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Clinell Universal Wipes Evidence Brochure

THE EVIDENCE SPEAKS: REDUCING HEALTHCARE-ASSOCIATED INFECTION (HCAI) THROUGH MORE EFFECTIVE ENVIRONMENTAL DECONTAMINATION

Contaminated surfaces contribute to the transmission of pathogens associated with HCAI[1,2]. To combat this, pre-impregnated wipes are increasingly being used to clean and/or disinfect surfaces and equipment[3].

When compared with cloths and sprays, wipes improve cleaning compliance and reduce the reliance on a cleaner to get the disinfectant dosing and distribution correct[4,5].

Not all wipes are created equal. Dual action detergent and disinfectant wipes are more effective at reducing microbial bioburden on surfaces[5,6]. They also transfer fewer microbes to other surfaces than detergent wipes – avoiding potential cross-contamination[6].

However, evaluating the efficacy of any given disinfectant wipe requires some healthy scientific scepticism. Standard efficacy tests for disinfectant wipes are inconsistent and may not reflect real-world usage[6,7]. Manufacturer claims should always be interpreted with caution.

Good infection prevention is a strange alchemy of microbiology, formulation chemistry and behavioural science. Standard efficacy tests are designed, at best, to measure any one of these. No standard test methods exist to analyse the complex interactions of all three. Therefore, our gold standard should always be rigorous, peer-reviewed research. When we get the right product, implemented in the right way, we can have a dramatic impact on the pathogens associated with HCAI[4,8–11].

GUIDELINES

Wipe it out: one chance to get it right. The selection and use of disinfectant wipes

Royal College of Nursing, 2011.

The RCN recognised the increasing use of wipes in the healthcare sector. They formed a multidisciplinary expert group to create a summary of the evidence around disinfectant wipes, and develop a series of consensus recommendations. These include the need to involve subject matter experts from infection prevention control during the selection and testing of wipes, ensuring that the manufacturer claims are backed up by appropriate testing data, and the need for standardised testing methods.

RESEARCH STUDIES

Wiping out MRSA: effect of introducing a universal disinfection wipe in a large UK teaching hospital

Garvey *et al.* Antimicrobial Resistance & Infection Control 2018; 7(1):155.

A two-stage cleaning process (involving a detergent wipe followed by alcohol disinfection) was replaced by Clinell Universal — a single-step process with combined detergent disinfectant activity. MRSA acquisitions across the whole organisation fell by 55% from 21 to 9 per 100,000 patient days ($p<0.005$) with additional operational benefits such as time saved and reduced stock storage requirements. Additionally there was a continuing and consistent reduction, with average hospital acquisition rate of MRSA/100,000 patient bed days falling by 6.3% per month after introduction of the wipe. The authors concluded “here we show a change in practice to something which is simpler can have a result.”

Improving Cleaning and Disinfection of High-Touch Surfaces in Intensive Care during Carbapenem-Resistant Acinetobacter baumannii Endemo-Epidemic Situations

Casini *et al.* Int J Env Res Pub Health 2018; 15(10):2305.

The impact of a standard two-step cleaning method consisting of alcohol-based detergent cleaning followed by chlorine disinfection was compared with a single-step cleaning/disinfection process, using Clinell Universal Wipes. Sampling of five high-touch sites was performed before the procedure and 0.5, 2.5, 4.5, and 6.5 hours afterwards. The Clinell Universal Wipes were significantly more effective immediately after the cleaning process, and also exhibited residual activity for at least 6.5 hours. The study concluded that the Clinell Universal Wipes represent an effective alternative to standard cleaning and disinfection.

A comparison of 1000ppm chlorine solution and detergent/disinfectant wipes for decontamination of a clinical environment contaminated with vancomycin-resistant enterococci

Chang *et al.* Infection Prevention Society. 2017: Manchester, UK.

Taiwanese researchers compared standard disinfection approaches using chlorine solution to Clinell Universal Wipes for tackling contamination with VRE. High levels of contamination were identified both before and after disinfection using chlorine solution: 40% of sites remained contaminated with VRE after chlorine disinfection. In contrast Clinell Universal Wipes virtually eradicated VRE (with only 3% of sites remaining contaminated after disinfection). Whilst it is not clear whether it was the improved disinfection process using wipes, or the differences in the chemicals used, the result is that the wipes delivered considerably improved disinfection compared with chlorine solution (combined with improved staff safety).

Cleaning high touch surfaces of patients’ rooms: make it easier, and it simply gets cleaner

Martin *et al.* Open Forum Dis 2018; 5(S1):S346.

Researchers in Israel performed a prospective intervention cross-over study to examine the impact of introducing Clinell Universal Wipes compared with chlorine solution on medical wards in an acute hospital. The impact of the disinfection methods was judged through the removal of fluorescent markers: the wipes were significantly more likely to result in the removal of all fluorescent marks than the chlorine solution. The wipes resulted in improved adherence to room cleaning protocols, and staff felt that the wipes shortened the cleaning process.

A pilot study to compare residual bactericidal activity between quaternary ammonium compound disinfectant formulation contained within a wipe and a chlorine containing disinfectant

Jin *et al.* Healthcare Infection Society International Conference 2018; Liverpool, UK.

Whilst it is well-recognised that some disinfectants possess residual activity, the extent of residual activity has rarely been quantified. A study from researchers in China compared the residual activity of disinfectant from Clinell Universal Wipes to chlorine solution. The dried disinfectant from the Clinell Universal Wipes retained the capacity to achieve a >6-log reduction on the standard test strains of *E. coli* and *S. aureus* for at least 24 hours on both stainless steel and plastic discs. In contrast, chlorine did not exhibit any residual activity. This residual disinfecting activity is likely to reduce the risk of pathogen transfer from surfaces.

RESEARCH STUDIES (continued)

Instilling a culture of cleaning: effectiveness of decontamination practices on non-disposable sphygmomanometer cuffs

Zimmerman *et al.* J Infect Prevent 2018; 19(6):294-9.

A sample of 54 non-disposable sphygmomanometer cuffs were collected from a rural emergency department and tested for bacterial contamination before and after decontamination using Clinell Universal Wipes. Levels of contamination were significantly lower following decontamination with the wipes; 71% of cuffs showed growth before decontamination, compared with only 2% afterwards. The authors concluded that using wipes to decontaminate non-disposable cuffs would be clinically effective, environmentally friendly, and cost-saving compared with using disposable cuffs.

Mycobacterium chimaera-contaminated heater–cooler devices: the inner surface as the missing link?

Cheng *et al.* J Hosp Infect 2018; 100(3):E157-8.

A recent study from Hong Kong highlights the potential for surfaces on the heater-cooler units to be reservoirs for *Mycobacterium*. No contamination of the outside surfaces of the units, which were effectively disinfected using Clinell Universal Wipes, was identified. However, 4/8 (50%) of the inner surfaces of the units were contaminated with *M. chimaera*. It's possible that this surface contamination could be involved, either directly or indirectly, in seeding the airflow exiting the units that then enters the surgical field and causes a surgical infection.

A study of microbial colonisation of orthopaedic tourniquets

Ahmed *et al.* Ann R Coll Surg Engl 2009; 91(2):131–134.

Twenty tourniquets were sampled, and all were found to be contaminated with bacteria. The authors hypothesised that this could be a source of cross-infection. Disinfection using Clinell Universal Wipes reduced bacterial contamination by 99.2%. The authors concluded that tourniquets should be disinfected using a wipe after each use.

Sharps tray cleaning after use – a completed audit cycle

Jenkins et al. J Clin Audit 2012; 4(3).

A before-after audit evaluated the compliance with recommended cleaning of sharps trays. Before the intervention, 10% of 40 trays were cleaned after use. The intervention included; a policy modification to itemise specific guidance for sharps trays, Clinell Universal Wipes being made available at the point of care in all clinical rooms, audit findings being disseminated to clinical staff, and posters promoting tray decontamination being placed in all clinical rooms. As a result of this multi-modal intervention that included product, training and audit resulting in a completed cycle, compliance with tray cleaning improved to 76% of 49 trays post-implementation.

Pathogenic colonisation of hospital badges and neck lanyards in the theatre environment

Lobaz *et al.* Anaesthesia 2012, 67(5), 562–567.

A before-after study evaluated bacteria contamination on staff ID badges and lanyards. 25.3% (21/83) badges and lanyards were contaminated with pathogens associated with HCAI. Following disinfection using Clinell Universal Wipes, all pathogens were killed, with a mean 72% reduction in CFU. The authors concluded that Clinell Universal Wipes are an effective killing intervention against pathogens associated with HCAI and in reducing overall microbiological burden.

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