

LAUNDRY SERVICES AND LINEN MANAGEMENT

The provision of clean linen is a fundamental requirement for patient care. Incorrect procedures for handling or processing of linen can present an infection risk both to staff and patients who subsequently use it. Hence, correct linen management is important to prevent HA1 and ensure a better hygienic hospital environment.

The term "hospital linen" includes all textiles used in the hospital including mattresses, pillow covers, blankets, bed sheets, towels, screens, curtains, doctors coats, theatre clothes and table clothes. The hospital receives all these materials from different areas like OX wards, outpatient departments and office areas.

ESTIMATION OF STOCK OF LINEN NEEDED BY THE HOSPITAL

Hospitals need to ensure that they have enough stock of linen (including reserve) readily available for all the areas of the hospital.

Different types of linen needed in the hospital include:

• **General Purpose Linen:** This includes linen which is not used for patient care like curtains, drapes, table clothes and similar items commonly used in all parts of the hospital.

Patient Linen: This consists of patient clothing such as pajamas, shirts, gowns, coats etc. worn by patients.

Bed Linen: This consists of bed clothing such as bed sheets, pillow covers, blankets used by the

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01 ; Labour Room, Procedure Room Linen : This includes items such as pajamas, kurtas, gowns, coats, shirts etc worn by surgeons, anaesthetists, OT personnel and also surgical gowns, caps, masks, trolley covers, OT towels etc. required in OX labour room and procedure room.

Number of Linen Sets

Hospitals need to ensure that they have at least four sets of linen per day, even though six sets are preferable.

Classification of six sets of linen needed in hospitals is as follows:

- One already in use (on bed)
- One ready to use (in sub store)
- One in transit-route to laundry or to the ward
- One in washing cycle in laundry
- Two in stock (in central store)

Thus, in an ideal situation, for a 100-bedded hospital, 600 bed sheets are needed.

Hospitals need to maintain the linen stock register for available linen in the central store or with laundry in-charge of the hospital.

GENERAL INSTRUCTIONS FOR LAUNDRY MANAGEMENT

LINEN

The basic principles of linen management are as follows :

- Place used linen in appropriate bags at the point of generation
- Contain linen soiled with body substances or other fluids within suitable impermeable bags and close the bags securely for transportation to avoid any spills or drips of blood, body fluids, secretions or excretions
- Do not rinse or sort linen in patient care areas (sort in appropriate areas)
- Handle all linen with minimum agitation to avoid aerosolisation of pathogenic micro-organisms
- Separate clean from soiled linen and transport/store separately
- Wash used linen (sheets, cotton blankets) in hot water (70°C to 80°C) and detergent, rinse and dry preferably in a dryer or in the sun
- Autoclave linen before being supplied to the operating rooms/theatres
- Wash woollen blankets in warm water and dry in the sun, in dryers at cool temperatures or dry-clean.

BEDDING

- Mattresses and pillows with plastic covers should be wiped over with a neutral detergent
- Mattresses without plastic covers should be steam cleaned if they have been contaminated with body fluids. If this is not possible, contaminations should be removed by manual washing, ensuring adequate personnel and environmental protection
- Wash pillows either by using the standard laundering procedure described above, or dry clean if contaminated with body fluids.

CLASSIFICATION OF LINEN

For laundry purposes, linen in the hospital is classified into two categories:

Dirty Linen	Soiled Linen
Dirty linen is used linen^ but not visibly soiled with blQbd or blood tinged btidy secretions.	Soiled linen is known, or potentially, infietted/infested linen. All linen which conLirminated with excreta,, blood or body fluids or contaminated linen from st patient who is known or clinically suspected, to be infected with diseases like salmonella. Hepatitis A, B or C,, open pulmDnary tube rail osi g HIV etc

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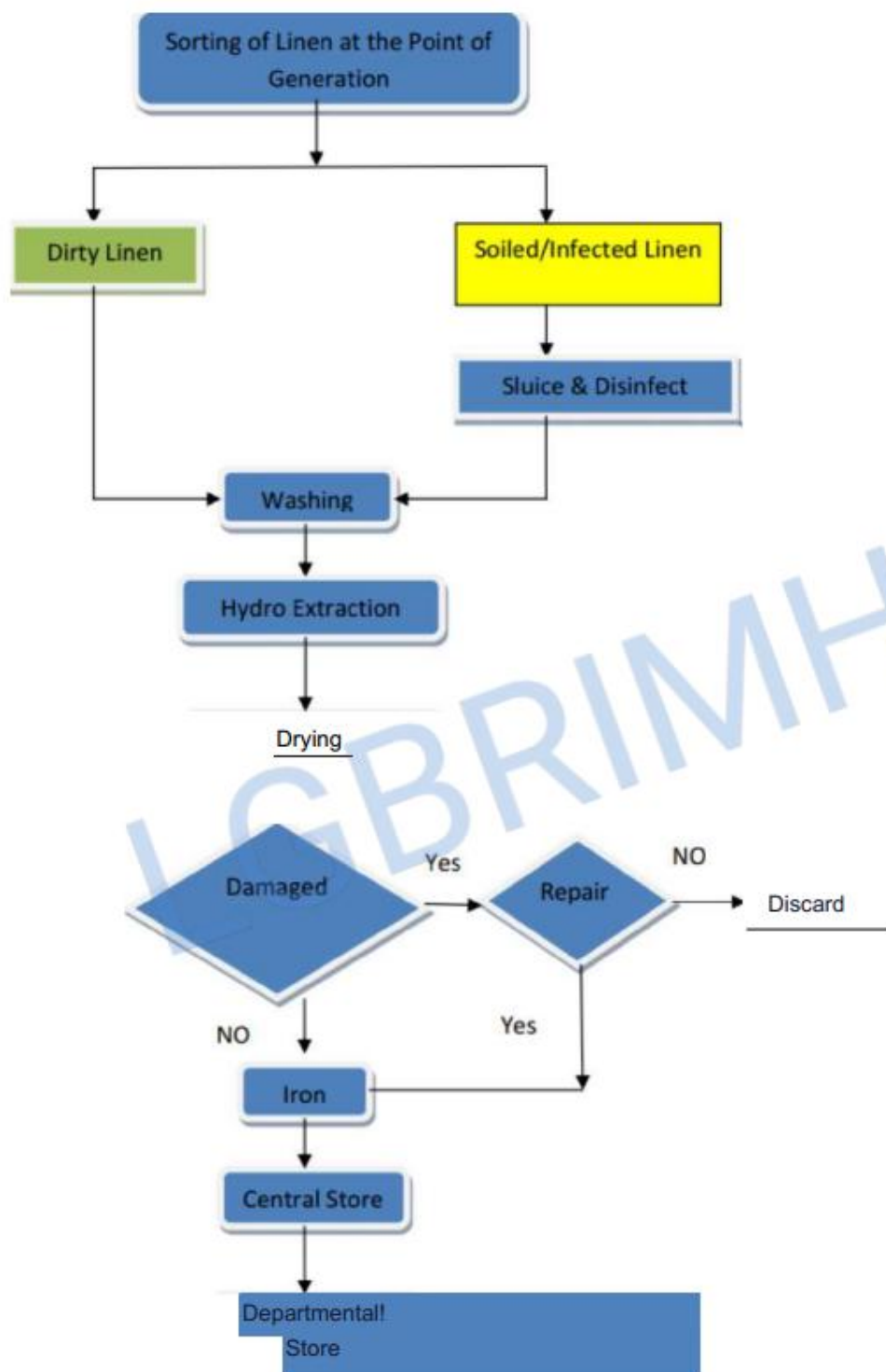


Figure FLOW CHART OF LINEN MANAGEMENT

PROCESS OF LINEN MANAGEMENT IN THE HOSPITAL

LABELING OF LINEN

All linen being used in hospitals needs to be labelled for identification and traceability. Proper labelling of the linen also helps in proper inventory management. The label of the linen includes the following minimum details:

- Name of the hospital (XYZ)
- Name of the Department or Number of ward [ICU/OBS/WARD]
- Type of linen like Bed Sheets (BS), Patient Gown (PG), Pillow Cover (PC)
- Number of linen i.e. 1, 2, 3...
- Doctors coat labelled with Doctor's name

For example, bed sheets used in ICU of hospital can be labelled as: XYZ/ICU/BS/1, similarly bed sheet in general ward 1 can be labelled as: XYZ/GW1/BS/06

LINEN COLLECTION AND SEGREGATION

- The hospital should have fixed schedule for the collection of linen from different areas of the hospital
- All the patient linen including bed sheets, patient gowns needs to be changed daily
- All the linen of critical areas like OT and ICU etc need to be changed daily
- The staff linen needs to be changed on weekly basis
- It is strongly recommended to change all the linen used in the hospital when visibly dirty or are soiled
- While collecting linen, care should be taken to ensure all sharps or patient equipment is removed
- Staff should wear appropriate PPE like heavy duty gloves, apron and mask during linen handling. Any skin lesions on hands should be covered
- Hand hygiene should be practiced after linen handling
- Linen needs to be collected in bags and trolleys and should not be placed on the floor or any other surfaces
- All the linen generated from patient care areas should be segregated into dirty and infected linen. Linen generated from different areas of the hospital needs to be collected in different colour coded trolleys
- Dirty linen needs to be collected in a green coloured trolley and soiled linen in yellow coloured trolley. The laundry management protocol of the hospital needs to include segregation guidelines for all the staff of the hospital
- To minimize aerosolisation of any organisms contaminating linen, linen should not be rinsed, shaken or sorted in the clinical area. The personnel should keep his/her hands away from face while handling linen
- The collected linen needs to be stored at a designated place i.e. in dirty utility of the area of generation.
- The attendant/sister in-charge of the area needs to update the daily transaction register every time linen is collected from the area. The transaction register should include the details of the number of different types of linen items collected from the particular area. A separate register has to be maintained in different areas for the records

TRANSPORTATION OF LINEN

- Linen collected from different areas of the hospital needs to be transported in the covered trolleys to the laundry
- Dirty and soiled linen needs to be transported in separate trolleys
- A dedicated trolley for transportation of linen needs to be used and trolleys used for waste collection or any

other purpose should not be used for transportation of linen

- During transportation it is to be ensured that the bags used for collection of linen are properly tied
- In case of any spillage of the soiled linen during transport, the linen needs to be securely placed in the transportation trolley and cleaning of the surface is undertaken as per the spill management protocol of the hospital.

RECEIVING IN THE LAUNDRY

The person responsible for receiving linen in the laundry needs to enter the details of the linen in the receiving and distribution register at the laundry. The details include type and quantity of linen received, the department from where linen is received, time and date of receiving.

Records are necessary to ensure quality assurance of linen and laundry management in the hospital.

DISINFECTION AND SLUICING

The first step of processing of the soiled linen is disinfection and sluicing of the linen. All infected linen needs to be soaked in 0.5% bleaching solution for 30 minutes, then thoroughly rinsing of the linen is carried out with plain water to remove the bleach. The linen is then handed over for washing.

If the laundry services are outsourced[^] it is the responsibility of the hospital to disinfect and sluice the soiled linen within the facility itself before handing over the same to the outsourced agency or personnel for further processing.

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WASHING

• **Washing by Hand**

STEP 1: Wash heavily soiled/infected linen separately from non-soiled linen

STEP 2: Wash the entire item in water with liquid soap to remove all soilage, even if not visible

REMEMBER : Pre-soak in soap, water and bleach ONLY if linen is soiled

o Use warm water if available

o Add bleach (for example, 30-60 ml [about 2-3 tablespoons], of a 5%chlorine solution) to aid cleaning and bactericidal action

o Add sour (a mild acid agent) to prevent yellowing of linen,, if desirable

STEP 3: Check the item for cleanliness. Rewash if it is dirty or stained

STEP 4: Rinse the item with clean water

• **Machine Washing**

STEP 1: Wash heavily soiled linen separately from non-soiled linen

STEP 2: Adjust the temperature and time cycle of the machine according to manufacturer's instructions and the type of soap or other washing product being used

STEP 3: When the wash cycle is complete, check the linen for cleanliness. Rewash if it is dirty or stained, (Heavily soiled linen may require two wash cycles)

Dirty Linen: Dirty linen (non-infected linen) is to be washed in the first batch, with plain water and detergent. Use of hot water with temperature > 71°C is recommended.

Soiled & Infected Linen: Infected linen is defined as linen derived from known infectious patients, including those with HIV ; Hepatitis B/C and other infectious agents. After sluicing the infected linen is treated with hot water and detergent having temperature of more than 71°C with a minimum wash cycle for 25 minutes.

HYDRO EXTRACTING AND DRYING

- Washed linen is put in the mechanised hydro-extractor for extraction of water from the processed linen. If hospital does not have the facility of hydro extracting the linen can be put to air dry in direct sunlight
- During the process of drying of the linen it is to be ensured that the linen is kept off the ground and away from dust exposure.

REPAIR OF LINEN (IF NECESSARY)

- All the linen is checked for any damage, wear and tear
- In case of any damage like minor hole or tear observed, it should be sent for repair and mending
- If the linen is severely damaged and cannot be repaired, the same can be discarded or condemned as per the hospital condemnation policy by the laundry supervisor

CALENDERING AND IRONING

- Bed sheets and other heavy linen needs to be calendered with mechanised calendering machines installed at the hospital

- If the hospital does not have the facility of calendaring machines, the linen needs to be ironed using flat work iron and is folded properly.

DELIVERY OF CLEAN LINEN

- The processed linen is transported in clean covered trolley to the central store.
- It is to be ensured that the storage of clean linen before distribution is separate from dirty linen
- From the central store the dean linen is issued to respective departments based on the indent generated from the departments
- From the central store the linen is distributed to respective departments in the clean trolleys
- Record of issued linen needs to be updated in the central store room while the respective departments need to update the transaction register with the details of linen received in the department

BEDDING

- Mattresses and pillows with plastic covers should be wiped over with disinfectant such as 70% alcohol or 1% chlorine solutions.
- Mattresses and pillow cover without plastic covers should be washed with water and detergent and left for air drying after discharge of every patient, or on weekly basis if occupied by same patient
- Blankets may be dry cleaned or hand washed. It can be done by soaking for 15 minutes in lukewarm water. Then soap suds are squeezed through the blanket and then rinsed in cold water at least twice. The blanket should not be twisted or wrung. It should be dried by spreading on clean surface.

RESPONSIBILITY OF LINEN MANAGEMENT

- **Change of Linen - Staff Nurse/Ward Attendant**
- **Sorting and Storing of used Linen - Ward Attendant/Housekeeping Staff**
- **Disinfection of Soiled/Infected Linen - Housekeeping/Laundry Staff**
- **Collection of Used/Soiled Linen - Laundry staff**
- **Counting of Collected Linen - Laundry Staff/Nursing In-charge**
- **Transporting Dirty Linen - Laundry Staff**
- **Washing, Drying and Ironing - Laundry Staff**
- **Receipt of Washed Linen in Departments - Nursing In-charge**
- **Storage and Issue of Washed Linen - Nurse In-charge**
- **Table 23: Do's and don'ts for Linen Management**

Do's	Don'ts
A rack for keeping used and ready to use linen should be available close to the point of use	Carry used linen close to the body
Sharps to be removed from the linen	Drop linen on the floor
Appropriate tagging and labelling of linen bags	Shaking linen as this will result in the dispersal of potentially pathogenic micro-organisms
Decontaminating hands immediately following removal of PPE after handling used linen and before handling dean linen	Overfilling of used linen bags
A disposable plastic apron should always be worn when handling used linen and disposable gloves should be worn where linen is soiled/foul.	Linen bags containing used linen stored in corridors (should be kept in a separate designated area)
	Storing clean and used linen in the same area.

RECORDS

List of files and registers to be maintained for linen management in the hospital:

- Linen stock register at the central store

- Area wise daily transaction register
- Laundry and linen receiving register and distribution register at the laundry

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