

4.5 LAUNDRY SERVICES

4.5.1 Overview

Laundry and linen service is one of the vital department of the hospital.

Criticism of linen service is one of the most frequently heard complaints in the hospital. Attention to patient's personal needs and comfort is as important as the physician's medication, the care tendered by the nurse and appetizing food served promptly and attractively.

An adequate supply of clean linen sufficient for the comfort and safety of the patient thus becomes imperative.

Besides helping in maintaining a clean environment which is aesthetically significant to patients, clean linen is a vital element in providing high quality medical care.

The other aspect of this is the personnel appearance of the staff who attend on patients.

Pleasant, neatly-dressed employees in fresh, neat, uniforms go a long way in creating a positive image of the hospital.

A reliable laundry service is of the utmost importance to the hospital. In today's medical care facilities, patients expect daily linen changes. In some areas, linen has to be changed even more frequently.

This rigorous schedule can be very exacting on both the laundry and the capacity of linen to withstand repeated cycles of use and wash.

To enable the laundry to meet such a demand, the hospital should have a sufficient quantity of linen for circulation and to provide a rest period in storage.

4.5.2 Functions

- Collection of or receiving soiled and infected linen.
- Processing soiled linen through laundry equipment. This includes sorting, sluicing and disinfecting, washing, extracting, conditioning, ironing, pressing and folding.
- Inspection and repair of damaged articles, their condemnation and replacement.
- Assembling and packing specially items and linen packs for sterilization.
- Distributing processed linen to the respective user departments.
- Maintenance and control of active and back-up inventories and processed linen.

4.5.3 Location

The laundry should be located as to have ample daylight and natural ventilation.

Ideally, it should be on the ground floor of an isolated building connected or adjacent to the power plant.

This is because laundry is one of the largest users of power, steam and water.

A location that allows movement of linen by the shortest route saves effort and time. The department should also be close to service elevators.

Some hospitals have chutes through which linen bags are dropped to a designated place from where they are picked up by laundry personnel.

Every time a load of linen is handled, the cost of laundry services goes up. The location and physical plan are important in keeping the cost down.

One way of doing this is to keep the traffic flowline as short as possible on vertical and horizontal transportation between the laundry and the user departments.

This can be more easily accomplished in a vertical multi-storeyed building where the services are in the basement.

4.5.4 Some Planning Elements

4.5.4.1 Size of Active Inventory.

In planning and maintaining linen stock, a stratified inventory system is generally used.

This means that for every piece of linen in use, there are four others either being processed or held in store.

Therefore, the active inventory consists of items used daily multiplied by five.

For example, for each hospital bed in use, one sheet or pillowcase will be found in the following places:

- A soiled one is use on the patient's bed.
- A clean one in the linen closet in the nursing unit.
- A soiled one in the hamper or dirty linen collection area.
- One piece being processed in the laundry.
- A clean one in the linen store or back-up store for replacing active store.

4.5.4.2 Laundry capacity and Load

A final assessment of the plant and machinery required for a laundry can be made only by compiling a list of types and quantity of articles to be laundered weekly.

At the planning stage, the information required can be projected by using the following guidelines:

- 1. American Standard:** An average of 15 pounds (6.80 kilograms) per bed per day plus 25 pounds (11.33 kilograms) for each operation or delivery.
- 2. British Standard:** 60 articles per bed per week at 0.39 kilogram per article.
- 3. Indian Standard:** the rule of thumb is three to five kilograms per bed per day. All soiled linen in hospitals can be classified into two categories:

- a) Ordinary or normally soiled linen
- b) Fouled or infected linen

All babies' soiled napkins should be treated as infected.

For arriving at the actual daily workload, the total load of seven days soiled linen should be washed on six working days of the week.

The laundry should have the capacity to process at least seven days collection within the regular six-day workweek.

Soiled and infected linen comprises large flats (sheets, etc.), small flats (pillowcases, etc.), tumble work (both towel, bedspread, Blankets, etc.), presswork (garments, etc.), operating room and obstetrical linen, nursing and paediatric linen, and isolated linen.

4.5.4.3 Design

The laundry functions effectively only when it is planned strictly in accordance with the work sequence, namely, receiving, processing and dispatching.

Fig. shows the flowchart of the laundry showing trends of traffic.

The activities of the hospital laundry are in many ways similar to those in hotels and other institutions.

However, the hospital laundry also handles speciality items and tasks.

The most important of these being disinfection and infection control because hospital laundry processes not only ordinarily soiled linen but also infected or fouled linen.

It should be designed for asepsis and for removal of bacterial contamination from linen.

Hospital planners and administrations by and large fail to see that the layout and system of processing linen in a hospital laundry should follow the principles involved in the central sterilization and supply department.

There should be a strict barrier separation between the normally soiled linen and fouled or infected linen on the one hand, and between the soiled area and the clean processing area on the other.

The latter can be accomplished by installing double-door, pass through washing machines in the wall separating the soiled area and the clean processing area.

Linen is loaded on the soiled side and unloaded on the clean side.

This physical separation of soiled and clean areas has an important bearing on the design of laundry and infection control.

Traditionally, the various steps involved in the processing of linen are carried out, in the same room as, say, in a hotel laundry.

An enormous quantity of bacteria is released into the air of the processing area while sorting linen before wash.

This airborne contamination pervades the whole area and eventually settles down on clean processed linen that is delivered to the patient care areas.

This should be avoided by separating clean and soiled areas. The plan of a hospital laundry is given in following Fig. 5.1.

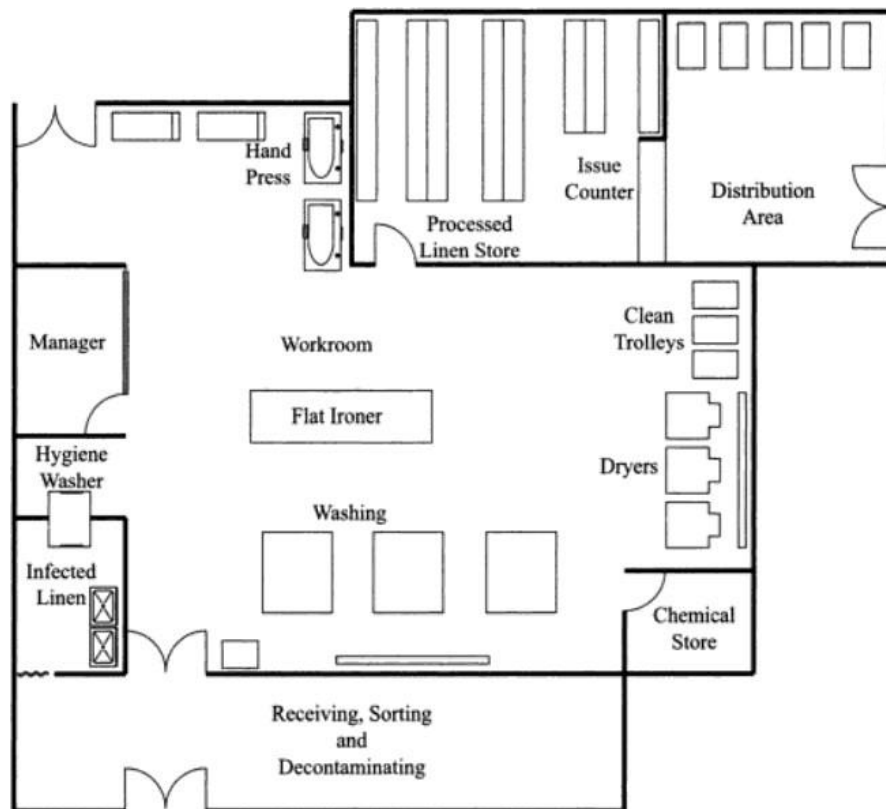


Fig. 5.1 Plan of a Laundry

4.5.4.4 Disinfection Area

Fouled or infected and normally soiled linen should be handled and washed separately.

Fouled and infected linen goes to one section of the reception-control area where it may be temporarily stored and later sorted and loaded into washing machines.

This area should be separated from the rest of the reception area and from the post-wash clean area of the laundry.

This latter separation is best done by double-door, pass-through washer-extractor machines installed in the barrier wall.

Some laundries provide a separate slicing machine for sluicing and disinfecting before they are loaded into the washing machine on the clean side of the reception-control area.

The normally soiled linen is stored, classified and loaded into the washing machine on the clean side of the reception control area.

Some hospitals use a double door pass through a hygiene washer for infected or fouled linen at the initial decontaminating stage of washing.

4.5.4.5 Utilities

Early in the planning and design stage, a careful study and projection of the utility and services needed for the laundry should be made.

The important requirements are water, power, steam and compressed air. Laundry consumes a great deal of water.

There should be a source sufficient to meet the entire need. Discharge of effluents should also be dealt with at the earliest stage.

Adequate power must be available. Hundred percent of the normal power should be provided as standby.

Adequate quantity of steam and correct temperature are also important.

Steam should be delivered by the shortest route to minimize line losses and at the same time provide ample heat to flat work ironers and presses.

The laundry also needs compressed air to operate these flat work ironers and presses.

4.5.4.6 Organization

The operational chief of the laundry is a laundry manager who may have been trained in laundry operation or has adequate experience in the field.

He reports to one of the associate or assistant administrators. Many laundry managers come up through the ranks.

However, with increased automation and better opportunities to train people in technical schools, more and more hospitals are recruiting ITI-trained personnel to head their in-house laundries.

No formal training is required for the other personnel and most of them learn their responsibilities on the job.

Hospitals will do well to recruit personnel who are able to read and understand simple instructions.

4.5.5 Facilities and Space Requirements

- Reception control area with facilities for receiving, storing, sorting and washer loading of soiled linen.
- Sluicing and disinfecting/decontaminating area.
- Clean linen processing room.
- Laundry manager's office with provision for an unobstructed view of the laundry operation.
- Sewing, inspection and mending area. A light table is necessary for inspection.
- Staff facilities.
- Supply storage room.

- A lockable store to accommodate materials for re-clothing calendars and presses.
- Solution preparation and storage room.
- Hand washing facilities in each room where clean and soiled linen is handled or processed.
- Provision for supply of water, power, steam and compressed air.
- Cart washing and cart storage area.
- Clean linen storage room
- .Clean linen issuing counter.
- Electrical distribution switchgear room.
- Water recovery and recycling plant, if necessary
- .Water softening plant, if necessary.

The following facilities are required off-site:

1. A central clean linen storage and issuing room.
2. Clean linen (lockable) storage in every nursing unit and user department.
3. Separate room(s) to receive and hold soiled linen from the wards and departments until ready for pick up by the laundry personnel.

4.5.6 Selection of Equipment

Automatic machine and labour saving devices have resulted in economics in the number of personnel and operational time, increased productivity, better utilization of water, heat power, steam and washing materials, and maximum utilization of men and machines.

Some of the features commonly focused are automatic formula dispensers, automatic operation controls, sorting and counting devices, machines combining washing, rinsing and extraction, and flat work folding machines for automatic folding.

The solution of equipment of a proper size is of utmost importance for balanced and economical production.

Laundry equipments should be carefully selected. The following factors should be kept in mind:

- Reasonable capital cost.
- Reliability of design and compliance with the Bureau of Indian Standards.
- Availability of spare parts and ease of maintenance.
- Efficiency in working under normal conditions.
- Economy in consumption of utilities like water, power, steam, etc. and in washing materials and

other consumables.

- Continuity of workflow and reduction of manual effort.

4.5.7 List of Equipment

- Washer-extractor sluicing machine.
- Double-door washing machine.
- Hydro-extractor.
- Machines combining washing, rinsing and extraction.
- Flat work ironer, also called rotary iron or calendar.
- Tumble dryer.
- Utility press.
- Mushroom press.
- Table trolley.
- Hand iron.
- Dry linen trolley.
- Wet linen trolley.
- Linen hamper.
- Hanger trolley.
- Distribution trolley.
- Motorized sewing machine.
- Platform scale.
- Air compressor.

4.5.8 Problem Situations

Theft of linen

Linen in good condition is a very marketable commodity.

Besides, people use sheets and pillowcases in their homes and pilfered linen items becomes handy.

Theft of linen takes place usually at night on the patient floors and departments. Interestingly, soiled linen is not a significant target of theft.

All linen should be kept under lock and key, and linen in stock should be made accessible

only to those who need it as part of their duty.

The linen closet in the nursing unit should be located directly facing the nurses' station to deter pilferage.

The supply of linen in the wards should be kept low to correspond with the bed occupancy.

Theft is proportionally higher when a large quantity of linen is accessible to the employees, visitors and patients.

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