

## Study of Laundry Services in a Tertiary Care Government Hospital with Critical Appraisal and Scope of Outsourcing

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### Abstract

*Introduction:* Linen and laundry services are an integral part of the hospital support services and an indicative of the quality of Patient care. Service, Quality, Economy and timely delivery are the main aspects which have to be considered from an administrative point of view.

*Objectives:* Keeping the same in view, the study was conducted with the aim to critically analyze the organization and functioning of laundry services at a tertiary care Government Hospital with the scope of outsourcing the laundry services.

*Conclusions:* The constraints and the problems faced in the laundry were analyzed and the recommendations were given to improve the efficiency of laundry service. The authors conclude that the cost cutting measures should be taken instead of outsourcing the Laundry Services.

**Keywords:** Laundry; Hospital Linen; Hospital Infection; Outsourcing; Hospital Services.

### Introduction

Linen and laundry services are an integral part of the hospital support services and an indicative of the quality of Patient care. This word laundry is derived from launderer/ laundress which means washer man or washer woman. Hospital linen includes all the clothing made of cotton, linen or wool or synthetic fibers which are contaminated with blood, excreta or secretions from the patients. The main objective of laundry services is to provide adequate quantity and quality of clean and sterile linen including bed linen, towels, personal clothing, uniforms, scrub suits, gowns and drapes for

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operation theatres. Service, Quality, Economy and timely delivery are the main aspects which have to be considered from an administrative point of view [1-8]. Keeping the same in view, the study was conducted with the aim to critically analyze the organization and functioning of laundry services at a tertiary care Government Hospital with the scope of outsourcing the laundry services.

### Materials and Methods

The study was conducted at a tertiary care Government Hospital as a part of Project for PG Diploma in Hospital Management from the Period of October 2012- September 2013. The identity of the hospital is not being revealed due to confidentiality. On the spot direct observational study was done to study the physical facility and layout of the laundry so as to compare it with standard normal guidelines. The Procedure followed or functioning of laundry was also done direct observation. The permission

was obtained from Officer Incharge on the ground of maintain confidentiality. The interview study was done and discussions were held with the authorities and staff at different levels who were willing to participate in the study to collect information on Laundry process, working of the machines, policies & procedure, organizational structure, functioning problems face by the staff, suggestion to laundry services. The same set of questionnaires was asked and the answers were cross-checked to eliminate the individuals bias. The distribution of duties among the staff and the record registers were also studied. Various other concerned ancillary departments like equipment repair, maintenance department and central stores were also visited to understand the support service to the Laundry.

#### *Observations*

The salient observations are mentioned as under:

1. The Hospital had an in-plant mechanized laundry that caters to the hospital needs of linen.
2. The laundry had two points of access which can be used entry as entry and exit.
3. The hospital laundry covered an area of approximately 1200 yards, rectangular in structure and the boiler room is located behind the laundry building in a separate room from the main laundry. There is a separate entry for the boiler room.
4. The workflow is in 'U' type and there are exhaust fans and enough windows all around the building for proper ventilation of the working area. A ventilation duct system is installed though it is not functioning to the best of its capability.
5. The water comes through the CPWD supply and is soft and does not need any further treatment.
6. Organizational Structure

Additional Medical Superintendent/ Special Administrative Grade-1



Chief Medical Officer-1



Medical Officer-1



Laundry supervisor-1



Head Clerk-1



Store Keeper -1, Upper division clerk-1



Head Laundry Operator-1



Operators-6



Nursing Orderly-1



Safai Karamcharis and Multipurpose Courier Workers-20

7. The workload is 60,000-65,000 clothes/month. The load is approximately 3000 clothes/day or it is about 1500 kg of linen washed/day.

8. The laundry is mechanized and all the machines were installed when the laundry was started. The older machines including the washing machines,

hydro extractor, drying tumbler and sluicing machine have been replaced periodically with a life span of 10 years.

9. Laundering process: The Laundry works in two shifts from 8 am to 2pm and 2pm to 8 pm. Laundry remains closed on Sunday and on gazette holidays. The Washing time is 45 minutes, Hydro extraction timing is 15 minutes

and drying timing is 30 minutes per cycle.

10. Logistic supply

- Washing materials are being supplied on a monthly indent from the central (non medical) store. The requirement is sent to the store 15 days prior and the indent is received from the store.
- Average demand is as follows:

List of Equipments

S. No.	Name of Equipment	Capacity	Quantity
1.	Washing machine	100 kg	1
2.	Washing machine	75 kg	4
3.	Hydro extractor	50 kg	6
4.	Drying tumbler	50 kg	10
5.	Calendaring machine/ air compressor machine	-	1
6.	Steam flat bed press	-	1
7.	Ironing press	-	1
8.	Trolley	-	20
9.	Tailoring machine	-	1
10.	Boiler	-	2
11.	Water Softening Plant	10000 Ltr	1

	Monthly	Daily
Soaps Chips	270 kg	9 kg
Soda Ash	540 kg	18 kg
Bleaching powder	90 kg	3 kg
Blue	30 kg	1 kg
Ranipal	15 kg	500 gm
surf	20 kg (Only for wooden)	

The material is purchased by the central store as per the demand from the laundry. There is quarterly purchase of the material by central store.

Total expenditure incurred per month is

Rs. 17,87,400

Total weight of clothes washed in a month (kg)

45000

Cost of washing one kg of cloth is Rs. 39.72

Costing

The approximate cost incurred in washing the clothes is calculated based on several parameters Monthly expenditure.

- Salaries and wages Rs. 6,86,000
- Cost of washing material- soap chips Rs. 7,500
  - Soda ash Rs. 16,000
  - Blue Rs. 5,000
  - Bleach Rs. 1,000
  - Ranipal Rs. 2,500
  - Total cost Rs. 32,000
- Monthly maintenance 22,60,000/12 Rs. 1,83,000
- Cost of light diesel oil (LDO) Rs. 8,86,400

**Note-** Besides there is additional costs of liner procurement, linen replacement, hidden costs, water and electricity which are borne by the CPWD and could not be accounted above.

Constraints

On inspection of the laundry and after discussing with the staff certain problem areas were identified. The most obvious fact and what the staff feels most is that in comparison to the other departments, hospital administration has not given enough importance to the laundry and linen supply.

*It is very obvious with the issues like*

- The material is not available in time and whatever

material is purchased is not adequate for overcoming the demands.

- The laundry is supposed to open at 8am but the working only starts after 9 am. The manpower employed in the laundry often takes break thus delaying the process.
- Space constrain is an important problem. Though there is enough space for expansion but still there is no space to store the blocked linen or the linen, which needs condemnation.
- The condemnation process is delayed and the laundry is not given due importance for the same.
- The cost incurred is very high but the authorities have advocated no cost control measures so far.
- A lot of pilferage takes place because of the lack of adequate supervision, with the laundry workers putting in less than the required material for washing and washing their personal clothes along with the hospital clothes.
- Also a lot of damage is taking place due to the recently employed machines which are substandard and the percentage of the damage to the clothes has increased from 5% to almost 95%.
- There are certain items that are blocked per month. For these items there is no system or storage, disposal or recuperation. There is no provision for the retrieval of these clothes and the accountability comes directly on the manager.

#### *Critical Appraisal*

- Cost of washing is the most critical issue for this laundry. The cost incurred by the hospital is Rs. 39.72 per cloth. This is very high compared to normal domestic laundry service of about Rs. 10-12. Possible reasons for this high cost could be:
  - ❖ Lack of professional training of the staff regarding operation of laundry machines again reduces productivity and need for more staff.
  - ❖ Frequent break down of machinery decreases output.
  - ❖ The machines are responsible for a lot of wear and tear in the clothes.
- The frequent breakdown of machinery is another important issue in itself and also in terms of increasing the cost. The annual maintenance / repair expenditure of the machines is Rs. 22,60,00.
- The frequent un-serviceability of equipment could also be due to ignorance in handling the equipment. The laundry operators need to be

properly trained in handling the equipment.

- Solid, infected, routed linen is not received in different bags from the wards. This mixing of linen is a serious threat to the health of the laundry workers, who will be handling the linen without being extra cautious as to what they are handling.
- The linen is not being weighed before washing. In fact overall only 8 cycles of one washing machine is being used and in which about half is water and the total clothes are much more. So the machines are being overburdened in each wash.
- Though the laundry is costing almost triple but the final quality of wash is still compromised. The staff employed in the laundry services does not use protective clothes while washing and also no hygiene is maintained while taking out the washed and dried clothes from the machines
- The laundry premises are not neat. The area has is not properly fumigated. This in spite of the fact that laundry receives a lot of infectious wastes.
- Condemnation board for laundry is being carried out almost once a year. The condemnation board should be held once in six months. In the mechanized laundry the life of cloth is further reduced.
- The clothes that are sent for repair are not washed and directly packed after repair.
- There has not been any regular immunizations/ health check up of the laundry workers.
- The woollens are washed but there should be provision for dry cleaning of these items.
- The storage area in the folding room does not have cover so the washed clothes are exposed to dust etc.
- The LDO that has to be procured for the laundry operations has to be done by the laundry supervisor himself, for which he has to visit the IOC office with the request for clearance of the demand. It wastes precious time and also uses up the manpower, which could have been put for different use.

#### *Recommendations*

- First and foremost a committee should be formed, including a microbiologist and a surgeon. There should be quality check and control.
- The working of the laundry should be better supervised with the workers asking to come on time so that the process is started and finished on time.

- Reduction of the cost is an important issue for the laundry. This can be managed by the following options:
  - ❖ Proper and complete utilization of the equipments
  - ❖ Proper training of the staff for operating the machines. This will reduce the cost incurred on the maintenance.
  - ❖ The hospital laundry can be staffed and expanded and it can start catering to the laundry needs of the small hospitals in the vicinity of course after things are settled at higher level.
  - ❖ The cost can be cut on the total linen purchase by provision of the clothes returned to the department on the same day. Therefore the total linen required can be reduced and thereby the total cost of laundry can be indirectly reduced.
  - ❖ The clothes should be properly weighed before putting in the washing machine so that some saving can be done on the electricity.
  - ❖ The DO's and DON'T's for the equipment should be clearly written and pasted in the working area so that the maintenance cost can be cut down.
  - ❖ If there is lack of adequate linen for change then first and foremost new linen should be purchased and if the staff is not efficient it should be tackled.
- The laundry should be expanded to provide more storage area.
- Any cloth that leaves or breaks the cycle in between should go back to the first step that is the sorting area. Especially the clothes from the tailor room should not be coming back to distribution counter directly.
- The immunization schedule should be implemented for the laundry workers on regular basis especially for hepatitis B and C. The DoH guidelines also include the guidelines for health check and immunization.
- The laundry staff should be educated about infection control policies.
- The area should be fumigated as this is most often exposed to all kind of infections through linen.
- The clothes should be sorted prior to reaching the laundry i.e. from the wards they should be collected in separate bags or all the linen should be treated as infectious linen. Preferably the infectious clothes should be soaked in bleach in the wards.
- There should be some permissible number of items that the laundry manager should have the authority to dispose or condemn as some

pilferage and some blocked items cannot be avoided.

#### Scope of Outsourcing the Laundry Services

The outsourcing of the laundry services is a very difficult issue to debate on. There are various factors which are supposed to be considered while resolving this issue.

The factors which must be kept in mind include:

1. An Inplant system of laundry already exists in the hospital.
2. There is already linen in sufficient quantity for serving the hospital needs.
3. What to do with the manpower which is already employed for this service.

The procedure of outsourcing the laundry is already under review of the administration. There conditions being that they will provide laundry services for a price of Rs 23/kg of linen, but they would use CNG for their operational services. Also they will use the space of the laundry, free of cost and require sufficient amount of electricity and water supply from the hospital. The machines that they would bring for use will be imported and latest and they will replace the existing machines.

The costing that is being provided by the private company cannot be compared at present, as the cost being calculated in this study using LDO, but the company is employing CNG as its fuel, hence different calculations have to be done using the CNG as the fuel.

Though the cost per unit of cloth is coming very high i.e. Rs 39.72/- still we can employ measures to cut cost. The main problem is the LDO fuel that is being used. If it can be changed with the CNG fuel then the cost can be cut down tremendously. Hence we can see that the cost can be tremendously reduced if the CNG is used as the fuel. This will also help in retaining the manpower that has already been employed for this service.

The only aspect which can be considered in favoring the outsourcing is the administrative convenience that will be there. The time and effort that are being employed by the administration is of a high amount. Also the attitude of the workers is of a casual nature, maybe due to the job security provided by the government, due to which the efficiency of work is reduced. Outsourcing will also ensure decrease in pilferage costs to the hospital.

The requirements of a good laundry in the hospital include the fact that there should be a continuous supply, good quality of the service and the last is cost.

As the continuous supply is such an important factor the company with which the outsourcing has to be done, it should be ensured that an appropriate contract is designed such that there should be enough penalties to ensure that the company does not falter in providing clean linen to the hospital on time.

As far as this study and my observations are concerned, the authors recommend that there should be a change of the fuel from LDO to CNG. This would ensure that not only the continuous supply is continued but the costing is also reduced.

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