The Design Development of an Innovative Multi-Modal Device to Improve Hand Hygiene Rates in Health Care Facilities

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The purpose of this project was to develop a new helpful multi-modal hand hygiene device that could be implemented into a healthcare setting. The device would determine whether an audio reminder would be effective in helping to promote health care workers (HCWs) to maintain good hand hygiene (HH). The goal was achieved by modifying a standard commercial sanitation device by installing components consisting of a speaker, motion-detector, LED light, and counter to log the number of “senses” versus “actions,” a sense is a person passing by the device and an action is a person using the device. A control group device was also constructed for purpose of only detection and keeping track of senses. The devices were placed in a clinic (HCF A) and the med/surg unit within a hospital (HCF B). A device was placed in two rooms within each health care facility (HCF) at opposite ends of the hall, for the control and test group. Testing occurred over a nine week period. Results concluded that the HCF A control group average percentage was (M= 8.33) and test group (M=23.89), ($p < .0039$). While HCF B average for control was (M=27.22) and test (M= 73.33), ($p < .0001$). A chi-square ( ) analysis also determined further significance with a value of 39.8426 (HCF A) and 112.6154 (HCF B). The multi-modal hand sanitizing device was shown to be effective in helping HCWs remember to sanitize, giving HCFs another option for improvement, and providing a more cost-effective strategy for hand hygiene compliance.

Awards Won: