

MT. SINAI HOSPITAL /  
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STUDY ABSTRACT

## Efficacy of a Personal Hand Sanitization Device for Improving Hand Hygiene Compliance in Nurses: Preliminary Results

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**Background:** Hospital acquired infection is an ongoing concern for the public health care system. Yet much of these infections can be prevented by improving the hand hygiene (HH) of nurses and other hospital staff. Nurses often fail to comply with HH protocols due to inconvenient access to handwashing utilities or shortage of time to perform this procedure. In response, gelFAST (see figure), a wearable and disposable alcohol gel dispenser, was designed to challenge the problem of low HH compliance.

**Objectives:** This pilot study examined the efficacy of gelFAST in improving HH compliance among nursing staff in an acute care hospital setting, as well as the attitudes of the staff towards the use of such a device.

**Methods:** A 6-week observational pilot study was conducted on three acute care medical wards (Units A, B, and C) of a university-based hospital. Seventy-five (75)

registered nurses participated in the study. Weeks 1 and 2 were baseline periods during which the nurses' normal level and type of HH control practices were measured. During weeks 3 to 6, gelFASTs were distributed to the nurses as an alternative HH device and the same hygiene practices were observed and measured. To account for any unexpected factors, such as unexpected viral breakouts, unit C was kept as the control group throughout the 6 weeks of the study--i.e. gelFAST was not distributed to this unit. All of the nurses were observed and followed during various routine patient care practices by two different observers without replication.

**Results:** A total of 3915 baseline events of HH opportunities were observed during weeks 1 and 2 across all units and weeks 3 to 6 from the control unit C, and a total of 1868 intervention events were observed during weeks 3 to 6 from units A and B. An average proportional improvement in HH compliance of 17% was calculated from baseline to intervention phases. To determine if the observed increases were statistically significant, all data were standardized in order to take into account the possibility of observer effects as well as other potential impacts on measured HH compliance, such as the care unit and study phase. Upon comparison of the standardized data, it was found that the observed increases were statistically significant ( $p = 0.006$ ). Compliance rates on the control unit C did not significantly change throughout the study.

**Conclusions:** Overall HH compliance significantly increased when gelFAST was provided as an alternative HH mechanism. Furthermore, the majority of nurses found that gelFAST was an easy-to-use and convenient alternative.