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Challenged by Surface Compatibility? Don't Compromise: Disinfectant Innovations Eliminate the Need for Tradeoffs

By Danielle Augustin-Glenn, PhD, Research Scientist, Clorox Healthcare

In healthcare facilities, nearly any surface in the environment is susceptible to contamination with healthcare-associated infections (HAIs). Despite proactive infection control measures, many of these pathogens can still survive on surfaces long enough to be transmitted to patients and healthcare workers.¹ The challenge the healthcare community faces is the spread of these pathogens through various means – from mattresses and bed rails to furniture and medical equipment. According to a report by Office of Disease Prevention and Health Promotion, \$33 billion in annual healthcare cost is attributed to preventable HAIs, 20 percent of which are associated with contamination related to medical devices.² Understanding how and why these device and equipment-associated transmissions occur and identifying appropriate solutions is a top priority for the healthcare community today.³

Proper cleaning and disinfection, with the appropriate disinfectants, is a vital component of infection prevention programs. In addition to legacy dilutable disinfectants that leverage quaternary ammonium compounds, technological advances in disinfectant chemistry have enabled the development of pre-mixed, ready-to-use, shelf-stable solutions that harness the power of fast-acting oxidative chemistries like bleach and hydrogen peroxide. Over time, these products have evolved to better suit the needs of a changing healthcare environment and balance two key priorities for environmental hygiene: efficacy and compatibility.

Most immediate of the two priorities is efficacy. Improvements in hospital cleaning and disinfection have been associated with reductions in healthcare-associated infection rates and the risk of acquiring multidrug-resistant organisms in hospital rooms that previously housed colonized or infected patients.⁴ While the disinfection of healthcare surfaces and equipment is essential for reducing the risk of HAIs, appropriate consideration and care must be taken to protect them from damage. According to a ECRI Institute report on health technology hazards, "use of cleaning agents or cleaning practices that are incompatible with the materials used in a medical device's construction, or that are otherwise inappropriate for the device's design, can cause the device to malfunction or to fail prematurely, possibly affecting patient care."⁵ The proper care of healthcare surfaces also has important implications for cost, patient satisfaction and public perception.

In a space where options are plentiful, but not always created equal, and diverse stakeholders often have competing priorities for product selection and use, healthcare facilities need solutions that meet high standards for efficacy and aesthetics, so they can fight healthcare-associated pathogens without damaging surfaces and limit unsightly residue left behind.

The Two-Part Compatibility Challenge

Surface compatibility has become something of a buzzword for manufacturers. Generally speaking, the term is used to reference the degree to which disinfectants are suitable for use on specific surfaces and equipment. But what makes a product suitable for use? When reviewing surface compatibility information, there are two important considerations: aesthetic issues, like residue, and corrosion. There is no silver bullet. All disinfectants can cause compatibility issues if used improperly, but understanding potential challenges and selecting products designed to minimize them can help facilities protect against pathogens and surface damage.

In today's shifting healthcare landscape, the role of patient experience has gained new prominence. Patients have the power to not only impact public perception of healthcare facilities via social media and rankings, but also to influence reimbursement levels by participating in surveys submitted through

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HCAHPS. As a result, aesthetic issues noticed by patients, like residue – anything left behind on surfaces after the cleaning or disinfecting product dries – can become problematic. All commercially available cleaning and disinfecting products can leave residue on surfaces. Salt residue, which without rinsing, may be left behind on surfaces treated with bleach-based disinfectants, is often the most visible. While healthcare professionals may recognize salt residue as a sign that surfaces have been disinfected with bleach and are less likely to harbor pathogens, to the layperson, visible residue may suggest the surface is dirty.

The other key compatibility challenge is corrosion, which refers to actual damage to surfaces and equipment. This is sometimes a concern when using powerful sporicidal disinfectants, because the oxidizing action which makes them so effective against microorganisms can also impact surfaces. Damage caused by corrosion can lead to costly repairs or replacements and also has safety implications. Corrosion can cause pitting, or otherwise compromise the integrity of healthcare surfaces, increasing the risk of contamination and limiting the efficacy of treatment with manual surface disinfectants.

Trade-Offs Leave Facilities Vulnerable

While focused on reducing HAI rates, healthcare facilities also face significant pressure to minimize compatibility issues. From an administrative perspective, hospitals must safeguard financial investments in facility maintenance and expensive medical equipment. On the front lines, clinical staff and EVS workers are often the first blamed for complaints about corrosion or residue. Torn between the disinfectants they need to use to quickly kill dangerous pathogens and products that are easier to use, facilities may make risky trade-offs to manage these pressures.

For example, hospitals might opt to trade down from a sporicidal product with broad-spectrum microefficacy and short contact times to weaker disinfectants like quats, which many assume can do a “good enough” job to justify the trade-off for better aesthetics. In such a scenario, corrosion and residue might be limited, but at the expense of efficacy, potentially leaving patients vulnerable to dangerous bacteria like *Clostridium difficile* (*C. difficile*). Nearly 500,000 Americans suffer from *C. difficile* infections every year and almost 30,000 die as a result.⁶ Unlike a sporicidal disinfectant, quat products do not kill *C. difficile* spores.

Eliminating Trade-Offs: Finding the Right Disinfectant

There are a few key characteristics worth considering in selecting the ideal disinfectant for your facility:

- 1. Efficacy:** Your disinfectant should have a wide antimicrobial spectrum, including kill claims for the pathogens that commonly cause HAIs and outbreaks. Long trusted for their broad-spectrum disinfection efficacy and utility in *C. difficile* prevention protocols, Clorox Healthcare® Bleach Germicidal Wipes are now EPA-registered to kill 58 microorganisms in three minutes or less.
- 2. Compatibility:** Look for products with broad surface compatibility or those that are specially formulated for compatibility with surfaces commonly found in healthcare settings. Through the [Clorox Healthcare Compatible™](#) program, Clorox Healthcare works with medical equipment manufacturers to evaluate and test compatibility across its portfolio of disinfectants on common surfaces and equipment.

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3. Contact time: Products with short contact times (e.g., 30 seconds to three minutes) help ensure faster room turnover and compliance. Wet-contact time is another critical component; if the product evaporates from the surface before the kill time is achieved, it may not be effective. The best disinfecting products have a wet-contact time greater than or equal to kill times listed on their label.

4. Ease of use and aesthetics: When products are easy to use, there is less chance for error. Products should be effective in the presence of organic matter, have an acceptable odor profile, be shelf-stable, soluble in water and have simple directions for use. Ideal products should clean and disinfect in one step and be available in multiple forms with low-residue so no extra wiping step is required.

Other disinfectant selection factors include training and support offered by the manufacturer, cost and standardization. The best suppliers can help you identify the right products to meet your facility’s unique needs and will offer onsite training and ongoing education to help support implementation.

No Compromising on Compatibility

Clorox Healthcare offers the most robust portfolio of EPA-registered surface cleaners and disinfectants, in addition to UV technology, to provide healthcare facilities with a comprehensive approach to environmental hygiene for HAI prevention. Long trusted as a leader in disinfectant efficacy, Clorox Healthcare also understands the challenges facilities face in balancing the need to protect patients from dangerous pathogens and safeguard surfaces and costly equipment from damage. We work closely with experts in the field and our customers on the ground to ensure product development is inspired and informed by their evolving needs.

Clorox Healthcare is committed to providing the efficacy, compatibility and aesthetics healthcare facilities need. Beginning with the launch of Clorox Healthcare® Fuzion™ Cleaner Disinfectant, a new type of bleach that combines disinfecting efficacy against tough-to-kill pathogens like *C. difficile* with the aesthetics required for broad use throughout the facility, we are leading a push to eliminate the need to make tradeoffs between efficacy and surface compatibility that will include enhancing trusted formulations to provide the same great

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Offers broad surface compatibility — including clear plastic, stainless steel, vinyl and more.
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- **Kills *C. difficile* in 2 minutes.**
The fastest kill time available.*

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*Based on EPA Master Labels as of May 2016.
Use as directed.

NI-37536

efficacy but with lower residue and better compatibility. Our goal is to take the environment out of the equation for HAIs, and we will continue to improve our disinfectant offerings to safeguard patient environments.

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HEALTHCARE®

Building on a century-long legacy in cleaning and disinfecting, Clorox Healthcare offers a wide range of solutions to help stop the spread of infection in healthcare facilities. From comprehensive surface disinfection, including advanced ultraviolet technology, to skin antiseptics, we are committed to providing efficacious solutions, designed for compliance, to safeguard patient environments. For more information, visit www.CloroxHealthcare.com or follow @CloroxHealth on [Twitter](https://twitter.com/CloroxHealth).