



University of HUDDERSFIELD

University of Huddersfield Repository

White, Stephen, Humphreys, Paul, Topping, Annie and Oakes, Lauren

Evaluating decontamination methods for mobile devices

Original Citation

White, Stephen, Humphreys, Paul, Topping, Annie and Oakes, Lauren (2015) Evaluating decontamination methods for mobile devices. In: Infection Prevention Society Conference 2015, 28th - 30th September 2015, Liverpool, UK.

This version is available at <http://eprints.hud.ac.uk/id/eprint/25996/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

<http://eprints.hud.ac.uk/>

Evaluating Decontamination Methods For Mobile Devices

Stephen White¹, Dr. Paul Humphreys¹, Professor Annie Topping², Lauren Oakes¹

¹ University of Huddersfield, ² Hamad Medical Corporation, Doha, Qatar

Email: stephen.white@hud.ac.uk

1. Introduction

- The use of mobile devices within healthcare settings by staff, patients and visitors is widespread and growing.
- Department of Health guidance states that patients should be allowed the widest possible use of mobile phones (DH, 2009).
- For staff, mobile devices have become an essential aspect of their day-to-day professional and personal lives.
- There is, however, clear evidence that phones/tablets can be contaminated with pathogens, which may survive for prolonged periods before being transferred onto hands or other surfaces (White et al, 2012).
- This quantitative study evaluates the ability of a range of technologies to decontaminate iPads.

2. Methods

- The front, back and sides of iPads were contaminated with a standard suspension of *Staphylococcus aureus*.
- Half of these surfaces were sampled to provide pre-values, whilst the other half was decontaminated with either alcohol wipes, detergent wipes, quaternary ammonium impregnated wipes, or exposure to Ultraviolet light for either 30 or 60 seconds.
- As a control, a microfibre cloth impregnated with sterile water was also tested.

3. Results

- Alcohol based wipes were most effective, generating on average a 2.3 log reduction on the back of the iPad and a 3.3 log reduction on the front.
- The cleaning of the front surface of the iPad was consistently easier to clean than the back.
- However, all of the wipes were less effective than UV exposure, where a 60 second exposure generated a 4.0 log reduction on the front and a 3.8 log reduction on the back.

4. Discussion

- The results indicate that commercial wipes are unable to effectively decontaminate the high touch surfaces of an iPad.
- However, the application of a UV decontamination technology was a much more effective method for the removal of bacteria from these surfaces.
- This suggests that UV based decontamination technology would provide a quick, efficient and economical method for the disinfection of mobile devices such as iPads in healthcare settings.

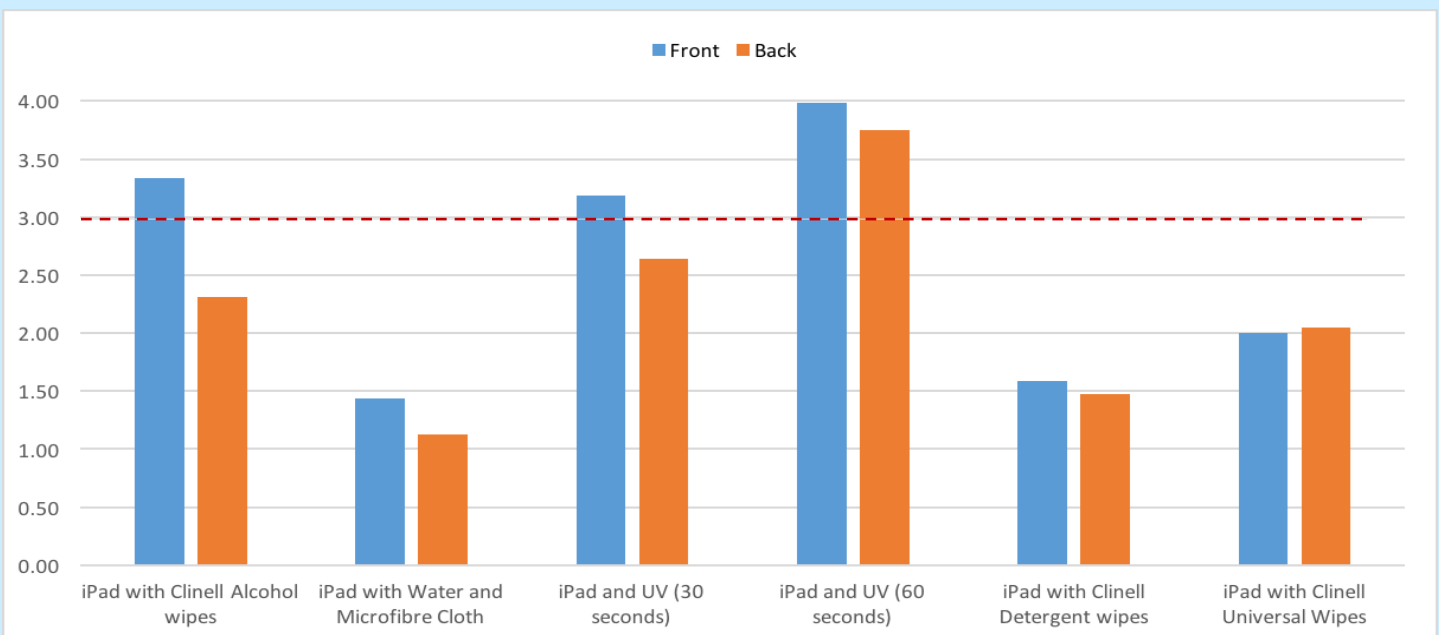


Fig. 1: Average Log reduction of *Staphylococcus aureus* on the front and back of the iPad after treatment.

References

1. DH (2009) Using mobile phones in NHS hospitals. London, Stationery Office.
2. White, S., Topping, A., Humphreys, P., Rout, S., & Williamson, H. (2012). The cross-contamination potential of mobile telephones. *Journal of Research in Nursing*, 17(6), 582-595. doi:10.1177/1744987112458670