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Evaluating decontamination methods for mobile devices

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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