

**Summer Training at
Fresenius Medical Care India Pvt. Ltd.
New Delhi
(May 2-July 2, 2012)**

**Hygienic Conditions & Recreation Activity provided to
Patients at the time of Dialysis Therapy**

**By
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**Under the guidance of
Mr. Vijay Pratap Raghuvanshi**

**Post Graduate Diploma in Pharmaceutical Management
2011-2013**



**Institute of Health Management Research,
Jaipur
2012**

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Certificate

This is to certify that Siddharth Tyagi has undergone summer training in Fresenius Medical Care Pvt. Ltd., Ludhiana, Punjab from 2nd May to 2nd July, 2012

The candidate carried out all the studies related to summer training himself. His approach to the studies has been sincere, scientific, and analytical. This summer training in partial fulfillment of the course requirement is recommended for the award of Post Graduate Diploma in Pharmaceutical Management.

I wish him success in all future endeavors.



Dr .P. R.Sodani

(Dean Academics and student affairs)



Prof. V.P. Raghuvanshi

(Assistant Professor)



July 2, 2012

SUMMER TRAINING CERTIFICATE

*This is to certify that **Mr. Siddharth Tyagi**, pursuing **M.B.A.** from **Institute of Health Management Research** has successfully completed his Summer Training from Fresenius Medical Care India Pvt. Ltd.*

*His Summer Training project was focused on '**Hygienic Conditions & Recreation Activity Provided To Patients At The Time Of Dialysis Therapy**' under the guidance of **Mr. Bharat Kaushik**. The period of his summer training was from **May 2, 2012 to July 2, 2012**.*

The work was a part of an on-going project and was confidential in nature and cannot be shared with the institute.

*We wish **Mr. Siddharth** success in all his future endeavours.*

Warm Regards,

For Fresenius Medical Care India Pvt Ltd, New Delhi

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Acknowledgement

“It is important that students bring a certain ragamuffin, barefoot irreverence to their studies; they are not here to worship what is known, but to question it.”

(~Jacob Bronowski)

It was great learning opportunity for me to work with one of the leading MNC in dialysis sector Fresenius Medical Care Pvt. Ltd.

Throughout this 60 days project, I came to learn many insights related to dialysis machinery, equipments and most important the hygiene factor in dialysis.

I would like to thanks the whole Market Analytics Team (MAT) that includes Mr. Gaurav Malhotra, Dr. Rakesh Thakur, Mr. Mayank Sharma and Dr. Bharat Kaushik who were always there to guide me whenever I was having any problem related to field or survey form or anything wherever I was unable to find my way-out. I also want to thanks Dr. Atul Dixit who had given us the whole basic knowledge of dialysis and FMC products which were very helpful for us during our field visit. At last but not the least my heartily thanks to all of the FMC people specially to MAT group to give me this great opportunity to work with you.

This acknowledgement would have been incomplete if I did not mention the name of my mentor, Mr V.P.Raghuvanshi (Assistant Professor, IIHMR, Jaipur)

I tried my level best in making this project useful and hope that it will be up to the expectations of everyone mentioned.

1. INTRODUCTION

Dialysis is a procedure that replaces the normal functions of the kidney by removing metabolic waste products through diffusion and hydraulic pressure gradients. Use of an artificial semi permeable membrane (hemodialyzer) or a natural semi permeable membrane (peritoneum) allows passage of some molecules while passage of other molecules is restricted. Molecules that can move through membrane move from the area of higher concentration to the area of lower concentration. The dialysate is a combination of treated water and electrolyte concentrates used with the dialysis machine and system. Dialysis is hazardous for the patient and for the staff that take care of the patient.

Dialysis treatment is accomplished by two primary mechanisms, hemodialysis (HD) and peritoneal dialysis (PD). HD utilizes an artificial dialyzer for removal of metabolic waste products and PD uses the patient's peritoneal cavity and membranes.

Dialysis can be hazardous for the patient as venous access and insertion of foreign bodies can increase risk of infection. Also the patient might be exposed to exogenous microorganisms or to endotoxin from contaminants in the water used to prepare dialysis. Personnel that care for the patient are at risk of occupational exposure to blood-borne pathogens as patients requiring dialysis can have a high prevalence of blood-borne diseases.

Dialysis is used as a life sustaining treatment for patients with renal failure.

Patients undergoing dialysis are already at risk of certain types of infections resulting from underlying diseases or conditions such as:

- Diabetes
- Hypertension
- Cardiovascular disease
- Immunosuppressive therapy
- Other critical diseases

Furthermore, dialysis increases the patient's risk of infection because direct access into normally sterile areas, including the circulatory system or peritoneal cavity, is required.

Infection can be caused by contamination occurring at various steps in the dialysis procedure or because of intrinsic contamination of any of the components of the dialysis system.

Most common types of dialysis-associated infections include:

- Access site infections
- Bacteraemia
- Peritonitis
- Pyrogenic reactions
- Infections with blood-borne pathogens

1.1 WHAT OF PROJECT

There are around 2.1 billion people are effected from the chronic failure disease and they are on dialysis worldwide. And the previous research study says that the patient who had developed this disease and if they are on dialysis then there life will be last for only maximum 4-5 years in India. If the patient will be on regular interval of dialysis then also there life span is not more than 4-5 years. This happens because most of the hospital does not maintain the basic hygiene criteria in there dialysis unit, because of which any new microorganism born which effects the life span of patient very seriously. It is been seen that the hygienicity of the dialysis centres somehow increases the life of the patient who comes for a dialysis treatment.

1.2 PURPOSE OF PROJECT

This project is initiated to measure that did the dialysis centre in the assigned area maintain the basic criteria of hygiene factor in there dialysis room and did the technician who are operating the patient are well qualified to do dialysis of patient and also to measure the quality of dialysis providing by any hospital or private clinic. The project mainly contains the questions which were either to be asked to the technician or the doctors or to be observed by the individual in the dialysis centers about the hygiene related issues.

2. ORGANIZATION PROFILE

“Creating a future worth living. For people. Worldwide. Every Day.”- FMC

Fresenius Medical Care is a German company specializing in the production of medical supplies, primarily to facilitate or aid renal dialysis. It is one of most world leading MNC company who is serving in dialysis sector since last three decades. It was formed in 1462 by Fresenius Family. In 1966 Fresenius starts to sell dialysis machines and dialyzers manufactured by various foreign companies and gains substantial market shares. Then in 1974 Fresenius starts to manufacture infusion solutions and medical disposables in St. Wendell, Saarland. Today, Fresenius produces highly innovative Polysulfide dialyzers in St. Wendell. In 1983 Fresenius takes up production of synthetic polysulfone fibre membranes for blood purification. These membranes today set the quality standards for dialyzers. Finally in 1996 Fresenius Medical Care is founded. And today Fresenius Medical Care is the world's largest provider of dialysis products and dialysis services for individuals with chronic kidney failure. It is 36% owned by the health care company, having network of 2,757 dialysis clinics in North America, Europe, Latin America, Asia-Pacific and Africa, Fresenius Medical Care treats more than 2 lakhs dialysis patients around the world.

Fresenius Medical Care is the world's leading company devoted to patient-oriented renal therapy. Through over 2,700 clinics kidney dialysis clinics in North America, Europe, Latin America, Asia-Pacific and Africa, the company provides 32 million life-saving dialysis treatments to more than 215,000 patients worldwide. Fresenius Medical Care is also the world's pre-eminent provider of dialysis products such as haemodialysis machines, dialyzers and related disposable products. Chronic kidney failure is a condition that affects about 2 million individuals worldwide. Fresenius Medical Care's 2010 revenues exceeded \$12 billion.

Fresenius Medical Care in India have four offices that have total of 1112 partners. FMC in India had started in 1999 with its first office in Delhi, later in 2009 FMC opened its other two offices in Mumbai & Chennai, later this year in 2012 the company has opened its fourth office in Chennai.

Fresenius Medical Care is a 30,000 USD company at present. It is the 1st company to sell 1000 units in one single financial year (in 2010). FMC has the largest man power in Renal Health care segment.

Fresenius Medical Care has the total market share of 75 % (± 5%) & the nearest competitor have 18% share.

3. Objective:

To know the Hygienic Conditions & Recreation Activity provided to patients at the time of Dialysis Therapy.

4. Methodology and data

4.1 Research: - The research was descriptive in nature

4.2 Data Sources: Primary – Survey method was used for the collection of Data for the purpose of primary research.

4.3 Sampling Design:

Population: Dialysis patient

Sampling: Convenient sampling

Sample size: 72 Hospitals

List of Centres-

Include 72 dialysis centres of 17 cities and districts in Punjab & U.P.

Name of Locations	No. of Centers
Amritsar	15
Faridkot	3
Fatehgarh	1
Ferozpur	1
Gurdaspur	3
Hoshiarpur	6
Kapurthala	1
Ludhiana	17
Moga	2
Nawanshaher	4
Pathankot	3
Ropar	1
Tarn Taran	1
Meerut	12
Saharanpur	2

4.4 Contact method: Observational and Personal

4.5 Tool used for Data Collection:

Research Instrument – Designed questionnaire on the basis of extensive literature review.

4.6 Type of Questionnaire- Structured non-disguised.

Design of Questionnaire: Open ended

4.7 Tools used for Data Analysis: MS-Excel for compiling the data and for the preparations of graphs & pie-charts.

5. Questionnaire

DIALYSIS UNIT APPRAISAL



HOSPITAL NAME:

SURVYOR NAME:

DATE :

		1	2	3	4	5
PATIENT CARE						
Response time to patient's emergencies						
Check-ups at regular intervals during dialysis						
Behaviour of technician towards patients						
Qualified staff attending patients		☐ YES		☐ NO		
PATIENT COMFORT						
Patient's bed/chair						
Ambient noise level						
Quality of food for patient (if in case provided)						
Mode of recreation (if in case provided)	a.					
	b.					
	c.					
Remarks :						
Privacy for patients						
DIALYSIS UNIT ENVIRONMENT						
Safe disposal of clinical waste						
Hygiene						
Clinical dress for staff		☐ YES		☐ NO		
Footwear allowed inside the unit		☐ YES		☐ NO		
Isolated windows inside the unit		☐ YES		☐ NO		
Operates while gloves on		☐ YES		☐ NO		
Ambience						
Ventilation						
Power Back-Up facility		☐ YES		☐ NO		

6. Analysis, Interpretation & Result

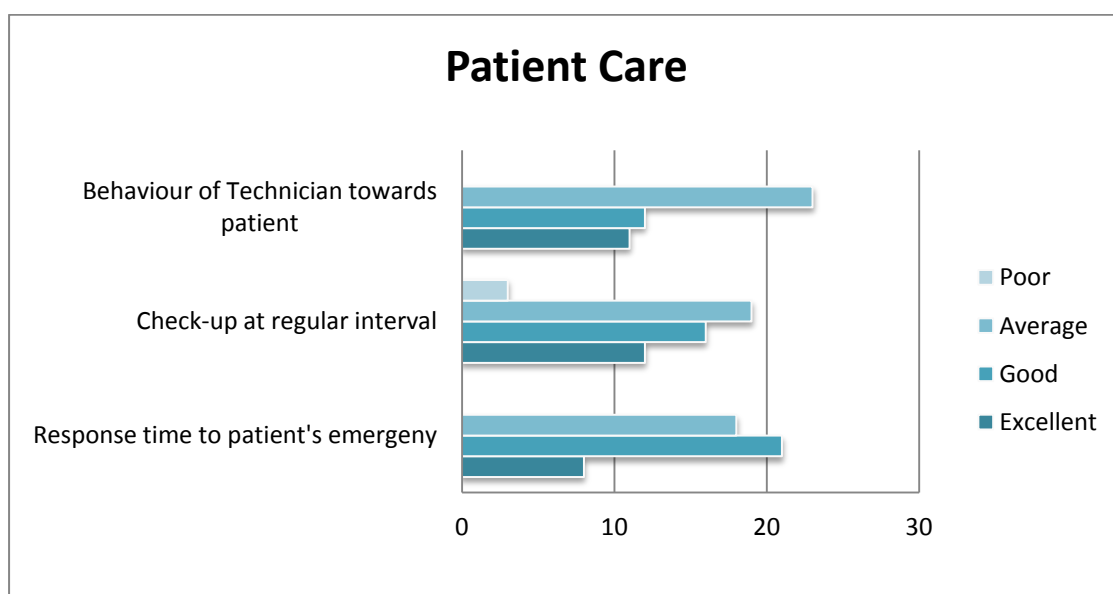
With the help of MS-excel we calculate the survey data and make the interpretation in this report. Also the final result by statistical analysis is given below.

As I had visited 72 hospitals allotted in 17 cities in Punjab & Western U.P. Out of 72 hospitals that were allotted, 12 hospitals had their dialysis unit closed, some had refused to give data and there were 5 hospitals where dialysis unit was open but they did not have any patient undergoing haemodialysis. So we are analysing the data of 51 hospitals. Out of these 72 hospitals most of them were private and very less were government hospitals.

Our questionnaire is divided into three subparts in which first part deals with the “*Patient care*” second deals with “*Patient comfort*” and third part with “*Dialysis unit environment*”, On the basis of these three headings we have analysed that how does the technician response towards the patient and do they maintain the hygienic condition in the dialysis unit or not.

A) Patient Care

With the help of observational study we had found out that how does the technician perform his role on the dialysis unit?



Interpretation:

1. Behaviour of technicians towards patients:

As from the above result we can easily find out that there were 11 hospitals where the behaviour of technicians was found to be excellent, technicians of 12 centres were showing good behaviour towards patients, behaviour of 23 patients was average towards the patients & technicians of 5 centres was having a bad attitude. As this figure show we that this is not satisfied because during dialysis the response of technician towards patient is very important as there may be any kind of in convenience to patient related to blood tubing, needle or anything else.

2. Check-up at regular intervals:

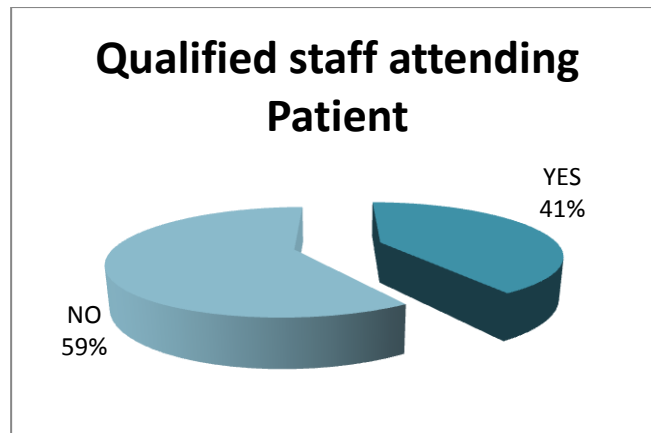
As on the base of above result we can see that out of all the centres, only at 12 centres patients were being regularly examined & checked, at 16 centres technicians were checking the patients for just one or two time & there were 3 centres where the either the technicians were out of the dialysis room or were not at all examining the patients. By analysing the above data we can say that there were not even half of the technician were attentive during the dialysis towards patient.

3. Response time to patient's emergency:

Here we can see the same result, technicians at 8 centres were timely responding to the patient emergency, response time of technicians of 21 centres was good & technicians at 18 centres were found to be giving an average response towards the patient's emergency situations. As this is not good for patient because only technicians are present in dialysis unit and it is painful to patient if the technician will not behave properly to patient.

4. Qualified staff for patient:

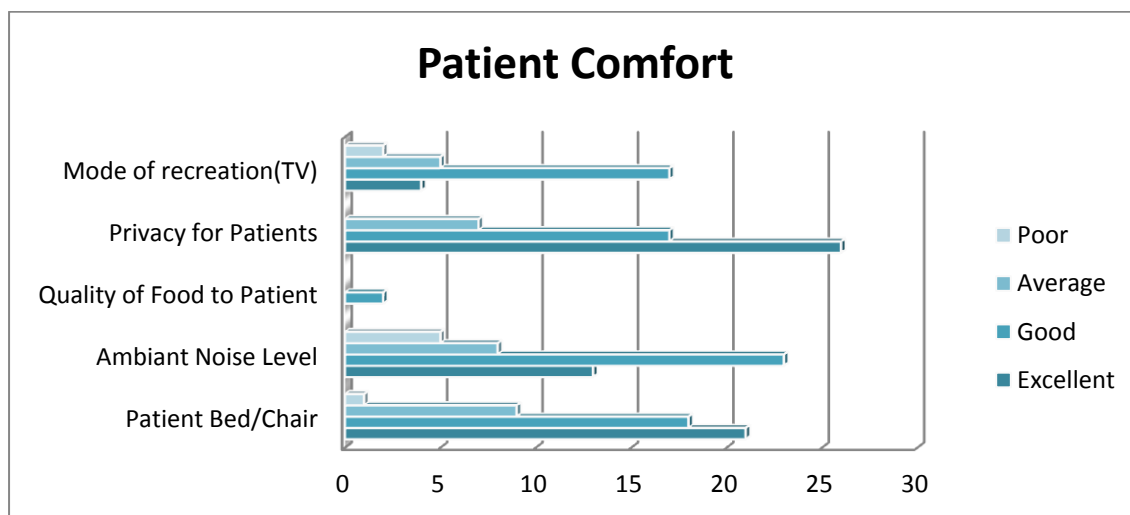
As by taking the technician qualification status we got result as-



Interpretation: Here we can see that there were only 59% of technician who were qualified for doing dialysis it mean that they had done sort of diploma course in dialysis or they had got 10-15 years experience in dialysis and there were 41% of technician who were not qualified to do dialysis means they had only completed their 12th or done B.A. /B.Sc and doing dialysis which is not good for patient.

B) Patient Comfort

As by the observation we had find out that weather the condition of the dialysis centres comfortable for the patient or not



Interpretation:

5. Patient Bed/Chair-

Here we can see that there is 21 centres were having comfortable beds for the patients, 18 centres were having good facility for patient beddings, 9 centres were having an average arrangement for patients' beds & 1 hospital was having poor patient bed quality. As the highest percentage is for the excellent level of beds for patients.

6. Ambient Noise Level:

While collecting the survey data we had find out the surrounding noise level of dialysis unit. 13 centres were having very low amount of noise entering in the dialysis room, 23 centres were found to be having low amount of noise level inside the centres, 8 centres were having an average amount of noise level inside the room & 5 centres very found to be effected by outside noise very much. As the highest percentage is of excellent level which is good because during dialysis the patient needs the silence in the unit & it's surrounding so that they feel relax but there are some negative site were the noise level was very bad.

7. Quality of Food for patients

It was found that after dialysis, food was provided only at two hospitals and the quality of food was also found good.

8. Mode of Recreation:

During the time of collecting the data, we have observed that in the form of recreation only TV was at the centres & out of 72 centres TV was installed at only 27 centres for the patients.

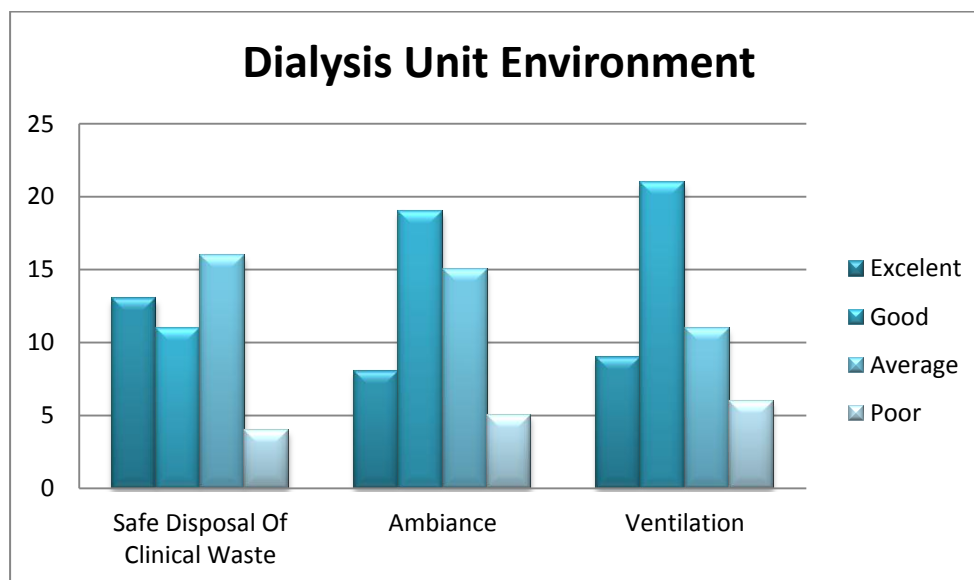
From this we can say that there were only 4 hospitals were providing the best quality of recreation to patient. Its means that the T.V which they had put was visible to all patients and the sound was not very high which it turn was not creating will any kind of difficulty to patient and in this 17 hospitals were good, 5 hospitals were providing average kind of viewing to the patient & 2 centres were having very poor situation, that means that the T.V which was there was either not in good condition or not be viewed by all the patient or they are using by the technician for their personal recreation.

9. Privacy for Patients:

By doing the observational survey we had seen the privacy of the patient while they were on dialysis. Here we can see that there were 26 hospitals where the patient were having full privacy in terms of distance from other beds & provided with cabin curtains ,17 centres were also having good facility for patients whereas 7 centres were found to be average in terms of providing privacy to the patients. Privacy for a patient does matter a lot because while dialysis patient were expected to be either alone or with their relatives and they do expect not to get disturb by other activities going in the same dialysis room .

C) Dialysis Unit Environment

This section includes the questions that are related to the overall environment of the dialysis unit.



Interpretation:

10. Safe Disposal of Clinical waste:

We can see in graph that 13 centres were having excellent disposal waste system, 11 centre were having good facility for disposing their clinical waste, 16 centres were found to be with average facility of waste disposal & 4 centres were found to be very poor regarding their disposal wastes, 1 centre was found to be terribly bad with their disposable system, we get this figure that there were highest number of hospital who were not concern for safe disposal of waste which not good as per to the aspect of hygiene factor because if the disposal of waste will not be done properly there will be chance for several kinds of disease to get born from which the patient will get affected and also the other peoples in dialysis unit.

11. Ambiance:

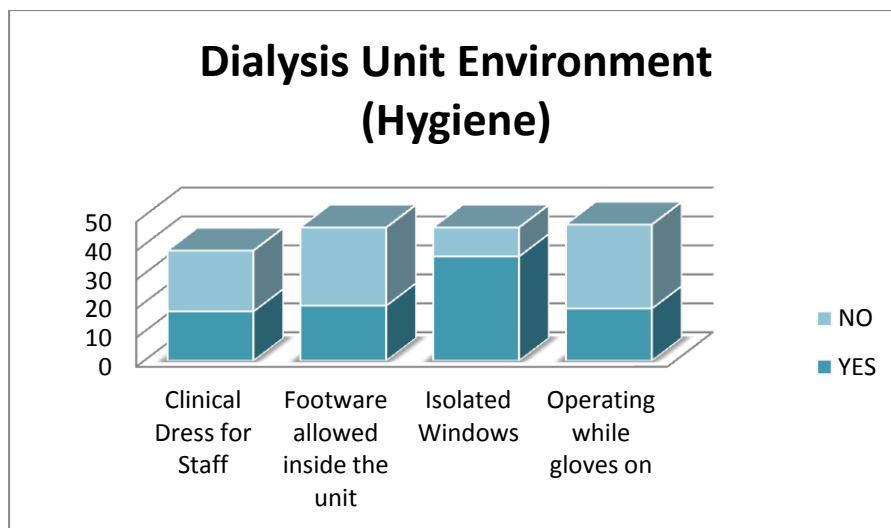
While asking the questions to technician we observe the ambience level of dialysis room of hospital. Where we found that 8 Hospitals were found with excellent ambience, 19 were good, 15 were average & 3 were found with very poor ambience. Ambiance here refers for the overall neatness & cleanliness of the dialysis room. Dirty and unclean dialysis unit is not good for the patient whose dialysis is going on and also for the visitors who are present during the dialysis.

12. Ventilation:

As for the ventilation we found that there were 9 hospitals that have got excellent ventilation system, 21 hospitals were found to be equipped with good exhaust systems, 11 centres were there with average ventilation systems & 16 centres were found with very bad or no ventilation systems attached to the centres. As ventilation is one of the important way to get the fresh air in the dialysis room the dialysis units must have good quality ventilation systems that maintain fresh air inside the dialysis room that can in turn help in getting the patient comfortable in the unit.

13. Hygiene:

Under hygiene there were four criteria through which we had observed and analysed the level of cleanliness and hygienic environment of dialysis unit.



Interpretation:

a) Clinical Dress for Staff-

By doing observational study we find out that there were only 17 hospitals, where technicians were provided with the clinical dress while doing the dialysis and 31 hospitals are not providing it. As the dress of the staff is important because it is should be cleaned in special form of detergent and got sanitize by chemical so that there will be no any chance of any disease to get in there dress which will affect the patient.

b) Foot wares allowed inside the unit-

In this we saw that 19 hospitals were not allowing the footwear inside the dialysis unit & in 27 dialysis units, technician & nurses were seeing walking with foot wares. Foot wares are not allowed inside the units as there are some micro-organisms that would get stuck in these

foot wares and can contaminate the environment of the centre and can prove harmful for patients undergoing dialysis.

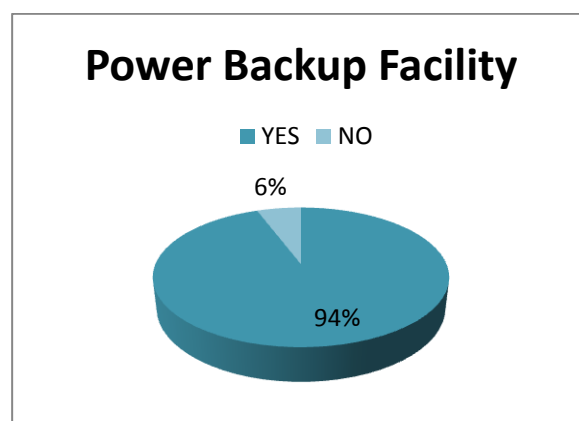
c) Isolated Windows-

By observing we got that there were 10 hospitals that had not got the isolated windows inside the dialysis room and 36 hospitals were fitted with isolated window. Presence of isolated windows is very important for a particular dialysis centres as they helps in preventing outside foreign contaminated particles entering in the dialysis unit.

d) Operating whiles gloves on:

The last part for analysing the hygienic condition of dialysis unit was observing whether the technician operates while gloves on. Under this criterion, it was seen that technicians of only 18 hospitals were operating on patients with gloves while technicians of 29 centres were not seen wearing gloves when they were operating on any patient. The technicians must learn that how important it is to wear a glove while operating a patient as if by any case blood comes out from tubing, it is very unhygienic & unsafe, both for patient & for technician.

14. Power back-up facility:



Interpretation: In the case of power back-up facility we had got the positive result that there were 94% of hospitals who providing the power facility to the dialysis machine when there is power cutting during the dialysis of patient and only the 6% of hospitals are unable to provide the power back-up facility.

7. Conclusion:

Key learning's:- In the whole internship period we learn actually so many thing from company to field but the most important learning for us as a fresher was:-

1. Practical experience after coming out from the theoretical world of management, which would be great helpful for our future work.
2. Practical experience of survey and face to face discussion about the research to doctors/Technicians.
3. Knowing about the working profile of organization and its market analysis work.
4. And got the knowledge about that how the hygiene does play most important contributing factor in safe and effective dialysis.

Suggestion: As we all know that most the HD patient dies within short span of years even if they are on regular dialysis. This happens somewhere because of not maintaining proper hygiene factor in dialysis. By analysing the whole criteria of maintaining the basic hygiene factor in the dialysis unit we can easily says that there were maximum numbers of hospital who are not maintaining it and this thing is happening due to lack of information to hospital management and the technician who are doing dialysis in respect of hygiene factor. So we can suggest that there must be some kind of workshops or seminars should be conducted through which we can give the basic knowledge to them regarding how does a hygienist dialysis can add some more years to the life of patient.

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