

Mainstream Laundry Practices Unscathed in Hospital Towel Study

Research doesn't identify washing or housekeeping techniques or recognize key protocols

“Microbial Contamination of Hospital Reusable Cleaning Towels,” published in October 2013 in the *American Journal of Infection Control*, reports on research that attempts to connect the reuse of cloth towels to greater pathogen transmission. It reports the microbial content of a small sample of laundered towels: a total of 30, three each from 10 hospitals. But the article says (emphasis added):

*“The goal of this project was to determine the effects of laundry and cleaning practices **commonly used** in hospitals for washing, storage, and disinfection of cloth cleaning towels on their microbial loads.”*

Nowhere is it indicated that these 10 facilities' practices represent those of hospitals as a whole. The article presents evidence to the contrary:

“Two hospitals sent their linens to be laundered in a central facility, and the others laundered their towels in-house.”

In a recent Modern Healthcare poll, 61 percent of healthcare administrators indicated they outsource their laundry. That's three times the representation of such laundering in the research. Because professional textile services must attract and retain customers, they are heavily incented to produce high quality. The article doesn't

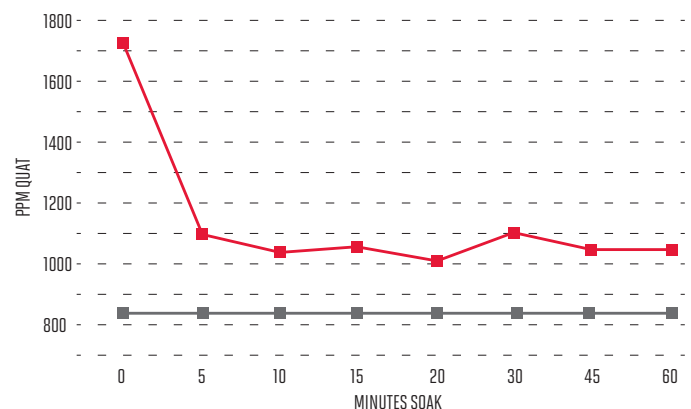
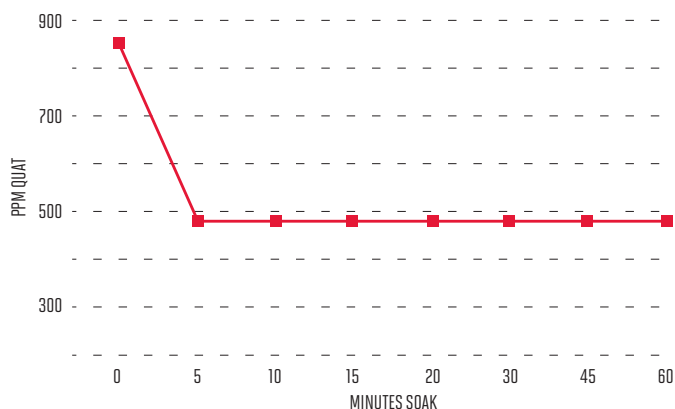
differentiate results between the outsourced and insourced laundries nor does it attempt to identify the most common washing techniques.

“All but 1 of the hospitals reported soaking their cleaning towels in a bucket with disinfectant.”

The research didn't consider how these are soaked, which contributes to wiping effectiveness. Performance can vary due to soak time, volume of disinfectant solution per wipe and fabric type. It's critical to ensure that regular use dilutions maintain an active ingredient level high enough to clean hard surfaces.

Graphs below (Ecolab) demonstrate the importance of diluting quaternary disinfectant properly and using the right amount of solution to eradicate bacteria. Assume a wiping task requires an 800 parts-per-million (ppm) disinfectant solution. At left, this level is achieved from a mix of quaternary ammonia and water in a 300-milileter container, but placing a cotton wipe in the container absorbs so much of the solution that the remaining volume drops below 500 ppm in a few minutes. In contrast, at right, a stronger solution of the same volume is mixed (achieves 1,700 ppm). When a microfiber towel is placed in the container, the solution remains strong enough for the task.

How Disinfectant Mixing, Wiper Choice Affect Performance



“In the questionnaires on cleaning and laundry practices, 8 of the 10 hospitals reported using cotton towels, and the other 2 reported using microfiber towels.”

Two factors indicated here suggest misrepresentation of industry practices. First, the authors say cleaning and laundry practices were assessed by questionnaire as opposed to any direct observation. Second, cotton is the subject hospitals’ product of choice, but hospitals are widely reported to be switching to microfiber for mopping and wiping with its superior ability to remove more contaminants by reaching into smaller crevices.

“Future studies should evaluate the potential role of cloth towels as a reservoir for nosocomial pathogens.”

In other words, this study doesn’t prove the towels are such a reservoir. Any microbes found were mostly molds and general environmental bacteria, as opposed to pathogens; neither MRSA nor Clostridium difficile (C difficile) were isolated. In towels from 7 of the 10 hospitals, total coliform bacteria were undetectable; same for 8 of the hospitals for fungi.

“It is unclear whether bacteria remain trapped in the towel fibers through the laundering process or are reintroduced through subsequent storage or handling.”

The researchers don’t blame wash formulas squarely. They admit that commonly used formulas might not be the reason that a towel ready for soaking might contain microbes. These may be in overabundance due to overuse (too much wiping for a single soaking) or inadequate disinfection (improper dilution, not enough properly diluted solution, etc.).

TRSA’s Hygienically Clean certification process requires laundries to measure microbial content of laundered textiles immediately after plant processing and before they are protected for shipping. Any microbial content found on them after this time is added at the customer’s location from handling, storage and transport there.

“Development of guidelines for reuse of cloth towels in health care environments should be considered as part of the larger picture of medical institution cleaning.”

This is nothing new. Professional launderers have long worked with hospital administrative, environmental services and infection control personnel to monitor the useful life of linens and towels. As the primary advocate for textile services professionalism and provider of Hygienically Clean certification, TRSA continues to foster best management practices and quality control. Communication at the grassroots level (between TRSA members and their

customers) and at a bird’s-eye-view (between TRSA leaders and their healthcare industry contemporaries) ensures the correct use of reusable textiles maximizes medical facility hygiene to protect patients and caregivers.

Life Cycle Assessment Verifies Reusable Textiles’ Superior Sustainability

Building on the long history of reusable textiles as the better option for wiping effectiveness compared with their disposable product equivalents, TRSA has confirmed they are also the worthier choice for maximum resource conservation and minimum environmental impact. Our Comparative Life Cycle Assessment of Reusable vs. Disposable Textiles study reinforces this conclusion through a number of key measures. The LCA assesses the green virtues of the two product types from the harvesting of raw materials to make them through their manufacturing, transport, industrial and consumer use and final disposal.

The assessment of healthcare textiles in the LCA found that reusables require significantly less fossil fuel to produce and service:

- 91% less crude oil
- 83% less coal
- 71% less natural gas

Discharges to the atmosphere from reusable use are also fewer:

- 77% less carbon monoxide
- 73% less carbon dioxide

LCA measures calculated from a variety of resource and emission impacts further reflect reusables’ greener performance:

- 84% less eutrophication: runoff of nitrous and phosphate into fresh water
- 79% less primary demand for all kinds of energy
- 76% less acidification of soils and watercourses from leachate and acid rain
- 72% less global warming from greenhouse gas emissions
- 71% less smog
- 37% less ozone depletion

With the average patient generating 15 pounds of waste per day, hospitals need alternatives to single-use disposable items. Reusable textiles achieve this goal while enhancing environmental quality, contributing to healthcare cost control and improving patient and employee satisfaction.