Microfiber Mops: A Sweeping Change

While the use of microfiber mops has increased over the past year the debate over their utilization continues. We want to take this opportunity to address some of the pros and cons of microfiber mops, when and where you might want to hold onto your convention wet loop mop, and some guidance and recommendations for a smooth implementation from environmental services professionals who have already made the change.

While Microfiber technology has only recently gained acceptance in the United States it has been used in Europe and Asia for more than ten years. Once the user overcomes the general concern associated with any change the advantages of this emerging product can't be ignored.

***Management* is pleased:**
- Time and labor savings
- Lower injury rate

***Infection Control* is delighted:**
- Eliminates cross-contamination with a fresh mop for every room
- No dirty mop water

***Housekeeping* is happy:**
- Lightweight
- Eliminates dirty mop bucket
- Can eliminate dust moping and reduces time

***Laundry* is content because:**
- Washing is simple
- Drying time is reduced

Microfiber is a man made product best used in cleaning applications by combining polyester and polyamide (nylon) fibers that are 1/16 the thickness of human hair. In order to be classified as a "microfiber", the fiber must be less than one denier. Fine silk, for example, is approximately 1.25 denier. A microfiber would need to be 0.9 denier or finer. Many microfibers are 0.5 to 0.6 denier. For another comparison, very fine nylon stockings are knit from 10 to 15 denier yarns consisting of 3 to 4 filaments.[1] The density of this material enables the microfiber mop to hold six times its weight in water. Because the fibers are positively charged, it attracts and picks up dust (which is negatively charged), and these microfibers are able to penetrate the microscopic surface pores of any material.

> ***DENIER*** is the term used to define the diameter or fineness of a continuous or filament fiber such as silk or man-made fibers. Denier is the weight in grams of a 9000-meter length of fiber or yarn. The higher the number, the thicker the fiber.

COTTON LOOP MOP VS. MICROFIBER MOP

Using a traditional cotton loop mop for wet mopping in hospitals has been standard operating procedure in floor cleaning for healthcare facilities for decades. Recently, the healthcare industry has begun to look long and hard at evaluating a different method for cleaning hard surface floors within healthcare facilities with the hope of reducing chemical use, water use, and increasing employee and patient health as well as improving overall cleanliness on site.

Using the traditional cotton loop mop, it was required that the mop head and water be changed every two – three rooms to reduce the risk of cross contamination. This meant dumping gallons of water and chemical down the drain along with the hardship on employees of lifting the heavy bucket to do so.

Using the microfiber mops, the risk of cross contamination is reduced greatly in that you use one mop per room. With the microfiber system, 20 rooms can be cleaned using 1 and ½ gallons of water and 1 and ½ ounces of chemical. Because of this, the operator is not making trips to the janitors' closet many time a day to empty and refill their mop bucket.

THE PROS AND CONS: ERGONOMICS

While ergonomics may serve as an underlying consideration in many purchasing decisions, the cost of elevated workmen's compensation claims, employees off work due to injury or restricted to light duty tasks is a major consideration when reviewing procedures and job tasks/duties. Eliminating these tasks can only be viewed as an immediate advantage:

- Hauling chemical/wash pails and rinse pails back to the janitors' closet for frequent changes of the cleaning solution and preparing fresh rinse water. A full bucket of cleaning solution often weighs 40 pounds and is lifted 7-8 times a day to change solution and water.
- The actual weight of the conventional wet loop mop when mopping the floor – strain and repetitive motion injuries on employees shoulders, arms and back. The microfiber mop weighs approximately 5 pounds less than the conventional cotton loop mop.

THE PROS AND CONS: CROSS CONTAMINATION

Controlling infection rates in healthcare facilities is a focus from many standpoints including, but not limited to The Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Association of periOperative Registered Nurses (AORN), Association for Professionals In Infection Control and Epidemiology (APIC), The Centers for Disease Control and Prevention (CDC), and of course from the Labor side, the Occupational Safety and Health Administration (OSHA). Infection control professionals are delighted with the new microfiber mopping procedures.

- Place a unused charged microfiber mop head on the mop handle
- Mop the room including baseboards reserving the bathroom for last
- If additional solution is needed for stubborn stains ***do not*** place used mop back into the solution but spray additional prepared solution on the specific area and continue process as usual.
- After the room is complete, discard mop head into soiled linen bag.

In a Case Study conducted at the University of California Davis Medical Center the concerns regarding effectiveness of the microfiber mop and their cleaning ability was addressed. The Environmental Services staff performed tests where a room was mopped with a cotton loop mop and then re-mopped with a microfiber mop. In each case, the microfiber mop would capture more dust, dirt, and bacteria. When the same test was done in reverse order, the cotton loop mop was ineffective.

THE PROS AND CONS: COST

While cost savings are recognized in the areas of workmen's compensation claims, injuries, time off, and the reduction of infection issues as stated above. The costs associated with the labor, chemical, and water costs are a major source of savings as well with the microfiber mopping systems as noted below from a testing process at North Ottawa Health Systems in Grand Haven.

- Water usage on a weekday for mopping facility floors utilizing the conventional cotton loop mop was 65,720 gallons of water annually. The total amount of water used annually with the microfiber system was 5,580 gallons. A reduction of 60,140 gallons annually.
- Chemical usage with the old system required 1797 gallons annually under the conventional system. Making use of the microfiber system resulted in a reduction to 131 gallons of chemical annually; or a savings of 1,666 gallons of chemicals
- While studies in time and labor costs associated with the change to the microfiber system vary, most facilities report an average reduction of 2 minutes per patient room. While this amount may seem insignificant at first, multiplying times the number of facility rooms will result in hours per day with a much more efficient and effective outcome.

PROS AND CONS: PROCESSING MICROFIBER MOPS

Interviews with facilities currently using the microfiber systems report minimal problems with processing and while many vendors guarantee microfiber mop heads for 500 washings; use at the University of California Davis Medical Center reflects a typical life of over 1,000 washings if properly processed.

- Microfiber mops should not be washed with cotton mops, rags or any non-microfiber product as they pull on the microfiber making them less effective.
- Wash formulas are quite similar to the conventional cotton loop mop but avoid the use of chlorine bleach which can degrade the material or softening agents as it eliminates the fibers ability to attract dust, dirt, grime or liquids.
- Due to the nature of the microfibers they do not do well in high heat and lower drying temperature should be utilized
- The only negative comment was that the mops tend to come into the laundry with more dust, lint and paper debris. In the past, this material used to surface in the mop wringers and now may remain attached to the mop head.

CHANGE MANAGEMENT GUIDES

As in most managerial changes the introduction of the process is critical to its acceptance and proper usage. From those who have already encountered this experience these recommendations are offered:

1. Collect data, complete accurate research from multiple sources. Don't limit yourself to one vendor's information and talk with other facilities similar to your operations that have implemented the microfiber mopping systems.
2. Work with a small core group within your facility first. Provide them with thorough education, guidance, and follow-up including getting their feedback and addressing problems as they surface within the small group. Don't ignore their concerns since they will be your programs greatest advocates. Obtain statements from them to present to the full staff when you broaden your scope of use.
3. Stage implementation in smaller groups since managing concerns from smaller numbers and covering smaller areas can be more easily addressed. Success breads success and will progressively make each areas implementation easier.
4. Monitor progress including cost, utilization, processing, and product as you progress through the full facility change.
5. Report, publish, and broadcast the results with administration, infection control, and human resources. Positive outcomes are beneficial for all parties involved.

The day of the conventional cotton loop mop is not gone forever. The microfiber system isn't perfect for all situations and most facilities continue to use the conventional mop in high blood areas such as emergency rooms, operating rooms, etc. as well as areas of high grease content such as kitchens. While change can be good, and this does appear to be a topic where it is a win-win scenario, close study and review are necessary for each individual situation. Managers today need to be cognizant of innovations that are developed to improve a process, ease burdens, or better manage costs.

Note: Much of the research and content of this article was provided by Duane Houvener, Member Service Manager at the West Michigan Shared Hospital Laundry in Grand Rapids, Michigan. We thank him for sharing his research and information with us and allowing us to use much of that material in this publication.

[1] Ohio State University Extension Fact Sheet, Textiles and Clothing, Joyce A. Smith, Columbus, OH, www.ohioline.ag.ohio-state.edu