

In Their Hands: Student Experiences with a Gesture **Recognition System for Handwashing**

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Introduction

Hand hygiene is a cornerstone of biosecurity in small animal, equine and production animal medicine. Good hand hygiene is a fundamental step in prevention of hospital acquired infections (Suthar et all, 2014) and is an essential core skill that is embedded throughout the curriculum at the Royal (Dick) School of Veterinary Studies in Edinburgh. Despite this, anecdotal observations have noted that students may fail to demonstrate correct hand hygiene protocols during clinical rotations.



3 Surewas Fig 2: The Surewash® machine during a tutorial

Methods

The project introduced an open access educational intervention in the form of Surewash®, a mobile computer system with gesture recognition software, that provided computer-based instruction to students for each key step in the NHS hand hygiene protocol (NHS, 2013) that is used across the R(D)SVS. This allowed students to practice as often as they wished, and gave them direct and immediate feedback on the steps they found difficult.

Infection Control Ambassadors from each year were recruited and trained to promote the Surewash® training to their peers over a four week period.

Results

Over the four weeks, a total of 94 students completed the Surewash® training. Thirty-three students failed individual steps in the protocol, and several steps proved to be challenging for students. Across all years, the average number of interactions per student was 3.2, however, one year cohort averaged 5.9 interactions per student.

User ID	Name	Outcome	Last session	# Sessions		X	-	A	\wedge	\wedge	K
3116711195	5	🥑 passed	11 Dec 2015	5	100%	100%	100%	100%	80%	100%	100%
3116714971		🕑 passed	14 Dec 2015	6	100%	83%	83%	83%	83%	66%	83%
3116715099)	📀 passed	14 Dec 2015	3	100%	100%	100%	100%	33%	100%	100%
3116715163	}	📀 passed	17 Dec 2015	6	100%	100%	100%	100%	83%	100%	100%
313674363		🤤 failed	14 Dec 2015	3	100%	33%	33%	33%	33%	0%	0%
3136881163	3	Failed	1 Dec 2015	1	100%	100%	100%	100%	0%	100%	100%

Fig 3: Results obtained from the Surewash® machine demonstrating various interactions from students and the steps they found difficult

Fig 4: Overall summary of steps and interactions with the machine showed peak times over lunch and various steps were observed to be difficult.

Discussion and Future work

The Surewash® machine offered an additional educational intervention that students engaged with successfully on an open access basis.



Enlisting Infection Control Ambassadors proved to be a successful approach to encouraging student engagement with the training. Future work will include focus groups to establish reasons for differences in engagement levels between years, and reasons why certain steps in the protocol proved to be difficult

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References

NHS. 2013. CG1 Standard Infection Prevention and Control Guide lines. [ONLINE] Available at: http://www.nhsprofessionals.nhs.uk/download/comms/cg1%20standard%20infection%20prevention%20and%20control %20guidelines%20v4%20march%202013.pdf. [Accessed 31 May 2016]

Suthar, N., Roy, S., Call, D. R., Besser, T. E. & Davis, M. A. 2014. An Individual-Based Model of Transmission of Resistant Bacteria in a Veterinary Teaching Hospital. PLoS ONE, 9, e98589.



Hand Washing video available to all staff and students