







# Reusable vs. Disposable Microfiber

PLAYBOOK



# Agenda

-  Summary and Overview
-  Client Personas
-  Fact Check
-  Appendices/Clinical Support

# Summary

- Reusables and disposable Microfiber Cleaning Products can and do have vast differences.
- Reusable technology is superior to disposable, providing optimum performance and cleaning capabilities.
- Infection Preventions/EVS standards demand ultimate efficacy.
- Both reusable and disposable provide are ubiquitous, however when evaluating cost, environmental impact, efficacy, reusables stand alone.



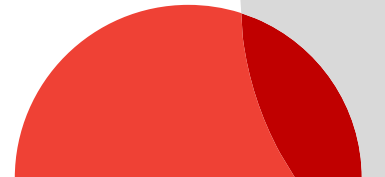
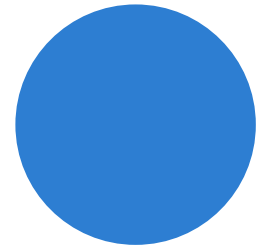
# Summary

- Both are readily available in the market today.
- Studies demonstrate that reusable microfiber cleaning products are superior.
- Disposable microfiber products require more units per room, end up in a landfill, or are incinerated, while reusables end up back at the Laundry to be washed for additional use creating more environmental benefit.

## Environmental benefit:

- 1 reusable mop replaces 2.3 disposable mops
- 1 reusable wiper replaces 2.5 disposable wipers
- Average use cycles:
  - Mops: ~49
  - Wipers: ~30
- Source: Environmental Clarity - Economic Assessment of Annual Costs of Reusable vs. Disposable Microfiber

# Client Personas





**TAYLOR**

The Influencer

---

Infection Prevention  
Nursing

EVS

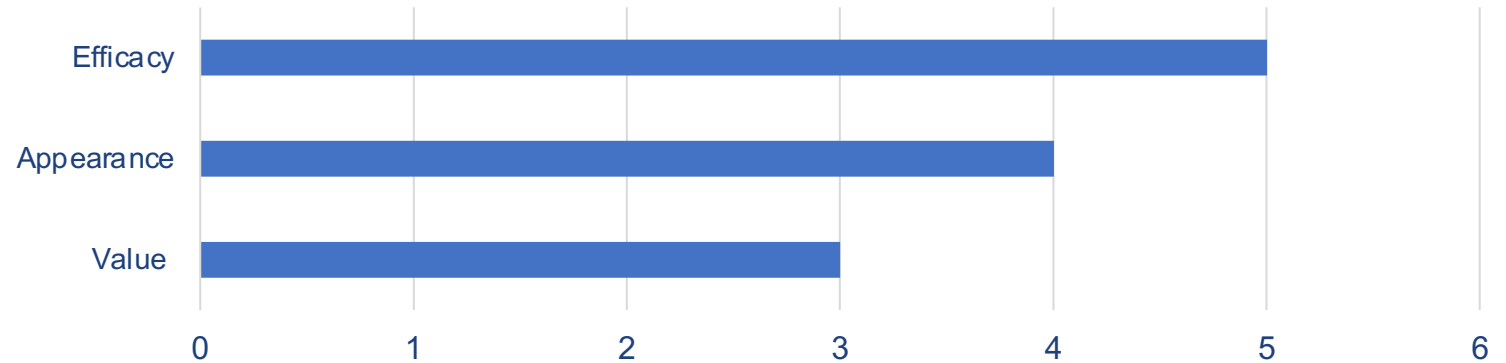
## Likes

- HAI reductions
- Superior Cleaning Ability
- Time – Labor Savings
- VALUE
- Expediency
- Water/Chemical reduction

## Dislikes

- Proper training /technique required
- Inventory Level
- Availability

## Main Focus



# Talking Points

Reusable microfiber mops are proven to offer superior cleaning of all hard surfaces and improve the protocol of healthcare facilities.



As training, technology programs has advanced, the overall cleanliness of healthcare facilities continues to improve.

Studies have proven that Reusable Microfiber costs less and eliminate the excess waste and expense of disposables

# Fact Check



A controlled laboratory study compared multiple microfiber cloths including a disposable option against reusable versions and found **that the disposable microfiber performed worse** than other microfiber cloths in removing MRSA, *C. difficile* spores, and *E. coli* from surfaces under controlled conditions.

## Objection:

Disposable Non-Woven Microfiber cleans as effectively as re-usable.

*Disposable microfiber did **not** outperform reusable microfiber in this study — its cleaning performance was notably inferior in microbial removal.*

# Fact Check

## Objection:

Reusable Microfiber costs significantly more than Disposable.



Reusables offer up to **91% annual cost savings**.

Disposable use is **2.3x–2.5x higher** per patient room.

Reusables significantly reduce **environmental impact**.

Greater cleaning effectiveness with **bicomponent microfiber**.

*Over **20 independent studies** confirm lower environmental impact of reusables. Reusables meet **CDC laundering guidelines**. Reusables align with **healthcare circular economy** and sustainability goals.*

# Fact Check



**Quat binding** (also called **quat absorption**) is a phenomenon that reduces the effectiveness of disinfectants containing **quaternary ammonium compounds** (“quats”).

## Objection:

Disposable Microfiber is immune to “Quat-Binding”.

*Quaternary ammonium compounds (quats) can bind to cotton cloths impacting the disinfectant's efficacy. For this reason, microfiber cloths are recommended when using liquid disinfectants such as dilutables, ready-to-use sprays or pull top solutions.*



**ALEX**

The Decision Maker

---

Purchasing / Materials  
Management

OR Clinical Manager

Finance

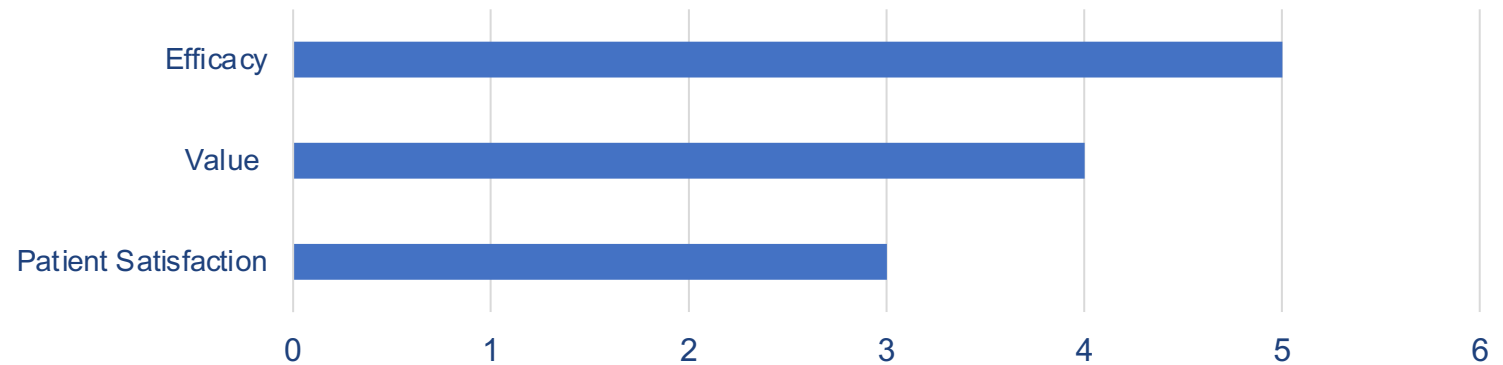
## Likes

- Efficacy
- Easy to use
- Distribution/Storage Optimization
- Labor Savings
- Efficiencies
- Value

## Dislikes

- Consumption (Units used / Proper Use)
- Storage
- Labor Requirements
- Procurement Costs
- Consumption (Units used / Proper Use)
- Storage
- Waste Management

## Main Focus



# Talking Points

**Reusable microfiber cloths consistently outperformed the disposable microfiber cloth** in removing clinically relevant pathogens, including MRSA, E. coli, and C. difficile spores



**The disposable microfiber cloth demonstrated notably worse cleaning performance** compared to all nine reusable microfiber cloths tested under identical laboratory conditions

**All reusable microfiber cloths achieved comparable microbial reductions**, with differences of less than 1 log<sub>10</sub> between products, indicating **reliable and repeatable performance across reusable designs**

# Fact Check



Reusables offer up to 91% annual cost savings.  
Disposable use is 2.3x–2.5x higher per patient room.

## Objection:

Reusable Microfiber Costs More than  
Disposable.

*Even at a 1:1 ration, disposable  
mops are 330% more expensive  
and wipers are 400% more  
expensive than Reusables.*

# Fact Check

## Objection:

Reusable Microfiber has a greater environmental impact.

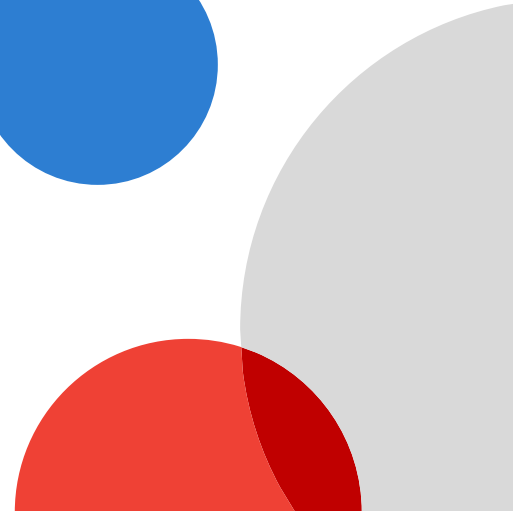
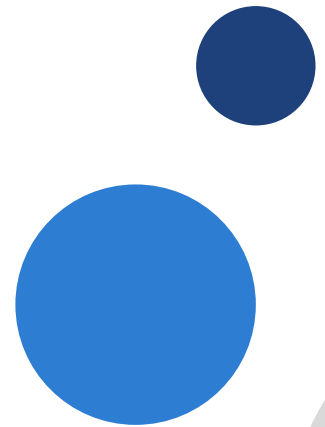


Over **20 independent studies** confirm lower environmental impact of reusables.

Reusables significantly reduce environmental impact and create strong support for sustainable healthcare operations

*Reusable Microfiber aligns with **circular economy** and sustainability goals. Hospitals can confidently justify switch based on documented data.*

# Appendices



# References & Links

- **Appendix 1:** [https://drive.google.com/file/d/1HAK7JdaYiGar0Y-8mS4q-W9jNqcXEwQu/view?usp=drive\\_link](https://drive.google.com/file/d/1HAK7JdaYiGar0Y-8mS4q-W9jNqcXEwQu/view?usp=drive_link)
- **Appendix 2:** [https://drive.google.com/file/d/15WwzGYcv0a7ii2tcjQe6npmk2HDJ\\_iPv/view?usp=drive\\_link](https://drive.google.com/file/d/15WwzGYcv0a7ii2tcjQe6npmk2HDJ_iPv/view?usp=drive_link)
- **Appendix 3:** [https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.healthcarefacilitiestoday.com%2fposts%2fPreventing-Quat-Binding-in-Healthcare-Facilities--29230&c=E,1,F1q5mr2QG9-90slzMdO4EiMeNL\\_CRPh5aoLcc1AW9uq6VtZuM2h1vjeLpeKP660Puz1y1Ql6oxuVYmA-AUa5qwSKrhZE5V-qV](https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.healthcarefacilitiestoday.com%2fposts%2fPreventing-Quat-Binding-in-Healthcare-Facilities--29230&c=E,1,F1q5mr2QG9-90slzMdO4EiMeNL_CRPh5aoLcc1AW9uq6VtZuM2h1vjeLpeKP660Puz1y1Ql6oxuVYmA-AUa5qwSKrhZE5V-qV)

# Appendix 1

## Assessing the efficacy of different microfibre cloths at removing surface micro-organisms associated with healthcare-associated infections



ELSEVIER



### Assessing the efficacy of different microfibre cloths at removing surface micro-organisms associated with healthcare-associated infections<sup>☆</sup>

D.L. Smith<sup>a,\*</sup>, S. Gillanders<sup>b</sup>, J.T. Holah<sup>a</sup>, C. Gush<sup>c</sup>

<sup>a</sup> Campden BRI, Department of Food Hygiene, Chipping Campden, Gloucestershire, UK

<sup>b</sup> Centre for Evidence-based Purchasing, NHS Purchasing and Supply Agency, London, UK

<sup>c</sup> Department of Health, London, UK

#### ARTICLE INFO

**Article history:**  
Received 27 September 2010  
Accepted 25 February 2011  
by S.J. Dancer  
Available online 17 April 2011

**Keywords:**  
Cleaning  
Healthcare-associated infection  
Microfibre

#### SUMMARY

This study investigated the ability of 10 different microfibre cloths to remove microbial contamination from three surfaces commonly found in hospital settings (stainless steel, furniture laminate and ceramic tile), under controlled laboratory conditions. Tests were conducted using organisms known to cause healthcare-associated infections, i.e. methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (in spore form) and *Escherichia coli*. For all the cloths tested, there was significant statistical evidence to suggest a difference in cleaning performance between them on first and single use ( $P < 0.001$ ). However, the overall performance of the nine re-useable cloths did not differ in practice with differences in  $\log_{10}$  reductions of  $< 1$ . The performance of the disposable microfibre cloth was notably worse. The performance of all cloths decreased with repeated use on a succession of contaminated surfaces. After repeated washing, re-useable cloth performance improved at 75 washes, and reduced after 150 washes, although, in most instances, performance after 150 washes was better than at first wash. For all cloths, price was not an indication of performance. Based on these laboratory findings, it is concluded that use of the microfibre cloths investigated is an effective way to reduce the levels of MRSA, *E. coli* and *C. difficile* (in spore form) on a range of surfaces found in the clinical environment and could therefore be of benefit to these environments.

© 2011 The Healthcare Infection Society. Published by Elsevier Ltd. All rights reserved.

#### Introduction

Many hospitals now use microfibre cloths as part of their cleaning regime. The cloths use small volumes of water, do not require the addition of detergents or biocides, and remove particles by a combination of capillary action and static attraction.<sup>1</sup>

The cleaning performance of microfibre cloths has been investigated previously by a number of researchers.<sup>2,3</sup> Moore and Griffith concluded that 'different makes of microfibre cloth have different

characteristics, and the name 'microfibre' should not imply superior cleaning efficacy'.<sup>3</sup>

A number of different microfibre cloths are available for use in the clinical environment, varying in price and the number of times they can be washed and re-used (up to 500 times). This study aimed to assess the cleaning performance (in terms of microbial removal) of 10 microfibre cloths, including four currently available through the National Health Service (NHS) Supply Chain, under controlled laboratory conditions. The study investigated the automated cleaning of three different surfaces commonly found in hospital settings contaminated with organisms associated with healthcare-associated infections.

#### Methods

Prior to use, all re-useable microfibre cloths were washed once using an Electrolux W455H, Compass Control washing machine (Electrolux, Luton, UK). Cloths were washed according to Health

<sup>☆</sup> Findings presented in part at the Association of Healthcare Cleaning Professionals Annual Conference, Glasgow, UK, 2009; and as a poster at Food Factory of the Future, Gothenburg, Sweden, 2010, and International Association for Food Protection Annual Conference, California, USA, 2010.

\* Corresponding author. Address: Campden BRI, Department of Food Hygiene, Chipping Campden, Gloucestershire GL55 6LD, UK. Tel.: +44 (0) 1386 842204; fax: +44 (0) 1386 842100.

E-mail address: [d.l.smith@campden.co.uk](mailto:d.l.smith@campden.co.uk) (D.L. Smith).

# Appendix 1

## Study Findings

Bullet Points Supporting Reusable  
Microfiber Products

Reusable microfiber cloths consistently outperformed the disposable microfiber cloth in removing clinically relevant pathogens, including MRSA, E. coli, and C. difficile spores

The disposable microfiber cloth demonstrated notably worse cleaning performance compared to all nine reusable microfiber cloths tested under identical laboratory conditions

All reusable microfiber cloths achieved comparable microbial reductions, with differences of less than  $1 \log_{10}$  between products, indicating reliable and repeatable performance across reusable designs

Statistically significant differences in performance were observed between cloth types ( $P < 0.001$ ), reinforcing that material construction matters, not simply whether a cloth is labeled “microfiber”

# Appendix 1

## Study Findings

Bullet Points Supporting Reusable  
Microfiber Products

The study challenges assumptions that disposable products are inherently safer or more effective, showing that single-use microfiber does not guarantee superior infection control outcomes

Reusable microfiber demonstrated effective microbial removal on first use, supporting its suitability for controlled reuse when proper laundering protocols are followed

Performance degradation occurred with repeated use across all cloth types, underscoring the importance of defined laundering, replacement, and lifecycle management programs — an area where healthcare laundries can exert strong control



# Appendix 1

## Study Findings

Operational Takeaway (Especially  
Relevant to Laundry & EVS Leadership)

This study provides peer-reviewed evidence that reusable microfiber can equal or exceed disposable microfiber in microbial removal, when supported by validated laundry and process controls.

It reinforces the concept that infection prevention outcomes are process-driven, not disposable-driven — aligning well with healthcare laundry best practices, accreditation standards, and sustainability goals.

# Appendix 2

## Economic Assessment of Annual Costs of Microfiber Flat Mops and Wipers

### ECONOMIC ASSESSMENT OF ANNUAL COSTS OF MICROFIBER FLAT MOPS AND WIPERS

REUSABLE VS. DISPOSABLE

**COST IMPACT: REUSABLES VS. DISPOSABLES**

The annual cost savings of reusables are  
80-90%  
 meaning the selection of disposables will lead to a  
500% - 1,000%  
 greater annual cost to the hospital if disposables are selected.  
\*This is based on the survey of 79 hospitals.

**RESULTS**

Single U.S. disposable mop has a cost of  
\$0.90  
 while the wiper was  
\$0.36

**DISPOSABLE MOPS VS. REUSABLE MOPS**

Head-to-head, disposable mops are over  
330%  
 more expensive than reusables over the life cycle of the product.

Disposable wipers are  
400%  
 higher.

Annual cost savings jumped to  
91%  
 when adopting reusables in greater quantities in health care systems. Therefore selecting disposables incurs about a  
1,100%  
 higher annual cost.

**COST SAVINGS FROM SELECTING RESUABLES**

	Microfiber Flat Mops 1 disp: 1 reus	Microfiber Flat Mops 2.5 disp: 1 reus	Microfiber Wipers 1 disp: 1 reus	Microfiber Wipers 2.3 disp: 1 reus
Cost savings across industry (based on total costs across all hospitals)	77	91	80	91
Number of cycles for each new across industry (total uses/total new items)	49	49	30	30

The American Reusable Textile Association (ARTA) mission is to promote greater appreciation for reusable textiles.  
[www.arta1.com](http://www.arta1.com)

# Appendix 2

## ARTA LCA Findings

**1 reusable mop  $\approx$  2.3 disposable mops**

**1 reusable wiper  $\approx$  2.5 disposable wipers**

**Average use cycles:** Mops:  $\sim$ 49 / Wipers:  $\sim$ 30

Over **20 independent studies** confirm lower environmental impact of reusables.

Reusables meet **CDC laundering guidelines**.

Aligns with **circular economy** and sustainability goals.

Reusables offer **up to 91% annual cost savings**.

Disposable use is **2.3x–2.5x higher** per patient room.

Reusables significantly reduce **environmental impact**.

Greater cleaning effectiveness **with bicomponent (reusable) microfiber**.

# Appendix 3

## Preventing Quat Binding in Healthcare Facilities

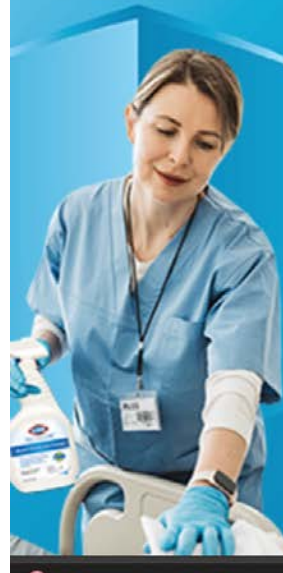
[Visit Website](#)



PROTECTING WITH PURPOSE

Clorox Healthcare shares your mission to defeat HAIs.

[Learn More](#)



### Is quat binding an issue in healthcare facilities and how can EVS teams prevent it?

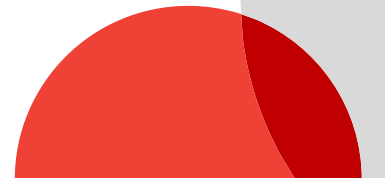
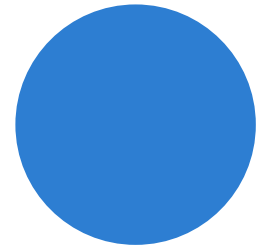
“Quaternary ammonium compounds (quats) can bind to cotton cloths impacting the disinfectant’s efficacy. For this reason, microfiber cloths are recommended when using [liquid disinfectants](#) such as dilutables, ready-to-use sprays or pull top solutions.

It’s important to note microfiber cloths must be laundered following specific guidelines including laundering separately from other items to [maintain their efficacy](#). Additionally, the lifespan of microfiber cloths is finite, and it is very difficult to track the number of launderings of individual cloths. EVS teams can avoid this issue by using ready-to-use (RTU) disposable disinfecting wipes. Not only is the issue of quat binding resolved but dilution errors are a non-issue with RTU disinfecting products.”

— *Doe Kley, infection prevention fellow, Clorox Healthcare’s Clinical and Scientific Affairs Team*

“Quat binding refers to a phenomenon that affects the effectiveness of certain disinfectants, particularly those containing quaternary ammonium chloride, or ‘quats’. Quats are commonly used in disinfectants because they’re effective against a wide range of germs.

# Clinical Support



# Using Microfiber Mops in Hospitals, Environmental Best Practices for Health Care Facilities

US EPA ARCHIVE DOCUMENT



## Using Microfiber Mops in Hospitals

Environmental Best Practices for Health Care Facilities | November 2002

JCAHO Environment of Care Standards 1.3, 2.3, 4.0

### Why Consider Alternative Mopping Techniques?

Using conventional loop mops for wet mopping of patient care areas has long been the standard in floor cleaning for janitorial operations in hospitals. However, the health care industry has taken a recent interest in evaluating hard floor maintenance techniques in terms of employee, patient, and environmental health. Many floor cleaners used in hospitals contain harsh chemicals such as quaternary ammonium chlorides and butoxyethanol, which can be harmful to human health and the environment. To reduce the risk of cross-contamination for patients, conventional mopping techniques require janitors to change the cleaning solution after mopping every two or three rooms—meaning that cleaning solutions (including both chemicals and several gallons of water) are constantly being disposed of and replenished.

Some facilities have begun using a new mopping technique involving microfiber materials to clean floors. Microfibers are densely constructed, polyester and polyamide (nylon) fibers that are approximately 1/16 the thickness of a human hair. The density of the material enables it to hold six times its weight in water, making it more absorbent than a conventional, cotton loop mop. Also, the positively charged microfibers attract dust (which has a negative charge), and the tiny fibers are able to penetrate the microscopic surface pores of most flooring materials. These characteristics make microfiber an effective mopping material; the following case study provides detailed information to help your hospital evaluate the possibility of using microfiber mops.

### case study | Mopping Up Savings at UC Davis

The University of California Davis Medical Center (UCDMC) in Sacramento, CA, had three motivations for changing the way its custodial staff maintained the floors in patient care areas:

- Large, heavy mop
- Requires frequent of cleaning solution
- High chemical use
- Labor intensive



Conventional Wet

VS.

Microfiber Mops

- Light and ergonomic
- Prevents dirty mop heads from contaminating cleaning solution
- Dense, durable fibers reach into surface pores
- Cost effective

