Over recent months ALM Headquarters has received a marked increase in the number of inquiries regarding policies guiding the clean-side of a healthcare laundry operation. It seems the concern is the result of various state public health inspectors questioning the laundry infection control practices on the clean side of the processing operation. A few have even cited deficiencies for lack of policies related to cleaning on the finishing/clean side of the laundry. This article will take a look at the issue, what research can tell us, and how can we design a forward thinking (and responsible) plan to keep clean linen clean.

Why the focus on the clean side?

The current focus on the clean side of a laundry operation is most likely a result of increased global scrutiny over the problem of healthcare acquired infections. There has been an increase in research on textiles and their role in the spread of infection. Since 2005, three research projects have focused on the intersection of textiles and infections. In the U.S. we have seen healthcare reimbursement more closely tied to good patient outcomes. This causes healthcare regulators to look more closely at areas that were not previously on their radar.

What does this research reveal?

A 2005 study on hygiene monitoring systems in hospital laundries recognized the importance of the laundering process in producing a satisfactory product and added one caveat: “Critical to this [the laundry] process is the maintenance of an appropriate hygiene level in clean area of laundries in order to prevent recontamination of textiles from manual handling when ironing, folding, packing, etc.”

Research here proposes that regular cleaning and disinfecting of all work areas including clean linen storage equipment is essential to prevent the spread of microorganisms from the soiled processing area into the clean area of the laundry.
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An article in the *Journal of Hospital Infection* addressed the importance of a clean laundry when addressing hospital cleaning measures. An investigation at a large London teaching hospital concluded that Bacillus spores were identified on the floor of the laundry. “It was noted that clean linen frequently touched the floor whilst undergoing steam-pressing. At least forty-five cases were identified with two deaths.”

A 1994 study published in *Epidemiology and Infection* depicts an investigation of two cases of post-operative Bacillus cereus meningitis that traced back to laundry processing. The facility stored damp linen in plastic bags, particularly when ambient temperatures were high. A clean, dry textile will be generally safe for patients. However, bundled textiles that have not fully dried can potentially retain their moisture for some time and as we move into the warmer seasons the ambient temperatures at the laundry and in-transit will increase. Textiles with residual moisture in warm temperatures can over time facilitate potential fungal growth to levels that might pose a risk to the most medically immunocompromised patients.

In 2009 a cluster of six cases of Zygomycosis prompted an investigation at a hospital where researchers concluded that healthcare textiles were the only common denominator. “Evidence pointed to possible departures from best practices during storage and other post-laundrying activities” according to the CDC’s Lynne Sehulster, Ph.D. “The actual laundering of the textiles apparently was not the problem, but what happens to hygienically clean textiles after washing, drying, ironing and folding may be the issue.”

Andrew J. Streifel, University of Minnesota environmental specialist, related an incident from the late 1970s involving Aspergillus flavus contamination showed up suddenly in their new facility. Research identified the contamination point as a laundry delivery truck with an inadequate back door closure that passed daily through a road construction zone. It appears that although “the laundry was somewhat covered with plastic, contamination was occurring.”

What are the inspector’s concerns?

While issues vary from state to state, the patterns that have developed reveal that new attention is being given to the textile as it leaves the processor’s hands up until it reaches the patient. Some of the questions we’ve heard include:

- What is the laundry’s cleaning policy for the finishing/clean side of the operation?
- Why are shoe covers not required on the clean side?
- What is the schedule for sweeping and mopping the floor on the clean side?
- How do you identify clean linen carts from soiled linen carts?
- How often are the transportation vehicles cleaned and how?
- What is your policy for transporting clean and soiled textiles at the same time?
- How do you disinfect surfaces on the clean side?

The questions above are best addressed in each individual laundry’s policies and procedures. For each of the items above, the laundry manager/director might want to review the current industry standards, guidelines and/or best practices to achieve the goal of avoiding cross contamination from the soiled side to the clean side and reducing the likelihood of recontaminating the hygienically clean textiles.

Other processes that might warrant a look:

- Clean linen usage from stock – first in / first-out; how to maintain compliance?
- Bed/Linen change process – when are gloves worn/removed? Does staff apparel cross-contaminate the clean linen?
- Where is a soil/contaminated linen cart stored while awaiting pickup by the laundry?
- Validating clean/soil separation in the truck works for your customer(s)
- Dwell/kill time of the disinfectant used on linen carts; what is proper use?
It would also be prudent to review your specific state’s statutes for hospital licensing as related to laundry services. An individual state hospital licensing authority can require more stringent regulations than those in other states. Over the past five years, this practice has grown substantially.

The standard developed for healthcare textiles, ANSI/AAMI ST65:2008 Processing of reusable surgical textiles for use in healthcare facilities was developed by the Association for the Advancement of Medical Instrumentation. It is a voluntary standard, approved by the American National Standards Institute and while it is designed for surgical textiles, it provides guidance for healthcare textile processing and is widely accepted in the healthcare marketplace. The standards recommend the following (ANSI/AAMI citations are provided for reference).

A high level of cleanliness is important during handling, transport, and storage to ensure that products are received in a manner appropriate for use. This includes written procedures for handling, transport and storage from the laundry to their destination in the main clean textile storage area. [9.1 – 9.2]

Minimal handling of clean textiles and always with clean hands. Clean textiles should never be in contact with an unclean surface (e.g., the floor) but relaundered if this occurs. [9.4]

Clean textiles are transported in clean containers. After clean products are removed the container can be used for contaminated textiles if properly labeled. (Note some states have more stringent requirements here.) [9.5.2]

- Note that North Carolina, New Jersey, Montana, Idaho & Kansas have more stringent requirements regarding soiled/contaminated and clean linen cart labeling usage.

AAMI recommends clean uniforms be provided by and donned at the facility, shoes should be clean, head and facial hair completely covered, and no jewelry in textile processing areas. [4.5.1]

This is another area where states are beginning to make changes. California inspectors are reportedly requiring laundry personnel on the clean/finishing side to wear a gown and gloves, based on “Persons processing clean linen shall be dressed in clean garments at all times while on duty shall not handle soiled linen.”

Floors, walls, ceilings and vents should be of materials that can withstand scheduled cleaning. Scheduled thorough cleaning of the laundry and the textile processing area reduces the potential for environmental contamination. [3.3.3]

Package, transport and store clean textiles and fabrics by methods that will ensure their cleanliness and protect them from dust and soil during interfacility loading, transport, and unloading. [CDC]

Laundry services provided at the hospital are the first to feel the impact of the increased attention on the clean/finishing side of the laundry. However, a recent change by the Center for Medicaid Services has resulted in Joint Commission surveyors looking more closely at the hospital’s required oversight of contracted services such as laundry processing. This will require attention to the clean side of the laundry for all providers of healthcare laundry services.

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