

The Role of Autonomy in Electronic Hand Hygiene Monitoring Systems

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INTRODUCTION

Proper hand hygiene (HH) is one of the most effective measures to prevent HAIs by minimizing the transmission of pathogens [1]. Reminder prompts have been demonstrated to play a significant role in improving HH compliance among healthcare workers (HCWs) [2]. Previous studies have explored the efficacy of electronic hand hygiene monitoring systems (EHHMS) by enforcing uniform prompting protocols across all users [3]. However, little is known about the effects of allowing HCWs to choose whether to activate or deactivate the prompting feature. This study investigates the impact of voluntary prompt deactivation on HH compliance rates in a Toronto hospital's respiratory unit.

MATERIALS AND METHODS

A cohort of 23 HCWs was equipped with EHHMS badges and given the option to activate or deactivate the prompt. The badges delivered real-time prompting via discrete vibrations when HH is required upon entering or exiting patient areas. Over a 6-month period, their HH compliance rates were monitored. Compliance data were categorized into periods when the prompt was activated (Prompt-On) and deactivated (Prompt-Off), allowing for analysis of individual variability in prompt usage, as participants switched between activating and deactivating the prompt at different times. The system automatically collected compliance data, which were then analyzed using Wilcoxon signed-rank tests due to the non-normal distribution of the two groups.

RESULTS

A total of 58,060 HH opportunities were recorded. The study revealed a significant difference in HH compliance rates between the Prompt-On and Prompt-Off groups (Figure 1, $P < 0.0001$). Participants in the Prompt-On group demonstrated a mean compliance rate of $85\% \pm 16\%$, significantly

higher than the Prompt-Off group, which had a mean compliance rate of $58\% \pm 25\%$, suggesting the critical role of real-time feedback in maintaining HH adherence.

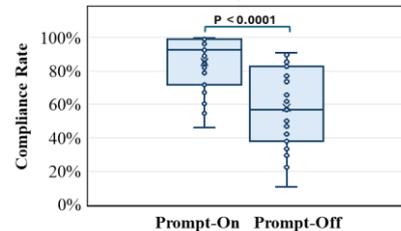


Figure 1. Compliance rate decreased significantly in the Prompt-Off group compared to Prompt-ON group

DISCUSSION

The findings of this study align with prior research emphasizing the importance of reminder prompts in enhancing HH compliance. Unlike previous studies, which applied uniform prompting protocols, this investigation highlights the detrimental effects of allowing HCWs to opt out of prompting [3]. The autonomy to deactivate prompts appears to undermine the overall effectiveness of EHHMS, leading to lower compliance rates and potentially increasing the risk of HAIs.

CONFLICT OF INTEREST

G. Fernie is a founder of the spin-off company that markets the EHHMS technology.

REFERENCES

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