Demystifying the Wash Process

Infection Prevention and Textiles
By Deri Ross Pryor

With the rise of Healthcare Acquire Infections (HAIs) and medicine resistant super bugs, public faith in healthcare facilities to do less harm than good is on the decline. The fact that patient outcomes and satisfaction is intricately tied to reimbursements has put the healthcare industry on edge as it strives to meet patient needs with lower costs. Because of these two factors, focus has narrowed on each component of the industry and how it impacts patient outcomes.

The role of textiles in infection prevention is one such component under increased scrutiny. Contaminated textiles are known to be a source of a large number of pathogens; however, there have been very few reports of healthcare associated diseases as a result of laundries following/adhering to current recommended practices. Regardless, hyper-vigilance has led to textiles being unnecessarily discarded due to fear of irreversible contamination or staining, increasing healthcare costs. Understanding the wash process – how a textile is rendered hygienically clean – is essential to allay these fears and allow the process to run smoothly.

At the simplest level, four factors of the wash process work together to achieve hygienically clean textiles: water temperature, agitation, chemicals, and time. These four “ingredients” are adjusted according to need, making a formula appropriate for the type of soil, textile, and outcome desired. The process removes soil and bioburden, suspending them in the water until they are removed in the rinse cycle.

Deri Ross Pryor, is a staff writer & editor of the ALM Journal. Deri holds a Bachelor of Arts in English & Creative Writing from Eastern Kentucky University and is currently working towards her
According to Lynn Sehulster, PhD, of the Centers for Disease Control and Prevention, hot water and chlorine bleach are no longer the industry standard due to improvements in equipment and detergents. Detergents suspend the soil, while added sanitizers help reduce microorganism counts. Further reducing the count is the use of a souring agent in the rinse cycle. The sour reduces the pH to neutral or slightly acidic, which rinses the last of the detergent away, which also helps with reducing skin irritating residue.

Understanding the function of the wash cycle to remove bioburden as opposed to “killing” potential infection or illness causing materials is crucial. For example, consider Clostridium difficile (C. difficile). According the Mayo Clinic, “Illness from C. difficile most commonly affects older adults in hospitals or in long-term care facilities and typically occurs after use of antibiotic medications…in recent years, c. difficile infections have become more frequent, severe, and difficult to treat”. In fact, an increasing amount of people not considered at risk are now being infected with c. difficile, and an aggressive strain resistant to medications has emerged.

In terms of textile care and the laundry process, Sehulster warns that because “it will be the spore form of this [C. difficile] bacteria that will be encountered in soiled textiles…even with the use of chlorine bleach or some of the oxidative laundry chemical additives, you won’t see high microbial inactivation levels…the most important aspect of reducing the numbers of C. difficile spores is going to come from the detergent/surfactant action and other factors in the wash cycle.”

Other factors that affect the end result of the process include such things as the quality of the water used, equipment, and the soil sort process. For example, if the water is hard, too acidic or alkaline, or contains residual traces of chlorine or iron, the wash process formula must be adapted to counteract these factors. Older equipment may have to be compensated for. Improper soil sort will match textiles to the wrong formula, leaving it either improperly cleaned or damaged.

From the clinicians’ standpoint, it may seem that these issues are out of their control. However, the wash process begins with them. How they utilize
If the nursing staff is using textiles outside of their designated purpose, this will drive costs up. For example, what if they are using blankets as draw sheets or placing them under incontinent patients instead of using underpads? Blankets, due to heavier weight, are more costly to process and replace. A blanket will not generally be considered to be as soiled as an underpad, so it may not get the treatment it needs if it has been significantly soiled with fecal matter. If a patient has C. difficile, the problem is compounded. The laundry staff will not know to sort those blankets other than as prescribed by their operating procedures. Educating staff to use the right linen for the proper job will go a long way in driving costs down and ensuring linens are processed correctly in the laundry.

Another consequence of mishandling linens is overburdening of the laundry facility, resulting in late deliveries or poorly finished items. The laundry facility runs on a carefully planned schedule based on projected needs. Each machine has a load limit. When an influx of linens beyond the normal amount goes to the facility, they either slow down or overload the machines to stay on schedule. Every time clinical staff uses a textile outside of its prescribed use – a blanket as a draw sheet, a wash cloth for cleaning – this contributes to this overburden. The trickle down consequence is either low quality of finished textiles, perhaps not hygienically clean or containing detergent residue that could contribute to skin irritation leading to bed sores, or not enough of the right linens on hand, leading to further misuse and exacerbating the problem.

Many healthcare facilities have a process for purchasing new textiles that includes input from clinical staff. It is crucial that they communicate effectively any issues or needs they have, taking into account the best course for patient outcomes and satisfaction, while also thinking about how the textiles they request will need to be processed. For example, a misconception is that because of such infections as C. diff, disposable underpads are the best choice, however, disposable textiles drive costs up, not just in purchasing, but also in disposal. Reusable underpads are completely safe to use, provided they are utilized correctly, allowing the laundry to process them properly.

While healthcare textiles are not the sole factor in rising costs and patient outcomes, it is clear that it can play a significant role. Understanding that role and how the wash process affects overall patient outcome should translate into better practices when it comes to linen utilization.

**Demystifying the wash process**

Earn one Laundry & Linen Management credit hour by completing the quiz over the material from this educational offering. To maintain ALM credentials individuals must submit proof of continuing education in laundry & linen specific programs every three years.

Access to contact hour quizzes are a benefit of membership in ALM

Check your current continuing education status [here](#).