

The provision of minor operation theatre with proper zoning (clean and protective zone with hand washing facilities) and a post procedure recovery room as in the main OT complex was planned in the unit itself with the aim to reduce the staff workload as well as ease the effort required for shifting patients. This has helped reduce the waiting time and increase turnover.

The study was conducted at different times of the day like peak and lean hours, but it was noticed that the discomfort/ satisfaction level remained the same and so, the working and non-working hours did not make a difference to these basic facilities.

The patient / attendant/ administration/ staff waiting areas have been separately defined in the new unit. The predefined hemodialysis ward was again separated into areas for positive (with blood transmissible infections) and negative patients. The staff areas have been segregated into auxiliary and ancillary support areas and wherever required segregation into male and female areas has been provided.

Provision of dedicated support areas for equipments like dialyzer reprocessing machine, reuse dialyzers, sterile sets, sterile linen, stationery, fluids and other items are in sharp contrast to the old unit where these stores were

squeezed into one area. This division of work areas helped smoothen the process flow and impart accountability to the staff.

The newly created CAPD room is located in such a manner that the CAPD patients are not interfered by the routine hemodialysis patients. Subsequently, a reduction in the CAPD waiting time to nil has been achieved.

Engineering services like electrical supply (main and UPS), communication, etc. are the same as in old unit. The difference only lies in the provision of proper design, civil work including paints, lightening with increased use of natural light, centralized air-conditioning and water supply system for the hemodialysis machines, availability of manifold points for patient safety and curtains, increased space per bed for (Table 2). The aseptic precautions like cleaning and disinfection, infection control surveillance policies their methodology for monitoring remain same but in Human resource management, designations of a Director and a Medical administrator for the unit has been created.

More technical staff as compared to nursing staff was recruited in the new unit when the option of increase in staff was being considered. So, there was an overall decrease in the patient technical staff ratio and increase in the patient nursing staff ratio which led to increase in satisfaction at staff level also.

The new unit is manned by a dedicated, post graduate resident doctor (posted on rotation basis) for 24 x 7 days in comparison to 12 hours shifts in the old unit where in the night, the unit was managed by senior residents on call of the nephrology department. However, daily management of the cases is strictly in the hands of the consultants in the unit.

Recently patient focused hospital architecture is gaining attention to provide living spaces for families rather than warehouses for the sick. Attitudes, aspiration and values of the society must be clearly understood and imbedded during planning.

The same has been proved in the patient and staff satisfaction survey conducted in the pre-and post the new dialysis unit (Figure 2). On the basis of which, recommendations were given among which, recommendations regarding equipment, provision of billing facility and HVAC have been implemented.

Recommendations regarding piped music, Wi-Fi facility and separate rooms for staff were taken into consideration whereas recommendations regarding staffing, provision

of full time dietician, medical social worker, laboratory were not considered. Suggestion of initiating of a home dialysis programme is yet under consideration.

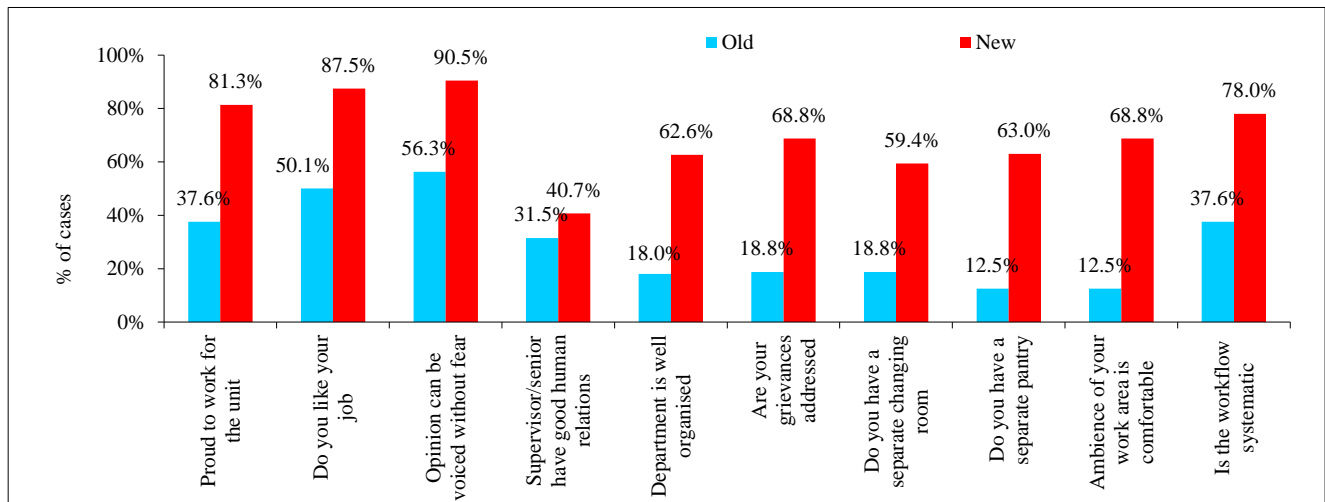


Figure 2: Staff satisfaction: comparison before and after the functioning of the new facility.

This study did not yield sufficient data to confirm or refute either concept, though clearly this merit further investigation. Some unexpected findings were reported. Findings from both the survey and the qualitative analysis suggest that staff place more value on virtually all aspects of design than patients. Qualitative data suggest that whilst the dominant patient view acknowledges the importance of the built environment, this should not be at the expense of efficiencies in healthcare delivery such as waiting times, staff training and so on.

DISCUSSION

For planning and organising of dialysis unit, international and national guidelines have been given. As per the guidelines of Department of Veterans Affairs, Washington D.C., which is a Health Services Research and Development Service provider and provides expertise in health services, the number of beds in the dialysis unit varies with the patient load, type of equipment and objective of the programme.⁷ These guidelines are applicable for both acute and chronic ESRD patients as for the Department of Public Health, Connecticut.⁸ The Indian Society of Nephrology (ISN) has published guidelines in December, 2012 which describes a level of facilities and guidelines that should be achievable in almost all situations in dialysis unit.⁹

Physical facilities

The new unit was to be located on the second floor where all nephrology services (Out Patient Department, renal high dependency unit, renal ward) are located to ensure

ease of flow in contrast to the recommended ground floor near the fringe of the main unit, making the location inconvenient for the patient as it is away from the main hospital entry and parking.

As opposed to a shared reception area and waiting areas a separate reception and waiting area were created as there was no further need for public dealing in the vicinity of the dialysis unit. Adequate space in the corridors enabled easy trolley parking and movement.

Recreational facilities (television, magazines, etc) and basic facilities like drinking water and hand washing facilities have been provided. The administrative areas such as doctor's offices, duty room, conference room, transcriptionist area have been provided in the new unit which were not available in the old unit.

The bed strength has increased from 16 to 28 beds resulting in ease in managing appointments as also shown by the increased patient satisfaction. Separate patient treatment areas for positive and negative patients have been provided. Entry of the positive unit is from inside the unit where an outer vestibule with hand wash facility could have been created for positive room which was not done due to paucity of space.

The bed side panels have been designed as per the guidelines with facility of drainage, vacuum, oxygen supply and nurse call bell in the new unit which was lacking in the old dialysis unit. Separate changing room, pantry, toilet facility for staff, patients and attendants have been provided.

A dedicated procedure room, dry and wet storage room has been provided in view of infection control practices. Separate wet storage for positive and negative patients has been provided as aseptic precautions have to be strictly adhered to. Separate areas have been provided for sterile sets and consumables.

Other design considerations

In the new unit, easy to wash, maintain and aesthetic vinyl flooring and dadoing of the walls have been done. Central heating, ventilation and air conditioning have been installed to maintain adequate temperature and humidity. Separate wall hanging fans and fluorescent lamps add to the comfort level of the patient.

All the parameters for fire safety like CO₂ cylinders, heat and smoke detectors, sprinklers, fire exit doors along with directional fire signage's have been provided in the new unit whereas the electric and water supply remains same. The safety, security, zoning, signage's have been adequately provided. For plumbing, unplasticized poly vinyl has been used as it is superior to poly vinyl chloride in terms of rigidity, durability, fire and heat resistance as heat clean method is being used for disinfection.

The flow of activities in the new unit has become streamlined due to appropriate location of the various areas inside the unit. The waste disposal, sanitation, housekeeping and maintenance services are provided as per the hospital policies and procedures.

Based on studies conducted by Carpmann Grand Associates, Environment Design consultant, hospital patients and visitors share the basic design related needs such as symbolic meaning encompasses the array of non-verbal messages embodied in design e.g. crowded waiting spaces and inefficient house-keeping are negative symbolic's for patients and visitors.⁵ Landscaping should be planned with indoor - outdoor continuity principle.⁹

Manpower

All the categories of healthcare personnel have been provided. Adequate round the clock coverage is provided by the doctors in the form of dialysis medical officers, and senior residents/ registrars along with on call cover by the consultants to help manage any complications while maintaining departmental hierarchy.

The well-defined job responsibilities of the technical and nursing staff account for smooth uninterrupted flow of activities in the unit. In the new unit, the ratio of patient: nurse is 6:1 and ratio of patient: technician is 5:1. The number of housekeeping staff dedicated is also more in the new unit to reduce the inconvenience caused to the patients and attendants because of the location of unit. A medical social worker and dietician have not been appointed contrary to the guidelines as this work is taken over by the dialysis medical officers and nursing staff.

Equipment

The reverse osmosis plant and water storage facility with the capacity as per the number of dialysis machine has been fabricated with medical grade PVC with the water distribution system made of cross linked poly ethylene system (PEX) having clearer connections and smoother internal walls. Use of bi-carts and UV filters in reverse osmosis system has increase patient safety. The number of dialysis machines have increased in the new unit with improved technology in view of the increased patient load, patient safety, monitoring and cleaning by the staff.

Aseptic precautions

Aseptic precautions being used in the new unit are same as were in the old unit. Monitoring of the chemical, microbiological and endotoxin testing is strictly performed.

Policies and procedures

The scope of the department remains same as in the old unit, but the unit is now giving treatment to economically weaker sections of the society also. The reuse of the dialyzer is only done for negative patients as in the old unit. Weekly departmental meetings by the Director Dialysis unit have expedited the grievance handling mechanism.

The dialyzers are discarded by crushing them at the facility site which is in accordance with the waste management policy of the hospital. All records and registers are maintained for five years as per the hospital policy. Initiative has been taken up in new unit that billing is being done in the dialysis unit itself to make it convenient for the patient and their attendants.

Patient and staff satisfaction survey

Staff and patients consider the built environment of the unit as an important mediator of quality of healthcare delivery. Universal access, simple way finding, safety, privacy and confidentiality rank uppermost for both staff and patients. Lighting, zoning, comfortable temperatures and welcoming interiors, privacy and entertainment are also valued by both groups.

Patients and staff recognise the effect of the environment on the doctor-patient relationship and value design which supports and enhances this. The environment is regarded as influencing staff motivation, job satisfaction by the majority of staff, and some patients but minimal effect on behaviour of the staff.¹⁰

There appears to be an emerging tension in terms of the prioritisation of the built environment in terms of its position in the overall scheme of healthcare provision, with staff appearing to value it more than patients. This needs to be further evaluated as does the low

prioritisation given by both groups to the place of processes undertaken in the unit. The limitation of the study is direct involvement in the project planning phase.

CONCLUSION

Haemodialysis is the commonest form of substitution therapy for end stage renal disease patients. As the burden of chronic kidney disease including ESRD is increasing, substantial gap in the demand and the supply of the facility needs to be overcome. Keeping in view that the end stage renal disease is a disease with which the patients and their families have to live over a long period of time, human aspects have to be addressed which is important for the improved quality of life of the patients. Therefore, it is the responsibility of the hospital to provide their patients and visitors with proper ambience and basic facilities along with the clinical, physical, psychological and rehabilitative care, so that they do not feel demoralized. These aspects have been appropriately addressed and incorporated in the planning of the new unit as is evident from the results of the satisfaction survey.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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