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Learning Objectives:

1. *Proper usage techniques of microfiber mop cleaning.*
2. *Complete a cost benefit analysis for your facility.*
3. *Identify nosocomial infection reduction opportunities.*
4. *Learn to use a Gantt chart to facilitate implementation.*

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Should you microfiber?

By David Polonsky, CHESP

Whether you are an infection control officer, 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 that 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 that 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% - 14% 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 (1) and two (2) bucket cotton mop process that has been the industry standard for over 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 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 by District Manager, Douglas Cottingham and company wide. 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 rate in any hospital. Next and equally as important was the employee safety. Based on a 22 bed unit, employees have to wring out cotton mops over 75 times per shift. The process of using a heavy cotton loop mop is also strenuous. Utilizing the microfiber mops can reduce the potential for back, shoulder, and elbow injury.

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, it is densely constructed nylon fibers that are 1/16th the size of a human hair. Due to the small size and density, these

Table 1

	Cotton Loop Mopping System	Microfiber Mop Head System
Number of times wringing out mop per shift, utilizing mop bucket wringer	30	0*
Number of times a water change is required per shift	7	0
Number of mops used per shift	3-4**	22
Life Expectancy of a Mop Head	1.6 months	16 months
Inventory Levels	16	75

The above 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 cotton mop 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 (1) cotton loop mop utilized per eight (8) hour shift. (*Environmental Best Practices for Health Care Facilities*, November 2002.)

fibers are able to hold up to six times its 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 floor cleaning process.

Microfiber vs. Cotton

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

Here is 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 1 gal depending on the capacity of the bucket).
- Remove one mop, wring out the excess solution back into the bucket with a twist of the wrist.
- Place the micro fiber mop flat on the floor with the Velcro side facing up.
- Place the mop frame (head) directly onto the micro fiber 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.

Table 2 - Cost Benefit Analysis

	Cotton Loop Mopping System	Microfiber Mop Head System
Mop	\$5.00 - \$7.50	\$12.00 - \$17.50
Handle	\$6.00 - \$11.00	\$10.00 - \$16.00
Head	N/A	\$26.00 - \$34.00
Mops used per employee per shift	3-4	22
Chemical Usage per eight (8) hour shift per employee	10 oz	½ oz.
Rooms cleaned per employee per shift (other duties also assigned)	20	22
Water Usage per employee per shift	20 Gallons	1 Gallon
Frequency of discarding soiled mop water and/or replacing fresh waterrooms	Every three (3) rooms	Every twenty-two (22) rooms
Laundrying/load	6-8 pieces	25 pieces

The above 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 cotton mop system. Inventory levels factor in mops in use, soiled mops, and mops in process of being cleaned.

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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.

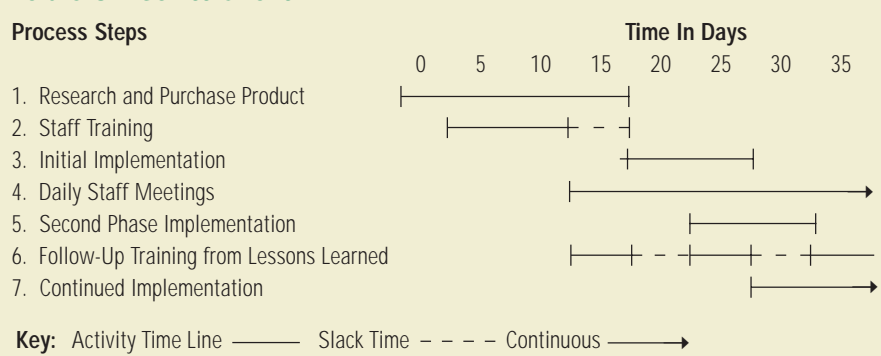
To promote acceptance of this new technology, consider placing an article in the hospital monthly publication, or enlist the assistance of Department Heads to secure some poster space. Informing the customers of the new product will help the transition phase. Informed employees will be more likely to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

Identifying the right person to start phasing in this new system may very well 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 out implementation is crucial to the success. **Table #3** illustrates an example of a Gantt Chart.

Table 3 - Gantt Chart



See SELF-STUDY SERIES on page 42

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 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 are in excess of \$4.5 billion (CDC). How about the reduced risk of infection for your staff? Literature currently documents that reducing the nosocomial infection rate is supported with the utilization of a new mop head 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 utilize PPE, such as rubber gloves, masks, and gowns while performing duties. Reducing the frequency of touching a soiled mop head 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 seen in professional publications as well as over 49,000 web references on microfibers contribute to supporting 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 cum-

bersome 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 8-10 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 one 100% 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 (2) months before replacement is necessary. According to a project by the Lowell Center for Sustainable Production, University of Massachusetts Lowell, microfiber mops last "about ten 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% and water savings (by volume) is also 95%. 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 opportuni-

ties to launder your own microfiber mops. The estimated net savings on using a microfiber mop in place of a cotton loop mop exceeds \$35.00 per 100 rooms cleaned.

Old Mops Die Hard

As you can probably imagine, not all staff 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 health care 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. Let's hope that the next 100 years of floor care continues to bring us equally innovative solutions. HPN

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Both are AHA, Certified Healthcare Environmental Services Professionals, (CHESPs) and are members of the American Society for Healthcare Environmental Services (ASHES).

For membership information please contact ASHES. Please visit www.ashes.org, contact us at 312-422-3860 or via email at ashes@aha.org

If you are interested or have any questions on the microfiber process please feel free to contact David Polonsky at (602) 220-6303. Additional information may also be found by contacting the following manufacturers.

NILFISK-ADVANCE: www.nilfisk-advance.com, phone: 800-989-2235

RUBBERMAID: www.rubbermaidcommercial.com, phone: 800-347-9800

Test Answers	1. E
	2. B
	3. A
	4. E
	5. B
	6. A
	7. A
	8. B
	9. C
	10. A

CONTINUING EDUCATION TEST — MAY 2004

Microfiber Mops versus Traditional Cotton Loop Mops

Circle the one correct answer

1. Which of the following is an advantage of using microfiber mops over cotton loop mops?
 - A. Microfiber mops clean better than cotton loop mops.
 - B. Reduced potential for back, shoulder and elbow injury.
 - C. Reduced amount of cleaning solution and water.
 - D. Reduced risk of nosocomial infections.
 - E. All of the above.
2. Due to the small size and density of microfibers, microfiber mops are less absorbent than cotton loop mops.
 - A. True
 - B. False
3. Microfibers are positively charged to attract dirt and other particles.
 - A. True
 - B. False
4. Cotton loop mopping systems require an average of seven water changes per shift for a 22-room unit. Which of the following is the number of times a water change is required per shift with a microfiber mop head system?
 - A. Ten
 - B. Three
 - C. Five
 - D. One
 - E. Zero
5. When finished cleaning with a microfiber mop, what should you do with the soiled mop head?
 - A. Throw it away.
 - B. Remove it and place in a linen bag for laundering.
 - C. Place it back in the mop water to rinse.
6. Microfiber mops do not re-enter water buckets once used, so the mop water will remain clean.
 - A. True
 - B. False
7. The first step in successfully implementing a microfiber mopping program, is to complete a cost-benefit analysis.
 - A. True
 - B. False
8. Microfiber mops are recommended for bulk cleaning of infectious matter.
 - A. True
 - B. False
9. One 100% microfiber mop will last up to what number of launderings?
 - A. 50
 - B. 100
 - C. 500
 - D. 1,000
10. Enlisting the support of staff members who utilize the product is important to the implementation of a successful microfiber mopping program.
 - A. True
 - B. False

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