LINEN UTILIZATION REDUCTION PROGRAM

This document was created as a guide health care facilities that would like some assistance in identifying opportunities for controlling costs associated with their laundry and linen system. There are several linen utilization issues that are common to most hospitals. These utilization issues can be found in all departments of the facility; from the linen room to the patient care areas.

The following topics should be investigated when a health care facility is interested in lowering its laundry and linen costs.

CLEAN LINEN DISTRIBUTION & SOILED LINEN COLLECTION SCHEDULE

The foundation of a successful linen management system is consistent clean linen delivery and soiled linen pickup. It is absolutely necessary for linen to continually turn in a circle. Linen must be consistently delivered to the linen-using departments at the same time every day in order to keep a 24-hour supply from lasting 30 or 32 hours. Once the correct daily par level (or 24-hour supply) is determined for each unit, regular and reliable deliveries will build confidence in the end user, reduce hoarding of linen in patient care areas, and reduce the extra time needed for additional linen deliveries throughout the day.

Clean linen on carts  Laundry/Linen Room
Clean linen being used  Soiled Sort/Washing
Soiled linen collection

The second half of this equation, the soiled linen collection, is equally as important. It is absolutely necessary for soiled collection to occur in a manner that will optimize the amount of linen that is returned to the laundry prior to the sorting and washing of linen. The flow of linen is impeded if the soiled linen collection returns the maximum amount of linen to the laundry 1 hour after the washing has stopped. Facilities that utilize an outside processor should determine when the maximum amount of soiled linen needs to be ready for pick-up by the laundry. Once this time is determined, work backwards to create a schedule for collecting and staging soiled linen. This will give the persons responsible for soiled collection a structured plan for gathering soiled linen.

USAGE STUDY AND PAR LEVELS
Tracking all linen items used by each linen using area will allow the linen department to create appropriate par levels for each area. Ideally, a daily par level will last for a full 24 hours, every day. Obviously, if an area is using linen Monday – Friday, but they only receive a linen cart 3 days a week, the cart par levels will need to reflect this adjustment.

The ControlTex® linen management software is an excellent tool for conducting usage studies and adjusting par levels. A usage study will track all linen items used in each department. A usage study is performed by recording all items that are delivered to an area. Credits must be issued for clean linen that is returned on exchange carts. Calls to the linen room for extra linen must also be added to the daily usage total.

In order to match the supply and demand, and to adjust to census and usage changes, the daily par levels delivered to the units should be adjusted on a regular basis. The ControlTex® Cart/Closet Stocking Level report provides the recommended load levels based on each area’s individual usage rates, census and pre-determined safety buffer. Cart/Closet stocking levels should then be monitored on a regular basis to meet the ever-changing activity levels in the hospital.

The Cart / Closet Stocking Level report will provide linen personnel with the ability to determine which units consistently receive more linen than is necessary. Reducing the amount of linen delivered to these units will free-up linen inventory and will lower the circulating standard or optimal inventory level necessary for the system to run efficiently. This will reduce the costs of processing and replacement.

The impact of reallocating the linen inventory is far reaching:

- Unnecessary linen items are removed from distribution points and reallocated to areas where needed effectively increasing the amount of linen available for use each day. Areas that do not receive adequate linen quantities are also identified and adjustments can easily be made.

- The linen distribution staff will be more efficient and better able to meet the needs of the hospital. Linen distribution supervisors will be better able to plan their work and work their plan.

- Routinely meeting the needs and expectations on a daily basis will foster confidence in your linen distribution system and gradually discourage hoarding of linen.

The initial inventory savings associated with reallocating unneeded linen to other areas combined with labor savings realized through efficient linen distribution are significant.
CLEAN LINEN IN PATIENT ROOMS AFTER DISCHARGE

When a patient is discharged, all clean linen that was placed into the room just in case it was needed must be placed into the soiled bag and processed as if it was used by the patient. A Clean Linen Discharge Audit should be conducted to determine the extent of this problem. The Clean Linen Discharge Audit records all unused linen that remains in patient rooms after they are discharged. After an average amount of clean linen per discharge is calculated, that figure can be annualized to determine the significance of the problem at a specific facility. It is important to realize that practices can vary by unit and this audit can be conducted on a unit basis, or for a complete facility.

Steps to conduct the audit:

1. Enlist Environmental Services personnel to record all clean linen items found in patient rooms for all discharges over the course of several days.
2. Tally the amounts of linen items and calculate an average weight of clean linen found per discharge.
3. Multiply the amount of clean linen per discharge by the number of annual discharges.
4. Multiply the total poundage calculated from step three by the processing cost per pound to determine the annual savings opportunity by eliminating clean linen left in patient rooms.

AMBULANCE SQUADS, PATIENT TRANSFERS & THE EMERGENCY ROOM

Linen loss via ambulance squads is a significant problem for many healthcare facilities. While most transfer and emergency squads are permitted to take amounts of linen equal to amounts left at your facility, this practice is often not followed. A standard 1-for-1 exchange would mean that if an ambulance driver brought a patient in with a flat sheet, blanket and pillowcase, the EMS squad would be permitted to replenish that sheet, blanket and pillowcase from the clean linen supply in the Emergency Room. Frequently, what actually happens is that the EMS squad will take additional linen because they are not certain the next Emergency room they visit will have linen available for them. Even if a squad takes linen equal to the 1-for-1 exchange, the linen they leave in the soiled linen hamper may be of lower quality than what is acceptable for your facility. When a transfer occurs in a patient care area, often times the transfer squad will take all linen on the bed, from the fitted sheet up. Patients who are leaving the health care facility should be either dressed in their own clothes, or they should be given a patient gown that is not a first quality gown. The patient care and security staff should be educated so they are aware of the cost impact associated with the linen
loss via the transfer and emergency squads. Linen is a hospital asset and should be protected like any other hospital asset.

This opportunity can be quantified by observing several transfers and ambulance admissions over the course of a few days. Any linen that is taken in excess of the 1-for-1-exchange policy should be documented. After observing a significant number of transfers and admissions, an “average excess linen lost per transfer” figure can be calculated. After attaching the appropriate dollar figure to this average amount of linen lost per transfer, multiply this figure times the number of annual transfers or ambulance admissions to determine the yearly cost of this practice.

For example, an Emergency Department, with an average of 27 ambulance admissions each day that observes an average of 1 extra flat sheet and 1 extra bath towel leaving with each ambulance squad is losing $6.25 per ambulance squad. Losing one extra flat sheet and one extra bath towel would annualize to $60,937 worth of lost linen.

<table>
<thead>
<tr>
<th>Cost of linen taken in excess of 1-for-1-exchange</th>
<th>Annual ambulance admissions or transfers</th>
<th>Cost of annual linen loss</th>
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<tr>
<td>$6.25</td>
<td>9,750</td>
<td>$60,937</td>
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**LINEN LOSS THROUGH THE TRASH**

Standard Textile has facilitated several trash audits across the country. At each facility, every bag of trash was opened and examined for linen. In each case, the annualized daily amount of linen that was collected from the trash was equal to 20-30% of that facility’s annual linen purchases. During interviews with patient care staff, Standard Textile has determined that linen is thrown in to the trash for two reasons:

1. The linen is heavily soiled.
2. The linen is not acceptable for patient use (due to the fact that it is ripped or stained).

Patient care staff should be educated on proper ways to remove linen from the system. All linen, no matter how soiled, should be placed into a soiled linen bag. Utilizing industrial strength chemicals and OSHA approved procedures, the laundry can properly clean all linen items. If a linen item is unacceptable for patient use, it should be placed in a receptacle designated for such a purpose. Many facilities find that placing a mesh bag on the clean linen cart is the best way to give the patient care staff a way to remove unacceptable linen from the system. Using a discard bag allows the laundry to know what items are leaving the system. Proper replacement rates can be calculated and analyzed for trends over time. Additionally, ragout linen can often be provided to ambulance squads or sold to a
rag vendor, allowing the facility to receive some credit for the item. Additional related savings opportunities are outlined in the next section “Create a Discard Program.”

Linen should never be placed into a biohazard bag. This impacts the facility in two ways:

1. The facility must purchase another item to replace the one that just went into a red bag.
2. Placing linen in biohazard bags drives up the disposal cost for biohazard trash.

**DISCARD PROGRAM**

It is our experience that facilities with out discard programs are needlessly rewashing 3-5% of their total linen poundage. For example, a nurse takes a clean flat sheet off of the linen cart, and finds out it has a ripped corner. If that sheet, which was never used with a patient, is then thrown into the soiled hamper, it will most likely get washed and delivered back to another unit, continuing the cycle. A discard program allows the end user to have the ability to remove that item from circulation and alert the laundry to evaluate the status of the item. The laundry can then decide if repairs should be made, the linen can be used for ambulance squads, or if it should be sold to the rag vendor.

Facilities with outside laundries can feel the most significant impact of this program. For each pound of linen that is not washed, 100% of the processing cost per pound is saved by that facility. For example, a hospital with out a discard program, processing 2,000,000 pounds of linen each year, could potentially be spending $19,200 to wash unusable linen.

<table>
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<tr>
<th>Annual Pounds</th>
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<th>Processing cost per pound</th>
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<th>Annual Savings</th>
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<tr>
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<td>$19,200</td>
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**PATIENT BELONGING BAGS**

If your facility uses patient belonging bags that are opaque, patients can take linen home with them without it being seen. Switching to a clear patient belonging bag will help your facility keep linen, as well as other items, at the hospital where they belong.

**PROPPING PATIENTS**

Pillows should be used when propping a patient’s legs or arms. Many facilities will use folded bath blankets or thermal blankets. These blankets weigh more, and
therefore cost more to process compared to a pillowcase. As often as possible, pillows should be used to prop a patient. Each time two thermal blankets are used to prop a patient instead of two pillows, the laundry must process over 5 pounds of additional linen.

**AVOIDING UNNECESSARY BED CHANGES**

A patient’s status should be evaluated prior to changing their bed. An entire bed change can be wasted if the bed is changed and, within an hour or two, that patient is discharged and the room must be cleaned. If the discharge information is currently not available before bed changing begins, determine a way for the information to be available sooner.

**FORAMALIZING BED MAKING / BED CHANGING POLICY**

The linen management committee is the catalyst for establishing a bed making and bed changing policy. Establishing a bed making standard will aid in creating consistent usage figures and help eliminate unnecessary usage.

In addition, the facility should evaluate an alternate day bed changing policy for the patient care areas. When designing this change, the linen management committee needs to work closely with the marketing department to place more emphasis on the environmental impact as opposed to purely the cost savings to the facility. A trial unit should be selected for implementation with the results monitored. Once the policy is successfully implemented at the trial unit, it should be initiated facility wide. The nurses, aides, technicians, and anyone else involved in bed making need to be inserviced and educated on the importance of the bed changing policy. Periodic checks would insure adherence to the policy.

An alternative consideration to an alternate day bed changing policy, should administration’s thinking be totally against such a policy, is to change the thermal spread only at the time of the patient’s discharge unless it is soiled. The thermal spread is the heaviest of the items in a bed change (3 – 4 pounds).

**BATH BLANKETS VS. THERMAL BLANKETS IN ANCILLARY UNITS**

Ancillary Service Areas can be areas of great cost or great savings. Which blanket is used in these areas is one element that can have great impact on this expense or potential savings. Bath Blankets weigh less have a lower acquisition cost and cost less to process than thermal blankets. A switch to Bath Blankets
would result in a savings in processing costs, in replacement dollars and in acquisition dollars.

**SCRUB POLICY**

Evaluate hospital policy for scrub control, reviewing the areas authorized to use scrubs, and define the process of distribution control for authorized users. Scrub users should be limited to those employees and physicians in O.R., PACU, Ambulatory Surgery, L & D, and Cardiac Cath Lab.

An effective scrub program increases the quality of service as staff members are assured of size availability when exchanging scrubs.

**UNIT COST ALLOCATION PROGRAM**

A Unit Cost Allocation Program is the latest tool being utilized by proactive and efficient linen management systems. A Unit Cost Allocation Program transfers ownership and responsibility to individual units. This results in increased awareness of utilization practices and ultimately a decrease of linen related costs. Case studies have shown that a linen system can realize a 15% reduction of total laundry/linen system costs by implementing a Unit Cost Allocation Program.

To implement a successful Unit Cost Allocation policy, which includes the transfer of linen usage costs from the budget of the linen department to the budget of the individual units the following objectives and procedures are recommended.

The objective of the program is to educate linen users on cost effective linen utilization and to adopt a more responsible approach to linen usage practices. By transferring the cost to the actual user of linen, the individuals who use the linen become responsible for its costs.

These recommendations are designed to improve efficiencies within the linen services department, educate management and staff at the facility on linen awareness, and drive costs out of the overall system.

The following outline can serve as a road map for facilities as the recommendations are critiqued.

1. Review individual recommendations in relation to compatibility with current hospital policy and impact on clinical / staff practices and operations / costs.
2. Refine plans or recommendations through researching subject or by considering new ideas rising from original recommendations.

3. Prioritize recommendations according to the greatest cost or service impact on the linen system.

4. Assign responsibility for spearheading the change, implementing specific recommendations, and monitoring the activity on a regular basis.

5. Continue to review the system, analyze the outcomes, and identify new areas for growth and improvement.

The recommended vehicle for review, analysis, and implementation of the following "Action Steps" is the Linen Management Team. The Linen Management Team should be comprised of end users from nursing units, security, environmental services, and laundry.

The Linen Management Committee should be a resource as well as a forum where linen issues are discussed. A strong team opens lines of communication between nursing and laundry / linen personnel who in turn can help educate the entire hospital staff on broad linen concerns.