Old Mops Die Hard

Should You Microfiber for Infection Control's Sake?

By David Polonsky, CHESP, and J. Douglas Roill, Dr.Mgt, MS, RD, CHESP

Whether you are an infection control practitioner (ICP), director of housekeeping or an administrator, a microfiber mopping program may be one of the most significant floor-care innovations available to your facility in the past century. Those who have implemented a microfiber mopping system can appreciate not only the uniqueness of the system but have been witness to the numerous benefits. For those who have not yet considered this new wave or those struggling with the question of how or if to make the switch, this article will explain how one facility embraced this technology and how you too can microfiber.

The first test trials of microfiber mops in the U.S. took place almost 10 years ago, yet according to representatives from Nilfisk-Advance and Rubbermaid, two of the leading manufacturers of microfiber products, only 10 percent to 14 percent of all U.S. hospitals have implemented a microfiber mopping program.

It is hard to believe that at one time I was completely content with the traditional one- and twobucket cotton mop process that has been the industry standard for more than 100 years. Being resistant to change, not unlike most people, I wondered why anyone should fix something that was not broken. It was no surprise to my my general manager J. Douglas Roill, D.Mgt, MS, RD, CHESP, who presented me with the idea of implementing a microfiber mopping program, to hear all my reasons why it would not work. Even after my reluctant capitulation, I truly did not think this innovation would stand the test of time. The thought of converting to a completely new system, having to spend time and energy in retraining staff and the expense of purchasing new products just seemed too risky and, in retrospect, a bit overwhelming.

It was almost a year later when the microfiber concept was endorsed companywide and by my district manager, Douglas Cottingham. We endorsed the new technology for two primary reasons. First and foremost was the desire to support patient safety and infection control initiatives. Microfiber technology cleans better, getting into all the nooks and crannies of the floor that the conventional cotton loop mop cannot reach. Just think, a new clean mop for each patient room can effectively reduce the potential cross contamination and possible nosocomial rates in any hospital. Next and equally as important was employee safety. Based on a 22-bed unit, employees have to wring out cotton mops more than 75 times per shift. The process of using a heavy cotton-loop mop is also strenuous. Utilizing microfiber mops can reduce the potential for back, shoulder, and elbow injuries.

It didn't take long to realize that the risk wasn't implementing the new technology, the risk was not implementing the new technology and loosing the economic, environmental, infection control, and ergonomic advantages of a microfiber mopping system. The more one learns about Microfiber technology, the more sense it makes.

The Technology

If you are not yet familiar with microfiber technology, according to an EPA report, it is densely constructed nylon fibers that are one-sixteenth the size of a human hair. Due to the small size and density, these fibers are able to hold up to six times their weight in water. This makes the material much more absorbent than standard cotton-loop mops. In addition, the fibers are positively charged. Since dirt and other particles on your floors are negatively charged, the particles are actually attracted to the mop. This updated technology is a huge improvement over the conventional cotton-loop mop.

Microfiber vs. Cotton

The actual process of using the microfiber mops is a huge improvement over the conventional cotton-mop process. Table 1 illustrates a snapshot comparison between handling microfiber and cotton-loop mops.

Table 1	Cotton-Loop Mopping System	Microfiber Mop Head System
No. of times wringing out mop per shift utilizing mop bucket wringer	30	0*
No. of times a water change is required per shift	7	0
No. of mops used per shift	3-4**	22
Life expectancy of a mop head	1.6 months	16 months
Inventory levels	16	75

This table is based on a 22-room unit including med room, day room, treatment room, etc. Information is also based upon a water change for every three rooms for the cottonmop system. Inventory levels factor in mops in use, soiled mops, and mops in process of being cleaned.
** Microfiber mops need to be rung out by hand but no mop bucket ringers are required.*
*** Some industrial cost benefit analysis found in the literature indicate as few as one cotton loop mop utilized per eight-hour shift. (Environmental Best Practices for Health Care Facilities, November 2002.)*

How It Works

Roll up microfiber mops from end to end and place them standing up into the empty bucket (from an aerial view it would resemble a cinnamon bun or sandwich wrap). Fill a clean mop bucket to the top of the microfiber mops with diluted cleaning solution (approx one gallon depending on the capacity of the bucket). Remove one mop, wringing out the excess solution back into the bucket with a twist of the wrist. (no need for a mop bucket wringer). Place the microfiber mop flat on the floor with the Velcro side facing up. Place the mop frame (head) directly onto the microfiber mop. Begin mopping desired floor area. When finished, remove the soiled mop head and place in a linen bag for laundering. Start the process over again. If more mops are needed, simply place them into the remaining clean solution.

The advantages of this procedure over that of the cotton-loop mop procedure include but are not limited to:

- The amount of cleaning solution and water needed has been dramatically reduced.
- The mop water only has to be prepared once; if you run out of mops, simply add more to the clean solution.
- The mop water will remain clean. Imagine conducting rounds and noticing clean mop water at all times in your mop buckets. Unlike the microfiber mops that do not re-enter the buckets once used, wringing out cotton mops even once can turn your clean water into an unidentifiable brown liquid.
- There is less wear and tear and soiling of the mop bucket.

Implementation

Once the decision is made to adopt a microfiber mopping program, several actions need to be initiated. First complete a cost benefit analysis. This is critical in managing your budget and selling the idea to justify financial support. Table 2 illustrates an example of some data that can be included in a cost benefit analysis. Other factors such as implementation cost, initial inventory purchase, and training can also be included.

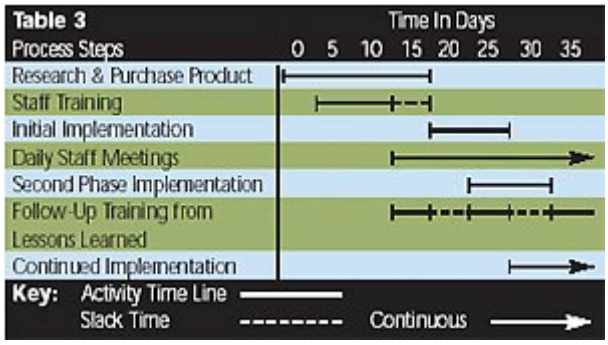
Table 2: Cost-Benefit Analysis	Cotton-Loop Mop	Microfiber Mop
Mop	$5-$7.50	$12-$17.50
Handle	$6-$11	$10-$16
Head	N/A	$26-$34
Mops used per employee per shift	3-4	22
Chemical usage per eight-hour shift per employee	10 ounces	one-half ounce
Rooms cleaned per employee per shift (other duties also assigned)	20	22
Water usage per employee per shift	20 gallons	1 gallon
Frequency of disgarding soiled mop water and/or replacing fresh water	every three rooms	every 22 rooms
Laundering/load	6-8 pieces	25 pieces

This table is based on: a 22-room unit including med room, day room, treatment room etc; a water change for cotton loop mop of once for every three rooms; utilization of a half-ounce of cleaning solution per gallon dilution ratio. Laundering is based on a standard 12- pound to 15-pound dry weight non-commercial washing machine. Cost may vary depending upon source and quantity purchasing discounts.

To promote acceptance of this new technology, consider placing an article in the hospital monthly publication, or enlist the assistance of department heads to secure some poster space. Informing the customers of the new product will help the transition phase. Informed employees will be more likely to support the program and enlist others.

Identifying the right person to start phasing in this new system may be one of the most critical steps. Find out who is sincerely interested in the product and make them part of

the implementation. With buy-in from staff, the opportunity for success is greater. Change can be difficult especially for front-line staff. Look to someone who is outspoken and somewhat of a leader among the front-line staff. Assure that you meet with key staff members, explain the program in detail, the importance of making the program successful and any difficulties that may present themselves. Incorporating these steps may help you avoid some unnecessary delays. Remember, microfiber may or may not be the best program for every facility.



Develop a program Gantt Chart to graphically display the time relationships to the implementation steps. Upon completion of the Gantt Chart, you will be able to see the minimum total time required for the project, the proper sequence of implementation steps and which process steps can be simultaneously performed. A well-planned implementation is crucial to the success. Table 3 illustrates an example of a Gantt Chart.

Infection Control Advantage

How much more sanitary is it to use a fresh mop for each room? Can you imagine the impact on your infection control initiatives? Reducing the risk of nosocomial infections in hospitals is of utmost importance. According to the Centers for Disease Control and Prevention (CDC), there are an estimated 2 million incidences related to nosocomial infections annually. There are 80,000 deaths from nosocomial infections annually; 20,000 occur in the United States alone. The costs per year for nosocomial infections since 1992 is in excess of $4.5 billion, according to the CDC. How about the reduced risk of infection for your staff? The literature currently documents that reducing the nosocomial infection rate is supported by the utilization of a new mop head for use in each patient room. From a cleaning perspective, something as simple as always having clean water in the bucket is also more appealing to staff, patients, and visitors.

Housekeeping staff must utilize personal protective equipment (PPE), such as rubber gloves, masks, and gowns while performing duties. Reducing the frequency of touching soiled mop heads can further reduce the risk of exposure and cross contamination.

Environmental Impact

Clean-water usage is reduced and less soiled water is put into the waste stream. With the microfiber mopping system, you prepare your water once — one gallon of water per

cleaning cycle per 22 rooms. The noise pollution from wringing out a mop is virtually eliminated, which is less disruptive to patients and staff. The durability of the microfiber mop will result in a decrease in solid waste from worn-out cotton loop mops. Less wear and tear on the mop buckets will also increase their useful life.

Ergonomic Implications

A research of the body of knowledge which has accumulated on this technology, as well as in more than 49,000 Web site references on microfibers, on this technology supports the argument that, if used according to manufacturer's guidelines, microfiber mops can contribute to the overall decrease in employee injuries. From a risk-management perspective, this one factor warrants further consideration in deciding if a microfiber mopping system is the right choice for your facility.

Employee Benefits

Be sure to orient staff to the benefits of the new product. Lifting heavy mops as well as the cumbersome job of constantly changing mop water are very tiresome. At the end of the day, employees should experience less exhaustion due to reduced lifting using microfiber mops. Discuss microfiber mops at your employee meetings and during safety meetings. Be sure to distribute copies of articles about the product and successes as they occur.

After implementation, be sure to communicate with housekeeping employees on how the new technology is working out. The robust dialogue between employees will help them adjust to the change in technology. Housekeeping staff will be impressed with the one-time cleaning solution preparation, as compared to eight to 10 exchanges per shift, as well as not utilizing the bulky wringers. The mop bucket for microfiber mops only requires a one-gallon capacity as compared to a cotton-loop mop that requires three gallons or more. The cotton-loop mop bucket requires a heavier construction (heavier weight) as compared to the bucket for microfiber mops. Ask for testimonials from employees; some of the comments we heard from frontline staff were, "I can go home at the end of the day pain-free!" and "I cannot believe how easy it really is."

Economic Gains

Cost savings can be quite substantial, considering that a single 100- percent microfiber mop will last up to 500 launderings. Some manufacturers claim as many as 750 lifetime washes. When was the last time a cotton-loop mop lasted 16 to 24 months? Consider yourself lucky if your cotton mops make it through two months before replacement is necessary. According to a project by the Lowell Center for Sustainable Production, University of Massachusetts Lowell, microfiber mops last "about 10 times as long as a loop mop." In addition to the wear from daily use, cotton mops are also susceptible to damage during laundering. Since there are no loops on microfiber mops, nothing gets caught on an agitator, reducing wear and tear on both mops and agitator. More microfiber mops can be washed each laundering cycle, thus reducing laundry detergent and

associated chemical usage. It is estimated that the chemical savings (by volume) is 95 percent and water savings (by volume) is also 95 percent.

The cost benefit of reducing injuries and improved cleaning techniques should not be discounted. Additional savings can be generated by setting up an in-house microfiber mop laundering program. Microfiber mops do not have to be laundered in commercial washing machines or with commercial grade detergents. In fact, life expectancy can actually be decreased through commercial laundering. Look for opportunities to launder your own microfiber mops. The estimated net savings on using a microfiber mop in place of a cotton-loop mop exceeds $35 per 100 rooms cleaned.

Old Mops Die Hard

As you can probably imagine, not all personnel will embrace the new technology as readily as others. Critical to the program's overall success is continually supporting and training on the process. Old mops die hard; do not be too anxious to rid yourself of all your looped-end mops. These mops will still be necessary to strip and wax floors as well as bulk cleaning of infectious matter. Holding supervisors accountable for implementing the program is a necessary step to ensure compliance. Eventually, even the most resistant staff will realize the benefits of the microfiber mop system. Amazingly, you may find that the most resistant staff will become your greatest supporters once they experience the new process.

In today's changing healthcare environment, managers need to continually seek out new and innovative ways of doing business. Microfibers are one of those innovations that may very well be the floor-care process of choice for hospitals in the near future.

David Polonsky CHESP, is the director of environmental services and J. Douglas Roill, Dr.Mgt, MS, RD, CHESP, is the general manager of hospitality services at Arizona State Hospital, a Sodexho Healthcare-managed account in Phoenix. Both are certified healthcare environmental services professionals (CHESP) and a members of the American Society for Healthcare Environmental Services (ASHES).