

CLOSTRIDIUM DIFFICILE – MARCH 2018

Today's hot topic in Healthcare is the spore-forming bacterium *Clostridium difficile* ---- often called '**C.diff**' or '**C.difficile**'. Formerly, focus has been on the (staff) bacteria '**MRSA**' (Methicillin-resistant *Staphylococcus Aureus*) and to a lesser degree on both the bacteria '**VRE**' (*vancomycin-resistant enterococci*) and the (yeast) fungi **Candida auris**. All have the same in common:

They are drug-resistant, with antibiotics having no effect ... the presumed causal factor being that current hospital protocols (used for cleaning and disinfecting) are unable to stop, reduce or prevent **Hospital Acquired Infections ('HAI')** caused by the above microorganisms.

Why does **HAI** continue to be a problem? ... especially when infection control departments require use of highly-powerful disinfectants (that, in laboratory testing, kill the above microorganisms in minutes). Similarly, when such disinfectants damage furniture and negatively impact the health of environmental service staff, why do hospitals continue to use these harmful, expensive disinfectants that do not effectively clean?

After review of Environmental Services' guidelines published by international societies (APIC, CDC, IDSA, SHEA, ACG, ESCMID, WSES, ASID), **chlorine-based disinfectants** are clearly more effective at prevention of *C.diff*-, *VRE*-, *MRSA*-, and *Candida*-caused infections in healthcare facilities.

The further consensus is that thorough microfiber cloth cleaning of environmental surfaces with a **detergent** is crucial to reduce contamination. Microfiber cloth cleaning with **detergent** reduces the transfer of *C.diff* spores to other environmental surfaces. Compared to using (more expensive, more corrosive, more toxic) **disinfectants**, recent studies report the value of using **detergent** to PHYSICALLY remove soil.

Conclusively, the killing activity of the disinfectant alone is ineffective compared to the superior protocol of first cleaning with microfiber cloth (to reduce surface contamination) followed by disinfection (using chlorine-based disinfectants).

Of equal consideration is that detergents are less toxic than disinfectants that likely encourage accumulation and dispersal of tolerant and resistant genes among hospital strains.

Automated technologies such as **UV Light** and **Hydrogen Peroxide ('HP')** systems are universally expensive, cannot be used in occupied rooms and require trained operators. Further, they require planning of housekeeping schedules. Effective UV or HP disinfection may take several hours to complete a full cycle ... in contrast to considerably less time taken for traditional discharge cleaning. While both UV & HP technologies significantly reduce *C.diff*, they impede effective manual cleaning of hospital surfaces ... thus still requiring detergent cleaning for routine decontamination.

Greenspeed acknowledges that there is not one 'silver bullet' for an ideal disinfectant or perfect protocol. Reduction of HAI can be accomplished using only a comprehensive protocol. And while the debate continues

over cleaning with the use of detergent- vs. disinfectant-based solutions, hospitals in Japan, United Kingdom and Northern Europe routinely use **detergent-based cleaning** for general surfaces, with lower levels of *C.diff*, *MRSA*, *MDR* and *VRE* being reported than **disinfectant-using** hospitals in other countries, particularly the USA. Several studies support the fact that **physical removal** is as good at removing soil as disinfectants, with strong emphasis on using the **detergent-based** solution to avoid environmental and human toxicity caused by potent disinfectants.

Greenspeed's proposition is effective surface cleaning starts with an organic, 100% biodegradable detergent (Aquaox 112) applied with a high-quality microfiber cloth and followed by an electrostatic spray-application of an EPA certified disinfectant (Aquaox 275) that can air-dry without leaving residue.

- This best-practice protocol should be used for discharge cleaning of non-critical patient rooms.
- For daily cleaning of all high-touch environmental surfaces, wipe surfaces with an EPA certified detergent-disinfectant (Aquaox 275).
- Instead of using the detergent (Aquaox 112) for discharging critical patient rooms (isolation rooms), use a *C.diff*-rated disinfectant (Soleva 0.6%) followed by electrostatic spraying of (Aquaox 275 or Aquaox 525) disinfectant.

Greenspeed acknowledges disinfectant-based cleaning protocols and does not have an intention to change current targeted-surface disinfection. We merely recommend adding electrostatic spraying of **Aquaox Disinfectant** for whole-room disinfection in patient rooms where difficult or impractical to implement alternative methods.

The CDC identifies Hypochlorous Acid as 80-100 times more effective than diluted Bleach!

The **Aquaox Disinfectant** active ingredient is Hypochlorous Acid (the same active ingredient as Bleach). Hypochlorous Acid = free-available-Chlorine, the amount of which is tested for efficacy of bleach.

Aquaox Disinfectant is pH-neutral, ready-to-use, with EPA permission to be electrostatically sprayed and let air-dry.

Soleva 0.6% is a 9 pH **Hypochlorite** solution, having a 10-minute *C.diff* kill-claim and having an EPA submission in which GLP data supports a 2-minute kill-claim. Soon, we expect label modification approval. Known on **Giselle** List-K as 'saltcartridge', Soleva 0.6% is produced as an on-site, on-demand, ready-to-use **disinfectant** at a cost that approximates 50% of Clorox fuzion, Verisept or other C.diff-rated disinfectants.

Greenspeed's years of onsite experience validates that disinfectants do not remove a debris. Keeping surfaces clean requires effective, periodical cleaning using a detergent. Then, spray disinfectant and let air-dry.

For more information, contact Michel van Schaik at 800.790.7520. info@aquaox.net / info@greenspeed.biz