Making the Case for the Use of Reusable Wipers In the Healthcare Setting

A WHITE PAPER

INTERVENTION

umf Corporation

Part of the Intervention Series

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This *umf* Corporation White Paper seeks to make the case specifically for the commonsense use of reusable high performance wipers in the healthcare setting. By high performance we refer to durable wipers that have demonstrated through third-party laboratory testing the ability to remove virtually everything from an environmental surface that is capable of being removed, including organic soil and endotoxins released when bacteria are killed using a disinfectant. Our focus is on the benefits and justification for using a high performance "microfiber" reusable wiper compared with a ready-to-use disposable wiper (RTU). In this White Paper:

- We'll begin by looking at the big picture: the differing opinions in the reusable vs. disposable debate regarding the use of wipers in the hospital setting.
- We'll examine the impact of disposables on the environment and why reusables are more eco-friendly.
- We'll scrutinize a controversial study of microfiber and cotton cloths used to clean hospital rooms, which found that "the very tools being used to wipe germs away could be spreading them around."
- We'll look at what the experts have to say regarding current laundry processes, and whether they're sufficient to interrupt the transmission of pathogens.
- We'll look at the typical "Wiper Cycle," which normally includes the use of a hospital-approved EPA-registered hospital-grade disinfectant.

> "Outbreaks of infectious diseases associated with laundered HCTs are extremely rare; only 12 such outbreaks have been reported worldwide in the past 43 years."
>
> *Lynne M. Sehulster, PhD / CDC*

- We'll compare the costs of disposable products vs. reusable laundered products.
- And, finally, we'll provide guidelines for the proper use of reusable wipes by Environmental Services (ES) staff when processing a patient room and other areas.

Abstract – Much has been written about two studies[1, 2] that have been published over the past few years that have focused attention on the possibility that reusable wipers (of any kind) may recontaminate a patient room – *"the very tools being used to wipe germs away could be spreading them around"*[3] – with bacteria that cause healthcare-associated infections (HAIs). This, despite numerous studies to the contrary that have concluded that "current infection prevention strategies for laundering and handling healthcare textiles (HCTs) appear to be adequate in preventing HAIs, provided that every step is taken to maintain the hygienic quality of HCT prior to use."[4]

Studies relating to the use of disposable RTU wipers in the healthcare setting NEVER discuss the high cost of use

The Issue –The case against reusable wipers (as described in the aforementioned studies) is part of a larger, recent trend that has been called the "disposable mindset"[5] of many in healthcare that disposable products are preferable to reusable HCT products (reusable meaning everything that's reusable: infection prevention wipers and flat mops, sheets, towels, bed pads, patient and surgical gowns, even cubicle curtains, to mention but a few). Regrettably, the "disposable mindset" is driven more by convenience rather than performance.

There's a certain irony in the fact that manufacturers continue to introduce new disposable products in every category when virtually all businesses, including healthcare, are extolling the benefits of sustainable "green" solutions and are exclaiming their desire to adopt these solutions, including the reduction of chemicals and burdens on the waste stream. Organizations like the Sustainability Roadmap for Hospitals (AHA), Healthcare Without Harm and Practice Greenhealth have grown in membership promoting sustainable solutions.

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1 "Microbial contamination of hospital reusable cleaning towels," Sifuentes, Gerba et al. (October 2013), American Journal of Infection Control

2 "Decreased activity of commercially available disinfectants containing quaternary ammonium compounds when exposed to cotton towels," Sifuentes, Gerba et al. (October 2013), American Journal of Infection Control

3 "Study on Laundered Towels Finds E. Coli, Tetanus," by Ronnie Garrett, Sanitary Maintenance, Feb. 19, 2014

4 "Healthcare Laundry and Textiles in the United States: Review and Commentary on Contemporary Infection Issues," Lynne M. Sehulster (June 2015), Infection Control and Hospital Epidemiology

5 "Holding Textile Laundering to a Higher Standard," by John Scherberger, Health Facilities Management, Aug. 18. 2016

There exist several notable efforts to reverse this disposable trend through education and increased awareness. And numerous studies, most notably the "Comparative Life Cycle Assessment of Reusable vs. Disposable Textiles,"[6] have concluded that: for wipers, reusables appear to have a clear environmental benefit compared with the disposable products analyzed, and that reusable textiles were found to have the lowest impact on the environment. What is noteworthy here is that this study compared a onetime-use disposable compared with a cotton/polyester-blended reusable wiper based on 12 cycles laundered with water washing at industrial laundries. It would not be unreasonable to assume that a durable high performance "microfiber" wiper would have a useful life of 10 times this number of laundry cycles and, therefore, a significantly greater advantage over a disposable wiper.

Another area worth considering when evaluating disposable wipers is the lack of material performance. The disposable RTU wiper is typically a very inexpensive nonwoven material that is simply a vehicle for getting the disinfectant/chemical to the surface. These materials don't necessarily remove soil, organics or potential pathogens from the surface. All too frequently these materials do not deliver sufficient disinfectant to achieve the required dwell time, most leave residues and very few have a Clostridium difficile *(C. diff)* spore claim (see Appendix, EPA List).

Most manufacturers don't provide any information as to how much coverage a single RTU wiper is rated for – *just use more*!

Another consideration is disposal – some RTUs are wetted with disinfectants that are environmental hazards: they're toxic to birds, fish and aquatic invertebrates. Care must be taken when disposing of the wipers and containers.

Wet wipes are notorious for their impact on sewer systems, but the impact on ecosystems is also a concern. The results of the Marine Conservation Society's (MCS) study[7] found the number of wet wipes more than doubled between 2013 and 2014.

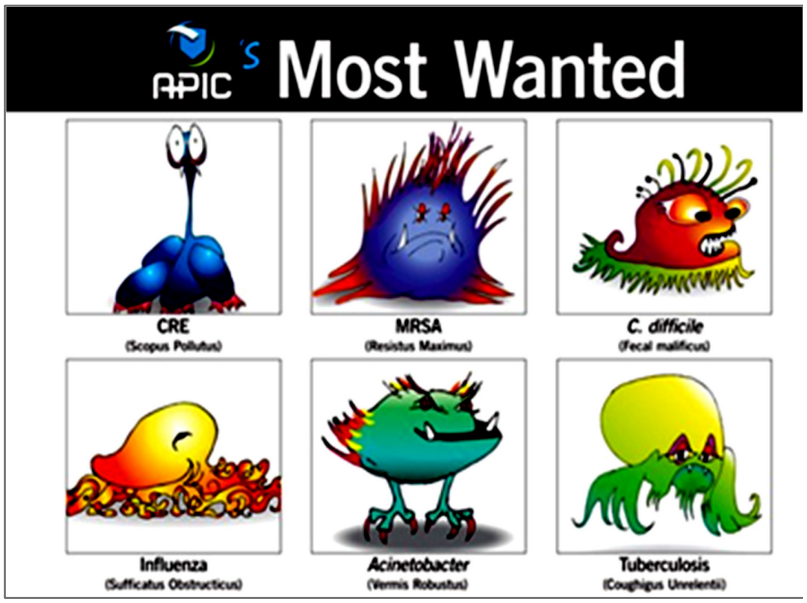
[6] "Comparative Life Cycle Assessment of Reusable vs. Disposable Textiles," TRSA, September 2014
[7] "Wet wipes found on British beaches up more than 50% in 2014," By Karl Mathiesen, The Guardian

Thirty-five of the non-biodegradable cleaning cloths were found for every kilometer of beach. Charlotte Coombes, an MCS conservation officer, said: “This move towards convenience, the move towards items to use once and throw away, it’s much easier for people to do that. What we are doing is not just using a lot more resources we are creating a lot more litter that can end up in the environment.” Although hospitals are not likely to contribute greatly to this problem, it is likely that some of the RTU disinfectant wipers will end up being flushed.

Use of Disposables: More Questions Than Answers

The two studies that make the case for the use of disposables, and in particular the Sifuentes/Gerba, et al. studies, have caused quite the marketing frenzy, with the disposable manufacturers often taking the former study out of context to support sales of more disposable products. Again, this is at a time when every industry/market is looking for “green” sustainable products that support less waste, reduce energy costs and a reduction in their carbon footprint.

To date, to the best of our knowledge, none of the disposable studies have included: the cost of the (disposable) product; the number of disposable wipers required to be used per patient room; and the increased cost of processing thousands of pounds of additional disposable products each year that are destined (if not incinerated as medical waste) to languish in landfill sites for generations to come.



Also noteworthy, the Sifuentes/Gerba study states that no Methicillin-resistant *Staphylococcus aureus* (MRSA) or *C. diff* spores were found in any of the reusable wipers. These two organisms, found in most healthcare facilities, plus Carbapenem-Resistant Enterobacteriaceae (CRE), *Acinetobacter baumannii*, tuberculosis and influenza, round out the Association for Professionals in Infection Control and Epidemiology (APIC)’s 2016 “Most Wanted” list of pathogens. This list is the greatest cause of concern to Infection Prevention (IP) and ES departments. These organisms also account for the majority of

HAIs. What was found on the reusable wipers tested and reported widely, that purportedly might recontaminate a patient room, were E. *coli* and Tetanus – neither of which made APIC's Most Wanted list for 2016.

Clearly, these studies that make the case for using disposables in the healthcare setting raise more questions than they answer. They ignore long-standing processes developed to prevent the transmission of disease that takes place in acute care hospitals. Frankly, we believe that much of the marketing hyperbole surrounding the controversy of "reusable rags" contaminating patient rooms is neither credible nor accurate. Reputable organizations such as the Healthcare Laundry Accreditation Council (HLAC) and TRSA provide research, guidance and recommendations to their members and healthcare providers to support their efforts to provide hygienically clean, safe, reusable textile products.

What the Experts Say

Before we get into the specifics as to why reusable wipers are preferred, we need to review the basic criteria related to processing/disinfecting patient care zones. And we need to identify a few assumptions.

The clear preference: Microfiber – Based on numerous studies conducted in as many countries, one assumption is that high performance "microfiber" cleaning products are preferred over any other. By high performance we assume the reusable products utilize a micro-denier splittable filament resulting in a fiber that is: triangular shaped, 4-5 microns (less than 0.2 denier) in size, and that there is sufficient micro-denier fiber content in the material to be considered a high performance product capable of removing pathogens from an environmental surface.

Since 2002, organizations including the Centers for Disease Control (CDC)[8], Occupational Safety and Health Administration (OSHA)[9], Environmental Protection Agency (EPA)[10] and The Joint Commission[11] have all published information in support of using "microfiber" products and the superior results achieved using these products in healthcare facilities.

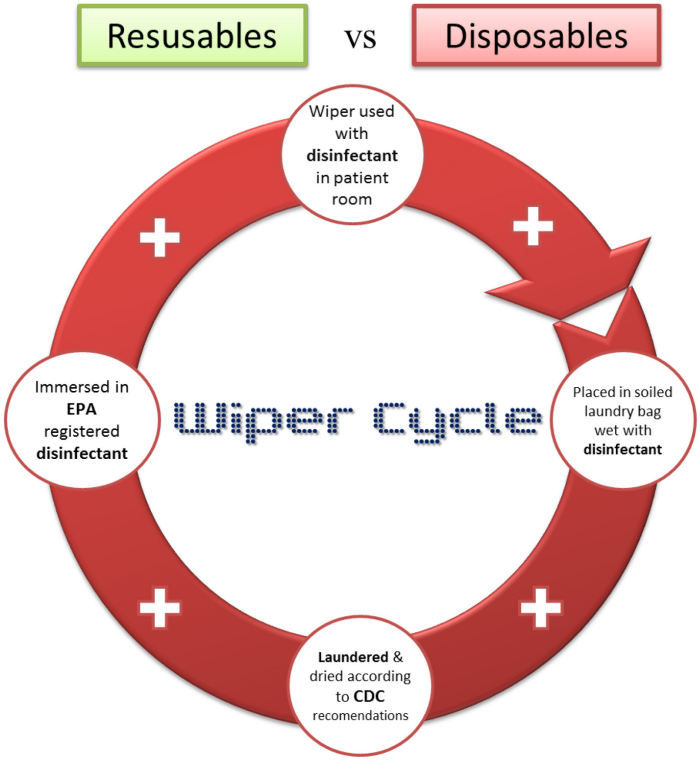
In the CDC report, in one study, the microfiber system tested demonstrated superior microbial removal compared with conventional string mops when used with a detergent cleaner (94% vs. 68%). The use of a disinfectant did not improve the microbial elimination demonstrated by the microfiber system (95% vs. 94%).

[8] "Guideline for Disinfection and Sterilization in Healthcare Facilities 2008, CDC
[9] "Protecting Workers Who Use Cleaning Chemicals," OSHA-NIOSH Infosheet, 2012
[10] "Using Microfiber Mops in Hospitals," EPA, 2002
[11] "Joint Commission Resources Quality and Safety Network Resource Guide: Update/Life Safety Code Issues" 2013

Experienced processors following recommended laundry processes – In the majority of cases, cleaning products – typically microfiber flat mops and microfiber wipers – are processed by experienced hospital linen processors, either on-premises or outsourced, following CDC, OSHA, HLAC, TRSA or ARTA recommended laundry processes (see Appendix, "Linen Processing"). Consider this question: If recontamination occurs in "mops and rags" then why aren't hospitals being plagued by contaminated sheets, scrubs, bed pads, sheets, etc., that often are grossly contaminated with human excrement and blood borne pathogens? The answer is obvious – contamination of the patient environment from laundered textiles rarely happens.

In her report, "Healthcare Laundry and Textiles in the United States: Review and Commentary on Contemporary Infection Prevention Issues,"[12] Dr. Lynne M. Sehulster of the CDC reviews the history of HAIs attributed to laundered textiles. She reports that such events are extremely rare, with only twelve worldwide occurrences reported in the last 43 years. The study states, "The outbreaks of clinically symptomatic infection among patients – (only 12 in the last 43 years) – are associated with textiles contaminated with environmental pathogens after laundering or contaminated owing to a deficiency in the laundering process." A finely tuned laundering process is critical but not sufficient to assure hygienically clean textiles at time of use. Transport and storage offer opportunity for contamination and must be designed to protect textiles from dust and soil and microbial growth.

The Wiper Cycle – Every acute care hospital has a committee that evaluates and determines which EPA registered hospital grade disinfectant, based upon broad efficacy claims, will be approved for use. Frequently, if *C. diff* (spore) infections become an issue, the approved disinfectant is replaced with an EPA-registered bleach product④ diluted to a 1:10 ratio and used to eradicate the problem.



The Wiper Cycle, as depicted in the accompanying graphic, is repeated every day in every healthcare facility. This is the typical scenario: the wiper is immersed in an EPA registered disinfectant, used in the patient room (preferably a

[12] "Healthcare Laundry and Textiles"

color-coded ONE*per*ROOM™ methodology), then put damp (or still wet) in a soiled laundry bag with many other damp wipers and, most likely the wipers wait many hours (if not days) to be laundered – thus far exceeding any recommended dwell time for any disinfectant. The wipers are then laundered according to CDC and/or OSHA recommendations for blood borne pathogens (75ppm to 150ppm chlorine bleach then dried at recommended temperatures) and are put back into the EPA registered disinfectant before going back into the patient room. So then, given this typical scenario – *how is it possible that there is any viable organism left in the wiper to re-contaminate a patient room?* Given this typical scenario, the conclusion is: the EPA registered disinfectant is not living up to its efficacy claims.

Comparing the Advantages and Costs

RTU wipers provide little, if any performance in removing pathogens from an environmental surface. Most are small non-woven and inexpensive materials used as a vehicle to get the proprietary chemical to the surface. All RTU wipers with a *C diff.* claim are labeled with "special instructions for cleaning prior to disinfection against Clostridium difficile spores."

Sidebar: How many disposable wipers does it take?

USING DISPOSABLE WIPERS IN A PATIENT/RESIDENT ROOM: Typical mattress dimensions (Hill-Rom Versacare): 86.5" x 35.45" x 7". These dimensions equate to approximately 54 square feet of surface area – top, bottom, 4-sides.

Note: *The following comes directly from the Clorox Commercial Products web site.* "Dispatch® Hospital Cleaner Disinfectant Towels with Bleach (6.75" x 8" towel) keeps a 4 square foot area wet for 2 minutes (the contact time required for all EPA-registered bacteria — except C. difficile spores — viruses and TB)."

Using Clorox's recommendations, it would take 13.5 Dispatch® wipers to process just the mattress – top, bottom and 4 sides. The bed frame, foot and headboard would require additional wipers. The entire bed should be processed at each terminal/discharge assignment.

Contact time for Dispatch® when used to eliminate Clostridium difficile spores requires the surface to remain wet for 5 minutes.

Thus, if one Dispatch® towel keeps a 4 square foot area wet for 2 minutes and it takes 5 minutes of contact time for Clostridium difficile, it is reasonable to assume it would require 2.5 wipes to keep a 4 square foot area wet for 5 minutes. Therefore, for a Clostridium difficile isolation room at discharge, it would require 33.75 Dispatch® wipers to process a mattress.

According to the manufacturers instructions, at a conservative $0.13 / wiper, the cost to process a mattress is $3.71.

As to cost, we have included a sidebar and an interactive spreadsheet, both of which provide a conservative insight as to the high cost of using RTU wipers in healthcare compared with a high performance reusable wiper. Depending on the RTU wiper product selected, the increase in cost ranges from 3X's to 12X's when compared with a reusable wiper.

Reusable high performance wipers are the result of ongoing research and development of innovative fibers and materials. The resulting products benefit from constant trial, in-service validation and customer feedback. Reusable wipers provide unrivaled absorbency, extreme high wet strength and are far more versatile. Unlike RTU wipers, reusables support color-coding, the two-fold method (results in eight clean surfaces similar in size to many RTU wipers), and are capable of removing virtually everything that can be physically removed from an environmental surface and absorbing it into the wiper. Thus achieving, and typically far exceeding, the dwell time of the chosen disinfectant in the wiper. The uncontested benefit of a splittable bi-component micro-denier fiber is its ability to remove!

When considering the use of RTU wipers, the ES department must calculate the cost per wiper, the number required to process the specific type of room and the annual cost burden. Little is mentioned on RTU manufacturers websites or product labeling relating to "best practices" – for example: how to use in the patient room versus the patient bathroom; how many wipers should be used on the toilet, especially if *C. diff* is an issue in either the patient or resident rooms; when should the exterior of the RTU container be wiped down as it moves from patient room-to-room?

REUSABLE WIPER VS RTU DISPOSABLE - Product Comparison Study and Cost Benefit Analysis

		Size	% Split Microfiber ⑤	2-sided Symmetry	Performance Equal BOTH sides	C dif Removal[f] No. 1822350 Side # 1	C dif Removal[f] No. 1822350 Side # 2	Price / ea.[2]	$ Process / Day†	Uses	Ea. / Room ④	Color Coded	Cost/room /day	# of Rooms (Hospital)	WIPER Cost/ YR[3]
Disposable	HYGEN®	12" X 12"	0	NO[1]	NO	99.9%	?	$0.21	0	1	2	No	$0.42	100	$15,330.00
	PREMIRA®	12" X 13"	0	NO[1]	NO	?	?	0.19	0	1	2	No	$0.38	100	$13,870.00
	Dispatch® Hospital Cleaner Disinfectant Towels with Bleach	6.75" X 8"	0	YES	YES	?	?	0.12	0	1	8	No	$0.96	100	$35,040.00
	Oxivir® TB Wipes	11" X 12"	0	YES	YES	?	?	0.19	0	1	8	No	$1.52	100	$55,480.00
	SANI-CLOTH® BLEACH	6" X 10.5"	0	YES	YES	?	?	0	0	1	8	No	$0.00	100	$0.00
						C dif Spore Removal[f]	C dif Spore Removal[f]								
Reusable	PerfectCLEAN	12" X 12"	83%	YES	YES	> 99.99%	> 99.99%	$1.29	$0.06	100	3	Yes	$0.04	100	$4,434.75

NOTES:

Disposable Tested: Rubbermaid's HYGEN Disposable Microfiber Wiper

Reusable Tested: UMF Corporation's All-Purpose PerfectCLEAN Wiper

[1] The RM disposable has two completely different sides - therefore performance will vary

[2] RM price is based upon discounted price of $59.95 per case of 240

[3] Cost/Yr based upon using products 365 days

④ Following the manufacturers instructions can result in significant increase in the number of cloths used per room

⑤ HYGEN and Contec disposable Microfiber wipers are made using 100% polyester microfiber - NO SPLIT MICROFIBER USED

† Cost estimate by Sterile Surgical Systems (*Processing for PC is based upon return transport, sorting, handling, chemicals, packing, and all utilities*)

‡ Information taken from Newell Rubbermaid HYGEN Disposable Microfiber Syestem sell sheet 06/13 WM SM805

NOTE: *Removal claim did NOT specify C dif vegetative form vs C dif Spores*

[f] ATS Labs - *Non-GLP Study Report "Surface Organism Removal Validation" Clostridium difficile - Spore form (ATCC 9689)*

Rubbermaid® and HYGEN® are registerd trademark's of Newel Rubbermaid Corporat

PerfectCLEAN® is a rgistered trademark of UMF Corporation

Oxivier® is a registered trademark of Diversy, Inc.

Sani-Cloth® is a registered trademark of Professional Disposables International, Inc

Dispatch® is a registered trademark of The Clorox Company

PREMIRA® is a registered trademark of CONTEC

Here's a link to a cost calculator (perfectclean.com/reusable-advantage) that will be helpful in determining the annual cost for a reusable vs. disposable program. If you determine that there are any consideration(s) that should be added to the calculation, let us know and we will customize the calculator for you.

Guidelines for Proper Use
We're all aware of the human factor in preventing infections. In many U.S. hospitals today, cleaning is considered healthcare's lowest-tech activity, carried out by a group of invisible employees at the bottom of the hospital hierarchy.

But in the best healthcare settings, C-suites are beginning to grasp the difference that cleaning staff – Environmental Services – can make not only in the lives of patients, but also in a hospital's reputation and its financial health. These leading facilities have adopted programs that elevate the role that the cleaning and disinfecting process plays in public health and safety, with a particular focus on infection prevention. These programs include:

- High performance textile products – designed for infection prevention – that merge new antimicrobial technologies with innovative design for safer environmental hygiene and with less effort, less waste and less cost than traditional cleaning methods
- Best-practice protocols that virtually eliminate cross contamination of infections
- Support programs that are nationally recognized for meeting standards of excellence in preventing infections
- A Hygiene Specialist® designation to individuals in healthcare who have participated in the company's exclusive program where they learn best practices for effective infection prevention and hygiene management
- Aggressive advocacy of multimodal intervention, or enterprise-wide initiatives, that include a new generation of cleaning processes to reduce infections.

These programs reinforce to staff infection prevention as a priority across the organization, create motivation and opportunity among housekeeping/custodial staff, raise the level of awareness of ES staff among the rest of the organization, and increases staff self-esteem.

With regard to the use of high performance textile products, among best practice protocols, is a simple methodology that employs a one-per-room color-coded system. It works like this: A fresh set of color-coded products (see Appendix, Color Coding Infographic) is used in each room, including washrooms, patient rooms and operating rooms. These products never cross the threshold into a second room; instead, they are laundered according to CDC guidelines for Blood Borne Pathogens before being put back into service.

The reusable wipers are processed by experienced, and highly professional, linen processors. Whether on-premise (OPL) or out sourced, they typically meet or exceed

government agency guidelines for processing health care textiles; to do otherwise would incur the loss of business and excessive liability (see Appendix, “Linen Processing”). Reputable laundry chemical manufacturers are providing hospitals and commercial linen processors with wash formulations developed to ensure that textiles are disinfected and free from pathogens.

A lot of dedicated professionals including linen managers, chemists, infection preventionists, ES staff members and many others, take great pride in providing the best patient experience possible. In our current “do more with less” and pay-for-performance economic environment, *using reusable wipers is the commonsense economical choice*.

Appendix

Linen Processing: There are a number of standards recommended for washing and chemistry. Linen processors are process-based enterprises. Wash processes are somewhat flexible based upon according to machinery, fabric, load type, local laws, etc. Most come directly from the CDC. The following is an example (from 2016 Edition of the Healthcare Laundry Accreditation Council Accreditation Standards – Copyright © 2015):

3.2. Washing

3.2.1. Providers shall follow fabric-care instructions and special laundering requirements for items used by the customer, thereby ensuring that washed healthcare textiles become hygienically clean. (CDC HICPAC GL EIC, 2003:II.G.IV.A, C, D)

3.2.2. Providers should avoid mixing fabric items used by the customer for environmental cleaning and disinfection (e.g., cleaning cloths, microfiber cloths, mop heads) in with healthcare textiles intended for patient use in the same wash load.

3.2.3. The load size (weight) for each textile classification and for each type of equipment used shall be established by the provider and shall be recorded for each load processed. (ANSI/AAMI ST65:2008; Std. 6.2.2)

3.2.3.1. Equipment and textile product manufacturers' recommendations should be consulted when establishing load size. (ANSI/AAMI ST65:2008; Std. 6.2.2)

3.2.4. Each classification shall have established standards for the following factors to optimize the productivity of the wash processes:

3.2.4.1. Cycle time: Pre-wash, wash, rinse, and final rinse times;

3.2.4.2. Water levels/usage: Total water usage and/or water levels;

3.2.4.3. Temperature: Wash cycle, bleach cycle, and rinse cycle temperatures; and

3.2.4.4. Chemical usage: Chemical types and usage levels for each step in the wash process.

3.2.5. Providers must demonstrate that wash processes are in compliance with state and local requirements by including a copy of these requirements in appropriate documentation and referrals to these requirements in policies.

3.2.6. If soiled textiles are received from the customer as labeled with hazardous drug contamination (i.e., chemotherapy drugs), the provider shall follow an appropriate textile process that includes:

3.2.6.1. Pre-wash of contaminated textiles in a washable laundry bag (e.g., net bag) separate from all other textiles and

3.2.6.2. Second wash process with other soiled textiles prior to drying cycle.

3.3. Extraction

3.3.1. The provider shall extract and/or dry the clean healthcare textiles in a manner that preserves the integrity of the textiles, minimizes microbial growth after washing, and prepares the textiles for efficient ironing or folding. (ANSI/AAMI ST65:2008; Std. 6.2.3.8)

3.3.2. Damp textiles shall not be inappropriately stored (e.g., tightly packed and poorly ventilated [which interferes with drying]), as this may facilitate microbial growth in said textiles. (CDC HICPAC GL EIC, 2003:II. G.II.D)

June 15, 2016	EPA's List of Registered Antimicrobial Products Effective against C. difficile spores
EPA Reg. No.	**Primary Registered Product Name**
777-83	LYSOL BRAND DISINFECTANT BLEACH PLUS
1043-124	HASTE-SSD-COMPONENT B
1043-125	HASTE-SSD-COMPONENT A
1672-65	AUSTIN A-1 ULTRA DISINFECTING BLEACH
1672-67	AUSTIN'S A-1 CONCENTRATED BLEACH 8.25%
1677-226	VIRASEPT
1677-235	BATH AND TILE DISINFECTING CLEANER
1677-237	FF-ATH
3573-77	CSP-3002-3
5813-100	PUMA
9402-13	KIMTECH GERMICIDAL WIPE
9480-8	PDI SANI-CLOTH BLEACH WIPES
10324-214	MAGUARD 5626
11346-3	CLOROX HW
56392-7	DISPATCH HOSPITAL CLEANER DISINFECTANT WITH BLEACH
56392-8	DISPATCH HOSPITAL CLEANER DISINFECTANT TOWELS WITH BLEACH
67619-8	CPPC ULTRA BLEACH 2
67619-12	CPPC TSUNAMI
67619-27	BUSTER
69687-1	SUPER-CHLOR
70271-13	PURE BRIGHT GERMICIDAL ULTRA BLEACH
70271-20	PURE BRIGHT GERMICIDAL 160 BLEACH
70271-21	GERONIMO 160A
70271-22	METACOMET 160B
70271-23	WAMPATUCK C
70271-24	TECUMSEH B
70271-25	OSCEOLA 160C
70271-26	MASSASOIT A
70271-27	CROCKETT
70271-28	TUBBS
70590-1	HYPE-WIPE DISINFECTING TOWEL WITH BLEACH
70590-2	BLEACH RITE DISINFECTING SPRAY WITH BLEACH
71847-6	KLORSEPT
75266-1	ACTIVATE 5.25% INSTITUTIONAL BLEACH
84526-6	SANOSIL HALOMIST
88089-4	PERIDOX RTU TM
37549-2	MICRO-KILL BLEACH GERMICIDAL BLEACH SOLUTION
10324-214	MAGUARD 5626
11694-113	SCRUBS
71847-6	KLORSEPT
70627-75	AVERT SPORICIDAL DISINFECTANT
66171-104	LIQUIDATE
1677-129	OXONIA ACTIVE
91386-1	SALT CARTRIDGE FOR GISELLE
777-83	LYSOL BRAND DISINFECTANT BLEACH PLUS
84697-2	REGULAR SCENT CONCENTRATED BLEACH
67619-32	PPD PUMA
88089-2	PERIDOX CONCENTRATE

HOW TO MITIGATE THE RISK OF ROOM-TO-ROOM CONTAMINATION

The PerfectCLEAN® Color-Coded Solution

The PerfectCLEAN Bath Kit

HOW IT WORKS

A fresh set of color-coded products are used in each room, including washrooms, patient rooms and operating rooms

Products never cross the threshold into a second room but instead...

...They are laundered according to CDC guidelines for Blood Borne Pathogens before being put back into service

PerfectCLEAN products are colored and coordinated with other specialized products used for a specific task in a specific room – no one else does this

HOW ORANGE WORKS

EXAMPLE: THE COLOR ORANGE FOR PERFECTCLEAN BATHROOM WIPERS, MITTS AND FLAT MOPS.

Separate – but only – orange products are used to clean the toilet, the sink and the tub and shower.

The orange mitt used on the toilet is placed into a container designated for soiled cloths – it's not used anywhere else in the bathroom.

Toilet is completely isolated from the rest of the bathroom and the bathroom from the patient care zone. This is critically important in that C. difficile and norovirus are oral-fecal route bacteria and virus respectively and the bathroom is a key resevoir!

THE COLORS OF SAFE

bathroom	patient room	operating room*	intensive care	common areas

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